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FACULTY OF LAW - ALEXANDRU IOAN CUZA UNIVERSITY OF IASI

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Editors

EU AND ITS NEIGHBOURHOOD: ENHANCING EU ACTORNESS IN THE EASTERN BORDERLANDS

EURINT 2020

CONFERENCE PROCEEDINGS



EDITURA UNIVERSITĂȚII „ALEXANDRU IOAN CUZA” DIN IAȘI

**Bogdan-Constantin IBĂNESCU | Cristian ÎNCALȚĂRĂU | Ciprian ALUPULUI
& Anatolie CĂRBUNE**
- editors -

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FOREWORD

The EURINT conference series was launched by the Centre for European Studies in 2013 in the frame of the Jean Monnet Life Long Learning Programme. Since that year the EURINT conference has established itself as one of the most visible academic events in the field of European Studies from Central and Eastern Europe and in this regard we are pleased and proud to have managed to develop it into a renowned conference series in the region. The EURINT conference package addresses academics, policy-makers, stakeholders and representatives of civil society who show a genuine interest in European Studies and in contributing to developing a transnational network of contacts and cooperation focusing on Central and Eastern Europe. The EURINT Conference series comprise keynote lectures and panel debates involving international experts, followed by intensive Q&A sessions. The audience is strongly encouraged to take the floor and challenge speakers with their own views and reflections of the topic and, thus, add to the debate.

The recent international events underlined the multiple challenges that both EU and its Eastern Neighbourhood constantly face and need to answer. From the Ukrainian crisis to the recent developments in Belarus, or the economic handicap of Eastern regions, a plethora of issues requires constant attention from the European international actors. Under these premises, the Centre for European Studies organized this year edition seeking to bring additional insights into the way the EU policies are being framed and adapted in order to hamper the imbalances at the level of the borderlands between the EU and non-EU states in Eastern Europe. Besides the main topics of the event which gravitated around the theoretical conceptualization and factors underpinning the EU role in the Eastern neighbourhood, regionalization initiatives, sustainable development, EU governance and the borderlands between EU and the non-EU countries, this year hosted three thematic workshops (Resilient EU: studies from the Eastern neighbourhood; Cross border cooperation and peripheral areas in Eastern Europe; Digital inequalities and discrimination: Legal and societal issues) which benefited from the presence of leading academics from around the world.

The online event conveyed knowledge about EU's opportunities and risks in today's increasingly volatile global context by bringing together relevant scholars, researchers, experts and civil society activists into a constructive exchange of views on scenarios laid out ahead for the European Union. The international cooperation between renowned academics from universities or research institutes as well as policy makers and regional actors from European Union and its neighbourhood represents one of the most suitable solutions for answering the abovementioned challenges.

Editorial team

THE IMPLICATIONS OF EUROPEAN NEIGHBOURHOOD POLICY ON SUSTAINABLE DEVELOPMENT OF TOURISM IN EASTERN EUROPEAN COUNTRIES

Mihai TALMACIU*, Irina Teodora MANOLESCU**,
Stanislav PERCIC***

Abstract

The sustainable development of the tourism in the Eastern Partnership countries is closely dependent on solving problems of common interest that can be managed only by promoting bilateral or multilateral cooperation relations. Thus, appropriate policies regarding the following areas can be adopted: integrated management of the borders and of the movement of people (tourists), integrated management of the environment and of the ecosystems, the interconnection of the transport networks, the development and integration of regional tourist markets under the conditions of environmental protection and cultural heritage preservation, the promotion of good practices in terms of sustainability in tourism.

The present study aims to identify and analyse the implications of the initiatives adopted within the European Neighbourhood Policy on the sustainable development of tourism. For this purpose the authors made use of programming documents and reports of the European Commission, as well as statistical reports on tourism development in these countries.

Keywords: eastern partnership, neighbourhood policy, tourism, sustainable development

Introduction

The issue of sustainable development is a particularly important one on the agenda of international and European institutions. The Green Deal Strategy for the period 2019-2024 adopted by the European Commission encourages the economic sectors to propose projects, products and services that contribute to sustainable

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development. In this context, for the 2019-2024 programming period, interregional and cross-border cooperation initiatives that aims the sustainable development of tourism in the Eastern Partnership (EPA) countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) will be encouraged and supported (Tambovceva *et al.*, 2020).

Depending on the availability and attractiveness of tourist resources and participation in international tourist flows, the countries of the former communist bloc from Central and Eastern Europe can be considered as emerging on the international and European tourism market and have significant growth rates of tourism (Băndoi *et al.*, 2020).

In the last 3 decades, tourism has played and continues to play an important role in the development of many countries, while in the case of some developing countries it is the main source of development. Thus, according to the UNWTO (World Tourism Organization, 2020), international tourist flows tripled between 1995 and 2019, growing from 530 million to 1457.7 million.

The European Neighbourhood Policy (ENP), launched in 2004, aims to improve prosperity (welfare), stability and security among the neighbouring countries of the European Union (EU) by establishing effective partnerships with them, in order to eliminate any demarcation line with its southern and eastern neighbours. The EU Partnership Agreement provides privileged relations with neighbouring countries, based on mutual commitment to respect for common values: democracy and human rights, the promotion of the rule of law and good governance, the implementation of market economy principles and sustainable development. In this way, the EU's neighbouring countries are more strongly involved in European policies, and by encouraging cooperation between them they can benefit from political association, deeper integration of economies, increased mobility and people-to-people contacts, which foster tourism development and transfer of know-how (Kostanyan, 2017).

In the context of the ENP, regional and multilateral cooperation initiatives between the EU and Eastern European countries have been implemented: Eastern Partnership (EaP) launched in Prague in 2009 and Black Sea Synergy launched in Kiev in 2008. To support multilateral cooperation projects, the European Neighbourhood Partnership Instrument (ENPI) has been set up to finance various actions in the following areas: justice and public administration reform, agriculture and rural development, education and private sector development; aiming to improve cooperation relations with the six member states of the Eastern Partnership, including the Russian Federation (European Commission, 2015). The aim is to reduce the disparities between the EU and the countries with which it has direct borders.

In 2014, three of the member countries of the Eastern Partnership (ENP East) - Georgia, Moldova and Ukraine - signed Association Agreements and The Deep and Comprehensive Free Trade Agreements with the EU, and in 2017 Armenia concluded negotiations with the EU to sign such agreements, while Azerbaijan



started negotiations. By signing these agreements, the European Union provides financial support to achieve the objectives set out in the action plans, encourages economic integration and access to European Union markets, facilitates travel to Member States and provides technical assistance and political support (Eurostat, 2018).

In this context, the signing of agreements and the liberalization of travel visas yields many beneficial results: supporting democracy and European integration processes in Eastern Partnership countries, stimulating trade relations and economic activities, increasing tourist flows and people-to-people contacts, limiting the flow of illegal migrants in the EU, increased credibility in relations with the EU and trust between partners (Kostanyan, 2017; Dumas and Goldner Lang, 2015).

Thus, structural reforms have been encouraged to support economic development, to improve economic governance, to attract foreign direct investment and to increase economic resilience. Between 2009 and 2019, more than 125,000 small and medium-sized enterprises from EaN countries benefited directly from EU funding, more than 25,000 new jobs were created and 11 billion in investment funds were mobilized (European Commission, 2020).

According to the results of the annual survey conducted in 2019 among citizens of the 6 EAP member countries, which aims to study their perceptions of relations with the EU, the top 3 places among the areas that must play the most important role are: promoting economic development (50%), creating better employment opportunities (34%), reducing corruption (32%). The growth of tourism ranks ninth in the top of priorities with a share of 14%. Regarding the most important positive effect of EU support to EaN countries, 61% of respondents indicated an increase in tourism, followed by better access to goods and services (56%), and improved market conditions (54%). The distribution by countries of the percentages of citizens who indicated the increase of tourism as the most important positive effect was as follows: Georgia - 85%, Azerbaijan - 70%, Armenia - 68%, Belarus - 58%, Ukraine - 58%, Moldova - 48% (EU Neighbours East, 2019).

Through this study, the authors aim to identify the policies and initiatives adopted by the member countries of the Eastern Partnership, in order to increase the contribution of tourism to sustainable regional development. At the same time, they aim to analyze the implications of the identified initiatives on the development of tourism, by maximizing the positive effects in economic and social terms and minimizing the negative effects on the environment and cultural heritage. Programmatic documents and reports of the European Commission on the development of partnership and cross-border cooperation relations with the countries on the eastern border of the European Union were used for this purpose. Also, it was made use of information on the initiatives taken by the 6 Member States together with the EU, in order to find solutions to the chronic problems facing the countries in the region: security and territorial integrity, social cohesion and security of citizens, energy dependence, resilience and development of economies, the rule of law and the independence of the judiciary, the fight against corruption. At the same time, statistics on the development of tourism in these countries were used.



1. Sustainable tourism development in the context of cross-border cooperation

The issue of sustainability in tourism has attracted the interest of representatives of academia, but also those responsible for developing tourism policies in the public or private sector and at different levels of government. Thus, concerns for sustainability in tourism have been the focus of international bodies that develop tourism policies: United Nations Environmental Program (UNEP), United Nations World Tourism Organization (UNWTO) and the World Travel and Tourism Council (WTTC); but also of some national and regional bodies empowered to elaborate regional policies (EU, European Commission). Despite the success of the concept of sustainable tourism in the political and academic world, the contribution of tourism to climate changes and the natural environment change has amplified with its economic growth (Hall, 2013). In addition to the many economic and social benefits of increasing international tourist flows, many studies draw attention to the increasing incidence of negative implications for the natural environment: changes in the destination and use of land, increased energy consumption, reduction of biodiversity and the threat of extinction of many wild species, the emergence and spread of diseases among regions of the globe, changes in the perception and attitude of tourists and host communities towards the environment (Gössling, 2002; Gössling and Hall, 2006; Hall and Lew, 2009; Hall, 2013).

Regarding the attempts to clarify the concept of sustainable development of the tourism in the literature, there is a lack of consensus regarding the explanation and particularization of the broad concept of sustainable development to the specificity of tourism (Berno and Bricker, 2001). Attempts to define the sustainable development of tourism can be divided into two categories: a first category that focuses on sustainable tourism as an economic activity and the second that perceives tourism as an important component of sustainable development policies (Nistoreanu, 2007). These attempts have failed to establish a clear theoretical link between the broader concept of sustainable development and applicability to the particular context of tourism (Sharpley, 2000).

The WTO defines sustainable tourism as the tourism that takes full account of its economic, social and environmental impact, matching the needs of visitors, economic and social actors in tourism, the environment and host communities (United Nations, 2015). The process of sustainable tourism development is “the tourism that meets the needs of current tourists and host regions, while protecting and amplifying opportunities for the future... leading to the management of all resources so that economic, social and aesthetic needs can be met while maintaining cultural integrity, essential ecological processes, biological diversity and the integrity of life support systems” (WTO, 1998). The principles set out in this definition are almost impossible to agree on and apply in practice. The complicated context of sustainability in tourism development needs a holistic approach that requires high levels of cooperation, collaboration and integration. Sustainability in tourism is in fact related to competition in the distribution of tourism resources that



have a finite character and require a political solution, an attempt to balance between tourism activities and other potential economic activities.

The contribution of tourism to sustainable development has a dual character. On the one hand, the development of tourism generates indisputable positive socio-economic effects (direct and indirect), and on the other hand it has undesirable effects on the environment. In recent decades, European Union policies have increasingly focused on promoting sustainable tourism initiatives, as economic development and the protection of the natural environment are closely linked and mutually supportive objectives. The concept of sustainable tourism refers to the following aspects: conservation of biodiversity and natural landscapes, optimal use of tourist resources, preservation and conservation of identity and cultural heritage, economic and social activities that contribute to increasing the long-term welfare of the host communities (Tambovceva *et al.*, 2020).

Approached in a cross-border context, tourism plays an important role in economic and political integration strategies. Research has shown that cross-border attempts to govern tourism face many obstacles, from institutional mismatches to non-recognition of mutual benefits of cross-border flows of tourists by stakeholders (Stoffelen and Vanneste, 2017; Blasco *et al.*, 2014; Ilbery and Sexena, 2011). Attempts at sustainable governance of cross-border tourism must lead to a fair spatial distribution of the positive economic effects generated by tourism, by creating cross-border institutional structures capable of highlighting the regional development potential offered by tourism development within border regions (Stoffelen and Vanneste, 2016).

Studies have identified some causes that limit the success of initiatives to set up cross-border tourism governance institutions. These include institutional incompatibility and inadequate planning and funding processes, which lead to tourism governance processes oriented towards the administrative territory of each country and not to mutually beneficial agreements and long-term cross-border cooperation actions (Blasco *et al.*, 2014). Moreover, EU financial support is most often targeted at local projects and not at structural institutional alignments, demonstrating the limitations of these financial support schemes. They aim to remove barriers to cross-border cooperation, but do not have a decisive influence on removing structural and institutional mismatches at different levels of cross-border tourism governance (Stoffelen and Vanneste, 2017).

The complexity of cross-border governance processes can undermine the attempts to establish flexible cross-border relations between tourism stakeholders, in order to capitalize the available resources and to increase the contribution of tourism to regional development. Specifically, inequality in power relations and differences in the representation of local values can lead to an unfair distribution of the costs and benefits of tourism development and can undermine the support and success of cross-border cooperation projects. Prokkola (2007; 2008) considers that the intensity of cross-border interactions in EU-funded tourism projects has been relatively low and, after the end of funding, the interactions have been short-lived. Thus, the implementation of collaborative initiatives that aim at supporting cross-border



tourism is not a guarantee for sustainable regional development (Stoffelen and Vanneste, 2017).

The EU's external border regions are heterogeneous, with divergent characteristics and development patterns (Topaloglou *et al.*, 2005), so that the adoption of practices from one (border) region to another raises issues. Despite the differences between the EU's external border regions, some common features can also be identified in terms of poor economic performance and weak links on knowledge transfer (Autant-Bernard *et al.*, 2017; Petrakos and Topaloglou, 2008). Therefore, even if it is not possible to generalize the results of research obtained in one external border region to all the others, the experiences and lessons learned can provide valuable information for understanding the relations between the other regions at the EU's external borders.

Thus, appropriate policies can be adopted for: integrated border management and mobility of people (tourists), integrated management of the environment and ecosystems in the Black Sea neighboring countries, interconnection of EU transport networks with those of partner countries, development and integration of regional tourism markets in terms of environmental protection and cultural heritage, promoting good practices in terms of sustainability in tourism.

2. Research methodology

In order to achieve the objectives stated by the authors, scientific studies and articles, programmatic documents and reports of the European Commission on the development of partnership and cross-border cooperation relations with the countries on the eastern border of the European Union were identified and analyzed. Information on projects and initiatives carried out by the 6 Member States together with the EU, published on the official website of the Eastern Partnership (EU Neighbours East, EU actions in the neighbourhood - tourism), was also used. At the same time, statistics on tourism development provided by the World Tourism Organization (UNWTO), Eurostat (2018) and national statistical organizations were used.

In order to identify the main problems that the development of tourism is facing within the 6 member states of the Eastern Partnership, the empirical research was based on an integrated methodology, which combined descriptive-exploratory research with quantitative analysis of statistical indicators on socio-economic development of tourism and with the qualitative analysis of the strategic documents and of the projects developed by the 6 member countries in partnership with the European Union.

The analysis of the documents was performed on three levels: strategic objectives, action plans, and initiatives and projects carried out. In order to highlight the importance given to sustainability at the strategic level in each of the 6 countries, the strategic documents on tourism development were identified and analyzed. For this purpose, the extent to which the objectives set out in the strategic plans support



the clear orientation towards sustainability of tourism development in these countries was analyzed.

In order to determine the orientation towards sustainability of the projects initiated by the Eastern Partnership countries within the European Neighborhood Initiative (ENI) in the field of tourism, 141 projects developed in the period 2013-2020 were identified and analyzed. They were divided into two categories: joint cross-border cooperation projects (18 integrated initiatives, with 39 national initiatives) and national projects (102). In order to establish the extent to which the projects support the orientation towards sustainability of tourism, they were divided into several categories according to the objectives pursued. Their clustering was performed based on a comparative analysis, taking into account the economic, socio-cultural and ecological (environmental) context of each.

3. Research results

All countries from the Eastern Partnership face many security and stability challenges in the EU's eastern border regions, which can have a negative influence on tourism development: security and territorial integrity risks (conflicts between Ukraine and Russia that have culminated in the annexation of the Crimean peninsula by Russia, the conflicts between Armenia and Azerbaijan over the autonomy of the Nagorno-Karabakh region, the incidents in the secessionist territories of South Ossetia and Abkhazia in Georgia, the disputes between the Republic of Moldova and Russia over the Transnistrian secessionist region), vulnerability of economies, energy dependence, social risks to which citizens are exposed as a result of conflicts and of autocratic regimes affecting the rule of law (Belarus). Russia's interference and information warfare continue to undermine the EU's efforts to promote sustainable democratic reforms in these countries.

According to statistics from the World Tourism Organization (UNWTO), international flows of tourists to Eastern Partnership countries have increased since the launch of the European Neighborhood Policy (ENP) in 2004 (Table 1).

Thus, in the period 2005 - 2019 the arrivals of international tourists registered substantial increases in most countries: Georgia - 9.7 times, Belarus - 8.7 times, Armenia - 5.96 times, Azerbaijan - 5.92 times and the Republic of Moldova - 2.6 times. The exception is Ukraine, which saw a sharp decline in foreign tourist arrivals after the outbreak of the conflict with Russia in April 2014, from 24.671 million in 2013 to 12.712 million in 2014.



Table 1. International arrivals of tourists in EAP countries (millions)

| Country | 2005 | 2010 | 2015 | 2018 | 2019 | Growth 2019/2005 |
|------------|--------|--------|--------|--------|-------|------------------|
| Armenia | 0,319 | 0,684 | 1,192 | 1,652 | 1,9 | 5,96 |
| Azerbaijan | 0,693 | 1,28 | 1,922 | 2,633 | 2,9 | 5,92 |
| Belarus | 0,253 | 0,677 | 0,966 | 2,142 | 2,201 | 8,69 |
| Georgia | 0,56 | 1,067 | 3,012 | 4,757 | 5,080 | 9,07 |
| Moldova | 0,067 | 0,064 | 0,094 | 0,161 | 0,174 | 2,6 |
| Ukraine | 17,631 | 21,203 | 12,428 | 14,104 | 15 | 0,85 |

Source: World Tourism Organization (UNWTO)¹

Table 2. T&T economic impact in EaP countries, 2019

| | Arm | Azr | Blr | Geo | Mld | Ukr |
|--|------|------|-----|------|------|-----|
| Total Contribution of Travel&Tourism to GDP (%) | 11,8 | 7,2 | 6,4 | 26,3 | 7,3 | 5,9 |
| 2019 Travel&Tourism GDP Growth (%) | 4,7 | -26 | 6,3 | 2,6 | 3,9 | 6,1 |
| The Contribution of Travel&Tourism to employment (%) | 12,5 | 7,7 | 6,7 | 27,7 | 7,6 | 6,2 |
| The contribution in total of exports (%) | 25,2 | 11,1 | 2,9 | 39,5 | 14,5 | 3,8 |
| The Competitive position (The T& T Competitiveness report) | 79 | 71 | nd | 68 | 103 | 78 |
| The Sustainability of TT development (The T& T Competitiveness report) | 101 | 97 | nd | 76 | 63 | 114 |

Source: World Travel & Tourism Council²

The data on the economic impact of tourism (Table 2) highlight the following aspects:

- in the case of Georgia and Armenia, the total contribution of tourism to GDP and employment exceeds the overall global contribution (over 10%). In the other countries, the two indicators have values below the world average.
- 5 of the Eastern Partnership countries saw an increase in the contribution of tourism to GDP in 2019 compared to 2018 (except for Azerbaijan which decreased by 26%);
- Armenia and Georgia have the highest shares of the tourism and travel industry in total exports, 39.5% and 25.2% respectively. High shares are also registered in the Republic of Moldova (14.5%) and Azerbaijan (11.1%);

¹ World Tourism Organization (UNWTO) (2020), Tourism Statistics data (retrieved from <https://www.unwto.org/statistic/basic-tourism-statistics>).

² World Travel & Tourism Council (2020), Annual Research: Key Highlights, (retrieved from <https://wtctweb.on.uat.co/Research/Economic-Impact>).

- according to the ranking on the competitiveness of tourism made by the World Economic Forum in 2019³, the Eastern Partnership countries are in the middle of the ranking, except for the Republic of Moldova which is ranked 103. The best positioned is Georgia which ranks 68th.
- in terms of the sustainability orientation of tourism, according to the same report, 3 of the six countries are ranked at the bottom of the ranking: Ukraine ranks 114th, Armenia 101th and Azerbaijan 97th. The Republic of Moldova and Georgia are in the middle of the world rankings.

In this context, the long-term political objectives of the Eastern Partnership for the period after 2020 aim to support sustainable development by ensuring resilience in all components of development: resilient, sustainable and integrated economies; accountable institutions, the rule of law and security; environmental and climate resilience (application of the provisions of the Paris Green Deal Agreement); resilient digital transformation and resilient, fair and inclusive societies (Table 3).

Table 3. Eastern partnership policy objectives beyond 2020

| Political objective | Measures |
|--|---|
| Strengthening the economy - creating a resilient, sustainable and integrated economy | Better regional / bilateral integration of economies, encouraging structural reforms, better access to finance for SMEs, encouraging entrepreneurship among women and young people, developing human capital and connecting the education and research system to the needs of the private sector. |
| Commitment to good governance - responsible institutions, the rule of law and security | Support and monitor of the judicial and rule of law reforms, fight economic crime and corruption, cooperation in order to combat natural disasters, support of the conflict-affected populations through security and cooperation dialogues. |
| Promoting climate neutrality - Implementing the provisions of the Paris European Ecological Agreement (Green Deal) on modernizing economies and reducing the carbon footprint. | Promoting the concepts of “green economy” and “green jobs”, developing local renewable energy sources, improving governance and collaboration with civil society, the transition to sustainable and smart mobility, actions to improve people’s health and well-being and the transition to a fair and prosperous society . |
| Improving connectivity - stimulating sustainable development by ensuring access to high-quality communications infrastructure and services (encouraging digitization) | Expanding secure and high-capacity Gigabit broadband in remote areas, implementing roaming agreements between partner countries, strengthening e-Government - efficient, transparent and accountable public administrations, supporting and assisting cyber security. |

³ World Economic Forum (2019), The Travel & Tourism Competitiveness Report 2019, Geneva (retrieved from <https://www.weforum.org/reports/the-travel-tourism-competitiveness-report-2019>).



Resilient, fair and inclusive societies - involved civil society, free, plural and independent media, and protection of citizens' rights

Involvement of the citizens and civil society organizations in decision-making by the authorities and in the development of public policies, support the proper functioning of the media, support social, economic and political inclusion, and ensure mobility and people-to-people contacts in a safe and well-managed environment.

Source: EU EaP - Eastern Partnership (2019) The Eastern Partnership beyond 2020: reinforcing resilience an Eastern Partheship that delivers for all

3.1. Orientation towards sustainable tourism in the strategic plans on EaP countries

Armenia's 2014-2025 National Development Strategy⁴ highlights tourism as one of the 5 priority sectors for exports and job creation. Although the orientation towards sustainable tourism is clearly stated, on the whole the signals transmitted at strategic level are diffuse. Thus, in the list of principles and values promoted at governmental level in the field of tourism, the elements regarding sustainability appear on positions 5 (Sustainable development emphasizing long term preservation and protection of natural and cultural heritage) and 7 (Nature and environmental protection).

Within the strategic documents on tourism development, growth is prioritized and the orientation towards sustainability appears to be rather secondary (USAID, 2008). It appears within some of the secondary objectives (design new, competitive destinations, prioritize tourism sites and attractions in Armenia; ensure effective use and preservation of natural, cultural and historical resources; identification of new resources; develop ecotourism in specially protected natural areas; identify new natural, cultural and historical monuments and create new tourism attractions; higher quality services; ensure active and effective cooperation among all stakeholders to promote sustainable tourism).

The strategic direction of tourism development in Azerbaijan covers the following steps in setting priorities for the implementation of the objectives (Government of the Republic of Azerbaijan, 2016): the strategy and action plan until 2020, the strategic vision until 2025 and the vision for the period after 2025. None of the strategic objectives refer in detail to the sustainable development of tourism: realization of Baku's full tourism potential by attracting more international visitors; creation of favorable environment for the development tourism across the country; development of regional tourism sub-sectors for domestic and regional tourists; creation of national tourism quality system to increase tourists' satisfaction.

⁴ RA Government (2014), Armenia Development Strategy for 2014-2025 (retrieved from https://policy.asiapacificenergy.org/sites/default/files/Development%20Strategy%20of%20the%20Republic%20of%20Armenia%20for%202014-2025_ENG.pdf).

In the case of Georgia, one of the main objectives of the “2025 Strategy” (Georgian National Tourism Administration, 2016) on tourism is to attract tourists from the EU, North America and neighboring regions. For this purpose, 8 secondary objectives are set, the first two of which set the focus on sustainability: protecting and enhancing Georgia’s natural and cultural heritage and using Georgia’s natural and cultural heritage to provide unique and authentic travel impressions. The other 6 objectives aim to increase the tourism sector and improve competitiveness.

Even if the national development strategy of the Republic of Moldova does not refer directly to tourism, the orientation towards sustainability is provided in objectives 1, 5 and 6⁵: aligning the education system with the needs of the labor market to increase labor productivity and increase employment in economy; reducing energy consumption by increasing energy efficiency and the use of renewable energy sources; ensuring the financial sustainability of the pension system in order to ensure an adequate wage replacement rate.

Some of the objectives of the Sustainable Tourism Development Strategy of the Republic of Moldova in the period 2003-2015 (Sustainable Tourism Working Group, 2012) provided the orientation towards tourism sustainability: ensuring that tourism is developed in a sustainable way, so that the heritage is preserved for future generations; preserving the country’s major heritage and environmental attractions; providing high quality products and services to visitors.

The tourism development strategy “Tourism 2020” in the Republic of Moldova⁶ does not explicitly highlight the orientation towards tourism sustainability, all 5 objectives prioritizing the growth of tourism: improving the legal framework in the field of tourism in accordance with tourism market requirements, adjusted to European standards; capitalizing on the national tourist potential and promoting the image of Moldova as a tourist destination; regional development of tourism; improving the level of training of specialized staff and the quality of tourist services; technological modernization of the tourism industry through the use of information and communication technology.

In 2017, under the auspices of the United Nation Development Program and the Global Environment Facility, the project “Strategy of sustainable development of Ukraine until 2030” was developed by UNDP (UNDP, 2017), whose objectives are set in accordance with the UN 2030 Sustainable Development Goals and the Paris Agreement on Climate Change.

Regarding the strategic orientation towards sustainability of tourism in Ukraine 5 of the 14 objectives included in The State Program of Tourism Development for 2002-2010 are related to sustainable development (Ministry of

⁵ Government of the Republic of Moldova (2012), National Development Strategy „Moldova 2020”: SEVEN solutions for economic growth and poverty reduction (retrieved from <https://cancelaria.gov.md/en/apc/national-development-strategy-moldova-2020-seven-solutions-economic-growth-and-poverty-reduction>).

⁶ Agenția Turismului a Republicii Moldova (2014), Strategia de dezvoltare a turismului „Turism 2020” (retrieved from <http://turism.gov.md>).



Economic Development and Trade, 2017): sustainable development of the tourism industry and increase its part in the macroeconomic amount; improvements in living standards and creating workplaces; improving the quality and expand the range of travel services; efficient use of recreational resources and cultural heritage; introducing effective innovation and create the scientific base of tourism. However, the strategy developed for the next programming period (“Tourism and Resorts Development Strategy” approved in 2008) prioritizes growth, none of the 7 objectives explicitly referring to the orientation towards sustainability.

A report on direct investment in tourism made for Armenia places natural attractions in quadrant 4, with low attractiveness for investors and low value of foreign direct investment flows. Under these conditions, EU programs are among the most accessible for making investments in objectives that facilitate tourism (road and rail infrastructure, natural attractions, museums, historical sites, entertainment and recreational activities, providing support services). Products specific to sustainable tourism: adventure tourism, religious tourism, cultural tourism, event tourism (MICE - meetings, incentives, conferences, exhibitions) are considered packaging of low-investment products (World Bank, 2018).

3.2. Orientation towards sustainable tourism within the projects

Projects and initiatives funded through the European Neighborhood Instrument (ENI) and other European or national funding sources have been a viable alternative for supporting sustainable tourism in EaP countries (Table 4). The budget allocated to ENI for the period 2014-2020 was 15.4 billion Euros, of which about one third (5 billion Euros) is the allocation to support projects in the Eastern Partnership countries (European Commission, 2015). Through ENI, initiatives are funded to support projects specific to the three components of sustainable development: economy (EU4Business, Creative Europe, EU4Digital), social (EU4Youth, EU4Gender Equality, Cross-Border Cooperation, EU Initiative on Health Security, EU4Monitoring Drugs), environment (EU4Environment, EU4Climate, EU4Energy).

As can be seen from Table 4 during the 2013-2020 period, 141 projects related to tourism in the Eastern Partnership countries were identified. A larger number of projects were identified in countries where tourism is an important component of the economy: Armenia 43 projects (5 in cooperation with other countries and 38 national), Ukraine 30 projects (8 in cooperation and 22 national) and Georgia 26 projects (10 in collaboration and 16 national); followed by: Belarus with 17 projects, Moldova 14 and Azerbaijan 11.

Regarding the 18 projects carried out through cross-border cooperation (15 of them can be included in the sphere of sustainability), depending on the objective pursued, they can be clustered as follows:

- projects that aims to facilitate connectivity (3): Georgia and Armenia - The Northern Corridor Modernization Project (the cross-border bridge); Belarus and

Ukraine: Improving international cooperation between the customs and border guard services and The “Dnipro Ferry” - cross-border project;

- projects aimed at environmental sustainability (1): Armenia and Georgia - Cross border cooperation teams focus on energy efficiency and renewable energy technologies;
- projects aimed at encouraging the business environment and competitiveness (3): Funding green and competitive SME businesses, build more integrated economies (all countries); Belarus and Ukraine - Contest of micro projects within the Transboundary Cooperation Programme; Georgia with Austria and Sweden - Improving business environment - mountain tourism and organic agriculture.
- projects aimed at social issues and good governance (6): Armenia, Georgia and Moldova - Partnership for Good Governance - Five initiatives on inter-municipal cooperation; Azerbaijan and Georgia EaP TC Programme - Improving the living conditions of local communities and Building regional capacity through culture, education and sports; Azerbaijan with Egypt - European Training Foundation - monitoring of the running EU projects; Georgia with Austria and Sweden - Improving livelihoods of vulnerable households in remote, high mountainous regions; Moldova with Ukraine - Routes4Youth a network of young professionals which work on regional development through the Cultural Routes;
- cross-border tourism development projects (5): Armenia and Georgia - The Black Sea Silk Road Corridor project, website to promote tourism, travel and shared culture; Belarus with Ukraine - The establishment of tourist route along Dnieper-Bug Canal; Belarus, Moldova and Ukraine - EU4Youth: “Rural Tourism through the School Garden”; Moldova with Ukraine - Project selection in food and heritage tourism, local entrepreneurship and business opportunities and Improving rural tourism in cross-border regions (Soroca).

Table 4. EaP countries initiatives and projects related on tourism between 2013-2020

| Initiative/Project Tipe | Ar | Azr | Blr | Ge | Mld | Ukr |
|---|----|-----|-----|----|-----|-----|
| Total | 43 | 11 | 17 | 26 | 14 | 30 |
| Common Initiatives | 5 | 4 | 7 | 10 | 5 | 8 |
| National tourism initiatives or related with tourism, of wich: | 38 | 7 | 10 | 16 | 9 | 22 |
| Events with different themes – including sustainable tourism | 18 | 3 | 5 | 6 | 3 | 15 |
| Suport for SME - Start-ups&Hackathon | 9 | | | 2 | 2 | 2 |
| Support during COVID-19 pandemic (tourism grants, mask production facilities) | 1 | 1 | | 2 | | |
| Renewable energy for accommodation facilities | 1 | | | | | 1 |



| | | | | |
|---|---|---|---|-----|
| Cycling tourism | 2 | 2 | | |
| Tourism digitalization | 2 | | | 1 |
| Rehabilitation of the historic centers | 1 | | | |
| Preserving and promoting cultural heritage, local sport, education and tourism | 2 | 2 | 1 | 2 |
| Outdoor adventures on historic trails (EU4Tourism) | 2 | | | |
| Bringing into motion the tourism attraction factors - Support to local creative production, | | 1 | 1 | |
| Sharing knowledge - tourism development , Strengthening the capacity of the Department of Tourism | | 2 | 2 | 2 2 |
| Nature tourism (“inclusive” tourist site for birdwatching) | | 1 | | |
| Complex projects Empowering Local Economic Opportunities for Sustainable Growth” | | | 1 | |
| ‘Skills Development for Better Employability’ - Support programme | | | 1 | 1 |

Source: authors’ representation based on EU Neighbours East site tourism projects informations - <https://www.euneighbours.eu/en/search/25?keys=tourism>

From the analysis of the 102 identified national initiatives and projects related to tourism development, it can be seen that three quarters of their number (76) are concentrated in three countries: Armenia 38, Ukraine 22 and Georgia 16. Lowest incidence of projects was registered in the case of Azerbaijan 7, followed by Moldova 9 and Georgia 10. Depending on the objectives pursued and their link with tourism sustainability, national projects can be clustered as follows:

- encouraging the business environment and competitiveness - supporting the resilience, sustainability and integration of tourism (17): Support for SME - Start-ups & Hackathon - 15 initiative (9 in Armenia, 2 in Georgia, 2 in Moldova and 2 in Ukraine), ‘Skills Development for Better Employability’ – 2 initiatives (Armenia and Ukraine), trainings on entrepreneurship; Support to local creative production and bringing into motion the tourism attraction factors 2 initiatives (Azerbaijan and Georgia);
- Knowledge transfer and sharing experiences - Events with different themes 47 initiatives (18 in Armenia, 15 in Ukraine, 6 in Georgia, 5 in Belarus, 3 in Azerbaijan and 3 in Moldova): festivals for promotion of local production, opening of Women Entrepreneurs’ club and Youth Houses, opening tourist information centers, promoting cultural Heritage, workshops on rural tourism, conferences on different themes tourism related, summer camps on rural development and tourism, Hubs for Healthy Gastronomy and Organic

Products, “boot camp” for promoting innovative rural entrepreneurship, seminars and forums on tourism development etc.

- projects aimed at sustainability in tourism - promoting climate neutrality: Renewable energy for accommodation facilities 2 (Armenia and Ukraine); Preserving and promoting cultural heritage, Support for local sports, culture, education and tourism 7 initiatives (1 in Georgia, 2 in Armenia, 2 in Belarus and 2 in Moldova); Rehabilitation of the historic centers Armenia 1 project;
- projects aimed at social issues and good governance: Sharing knowledge on tourism development, Strengthening the capacity of the Department of Tourism 8 initiatives (2 in Azerbaijan, 2 in Georgia, 2 in Moldova and 2 in Ukraine); Empowering Local Economic Opportunities for Sustainable Growth 1 project (Georgia);
- encouraging forms of sustainable tourism: Cycling tourism 2 initiatives (Armenia and Ukraine), Outdoor adventures on historic trails 2 initiatives in Armenia, Nature tourism - inclusive tourist site for birdwatching 1 project in Belarus;
- digitization in tourism (3 projects): 2 projects in Armenia and 1 in Ukraine;
- combating the effects of the pandemic crisis: Support during COVID 19 pandemic (tourism grants, mask production facilities) 4 initiatives: 2 in Georgia, 1 in Armenia and 1 in Azerbaijan.

The great variety of project orientation is specific to countries that have multiple needs to improve the field. The orientation towards sustainability is clear, thus supporting investments not covered by the private sector.

Conclusions

Eastern Partnership Member States have made real progress in the 16 years since the launch of the European Neighborhood Policy on multiple levels: improving the safety and security of citizens, strengthening democracy and the rule of law, promoting structural reforms to support economic development, improving economic governance, the integration of the economies of neighboring countries, increasing the mobility of people and people-to-people contacts, increasing tourism. However, they face many challenges, which can undermine the joint efforts of Member States and the European Union. Most countries face conflicts that can have a negative influence on tourism development.

Statistical data show a rapid increase in the flow of foreign tourists in all partner countries between 2005 and 2019, and in some countries tourism has a significant contribution to gross domestic product, employment and exports (Georgia and Armenia).

From the analysis of the programmatic documents on tourism development in the Eastern Partnership countries we can conclude that the growth of tourism is prioritized while the orientation towards sustainability appears rather as a secondary objective. The orientation towards tourism sustainability is explicitly provided in the strategic documents of Georgia and Armenia.



From the analysis of projects and initiatives adopted within Eastern Partnership countries during the 2013-2020 period, two categories can be identified:

- common initiatives (bilateral or multilateral) – oriented to: improving connectivity between countries, supporting SME financing, improving social issues and governance, supporting of some cross border tourism projects of common interest. Most of these projects contain objectives that support the orientation towards sustainability of tourism.
- national projects and initiatives oriented to achieve various objectives related to sustainable tourism development: promoting female and youth entrepreneurship, promoting newly opened tourism attractions (craft centers or parks), preserving of cultural heritage, financing of innovative start-ups, digitization of tourism, orientation to renewable energy, rehabilitation of historic center, Knowledge transfer and sharing of expertise, human resources development in tourism etc.

The distribution by countries of the identified tourism initiatives and projects highlights a higher incidence in countries with more developed tourism sectors or where the orientation towards sustainability is supported: Armenia 46 projects, Georgia 27, Ukraine 34. The projects identified in the field of tourism support achieving the political objectives of the Eastern Partnership for the next period: creating resilient, sustainable and integrated economies; responsible institutions, the rule of law and security; stimulating sustainable development by ensuring access to high quality communication infrastructures and services (encouraging digitization); implementing the provisions of the Paris European Ecological Agreement (Green Deal) on modernizing economies and reducing the carbon footprint; resilient, fair and inclusive societies.

Orientation towards sustainable tourism becomes an imperative requirement in the context of the current crisis in the tourism field.

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SPECIFIC PAYMENTS FOR ECOSYSTEM SERVICES AS PART OF THE WATER AND FOREST MANAGEMENT IN ROMANIA

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Abstract

Water and forests play a major role in the functioning of biosphere, their interactions being able to provide an extensive range of vital goods and services for the society, and, thus, significantly contributing to human wellbeing. With the aim of offering a better perspective of the national context, in this paper we analyzed (1) the level of recognition of the connection between forests and water in the policy of Romania, as extent of the EU Water Framework Directive and other EU directives; (2) the link between forests and water and their effects on human wellbeing in the context of Romania in the period between 2006-2016; (3) the description of some initiatives related to the payments for ecosystem services in Romania. Our findings emphasized the important role that forests and investments in terms of their extension are able to play in relation to water.

Keywords: water, forests, payments for ecosystem services, human wellbeing

Introduction

Protecting environment has become an important issue in the context in which “today’s environmental problems are increasingly complex” (Burke *et al.*, 2017) and represent a “threat” to human wellbeing (Dunlap and Scarce, 1991). In this way, it is considered that now it is the moment of learning how to advance without producing negative environmental side effects (Strange and Bayley, 2008, p. 17). More, the theoretical and practical tendency to pay greater attention to the environment is observed, sustained and encouraged nowadays. This is made in the context in which the dependence of human wellbeing on nature is more and more

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recognized, i.e. the multiple benefits that people obtain from ecosystems (MEA, 2005; TEEB, 2010; Grizzetti, 2016). Among these benefits, the ones related to water and forests are of great importance and they are indeed at the core of sustainable development, especially in terms of economic and human wellbeing (Haddadin, 2001).

Romania is among the countries that still confront to the challenge of finding an optimal balance between sustainable forest and water management (Rosculete *et al.*, 2019, p. 140). Moreover, the ecosystem services concept, including the ones referring to water and forests, seems to remain at a superficial level, its implementation still being in an explorative stage (Grizzetti, 2016, p. 186).

Taking into consideration these assumptions, our paper aims to discuss about:

- regulatory frameworks, especially those relevant for forest-water interactions and some national peculiarities regarding the payments for ecosystem services mechanism in Romania;
- links between: forests, water, economic and human wellbeing in the Romanian context of the period between 2006-2016;
- three case studies regarding local initiatives of improving water services through payments for actions related to trees, focusing on their characteristics and structure.

1. Theoretical approach regarding ecosystem services from the perspective of the interaction between water and forests

Taking into consideration the importance of the natural capital in general and of the forests, as one essential part of this type of capital, in particular, for the future of human societies, concentered into some fundamental benefits, their maintenance at an adequate status have to be especially addressed (Mihai, 2005, p. 449). As one response to this challenge, Ecosystem Services (ES) are usually defined as the benefit people obtain from nature (MEA, 2005; Brogna *et al.*, 2017), being a concept that aims at raising the awareness about the importance of preserving ecosystems and biodiversity (MEA, 2005). ES are related to: water supply and air purification, natural waste recycling, soil formation, pollination and mechanisms of regulation that nature (if there is no human intervention) uses them to control climate conditions and animal populations, insects and other organisms (EC, 2009).

In the context of the strong link between forests and water (Andréassian, 2004; Sun and Segura, 2013; Brogna *et al.*, 2017; Ellison *et al.*, 2017; Filoso *et al.*, 2017; Leonardi and Pettenella, 2018; Bran *et al.*, 2019; Nisbet *et al.*, 2020), among the ecosystem services, those related to them are considered to be of prime importance. Governments and societies are increasingly aware of the role that forests play in protecting watersheds, nearby their aquatic habitats and species; regulating stream temperature; filtering water; preventing erosion, landslides and the loss of soil or mitigating destructive events, such as flooding; providing an effective and approximately secure measure for tackling diffuse pollution from agriculture;

helping with carbon storage and other environmental benefits (Nisbet *et al.*, 2011; Ellison *et al.*, 2017; Leonardi and Pettenella, 2018; Nisbet *et al.*, 2020). Taking into account these amount of environmental benefits, in the words of Ellison *et al.* (2017, p. 51), “forests and trees must be recognized as prime regulators within the water”, their positive effects “demanding wider recognition”. In this way, reducing deforestation, investing in forest landscape restoration and preservation are part of adaptation, mitigation and sustainable development processes (Ellison *et al.*, 2017, p. 51). More, connecting forests to water management may offer the perspective of optimizing the provided ecosystem services of vital importance to the functioning of the biosphere, to society and to human wellbeing (Bastrup-Birk *et al.*, 2018, p. 7).

Moving on, obtaining the proper ecosystem services is achievable through financial support. Rubel (2012, p. 1) points on the general situation, still actual nowadays and emphasized more and more by the research studies, in which there is a relative higher environmental concern, but limited financial resources dedicated to solving and improving environmental issues. In this context, the payments for ecosystem services (PES) might be among the proper solutions to this problem, while they “can generate additional alternative resources, allocate funds to environmentally friendly management practices and sustainable production patterns, create incentives for investments, and increase the involvement of the private sector in environmental protection” (Rubel, 2012, p. 1). Leonardi and Pettenella (2018, p. 41) also remind the problems of budget austerity and include PES, among other voluntary, market-based mechanisms, “as an alternative source to public funding, and as an alternative source of income for private land owners for, among others, the provision of hydrological services”. In addition, the PES schemes have to consider the specificity of the profile of public goods consumers from different regions, potentially closely related to the water and forest ecosystems, their interactions and other implications starting from them (Mihai and Hanganu, 2018).

PES are defined in different ways, but the most common used definition refers to them as “a voluntary transaction, where a well-defined environmental service (ES), or a land-use likely to secure that service is being ‘bought’ by a (minimum one) service buyer from a (minimum one) service provider if, and only if, the service provider secures service provision (conditionality)” (Wunder *et al.*, 2008). A less strict definition is the one offered by Muradian *et al.* (2010), mentioning that they represent: “a transfer of resources between social actors, which aims to create incentives to align individual and/or collective land use decisions with the social interest in the management of natural resources”. More particular, directly referring to the link between forests and water, the PES are defined as follows: “a transfer of resources between at least 2 actors, explicitly targeted at improving water services (either primarily or bundled with other services) that pays (cash or in kind) for actions related to trees”¹.

¹ Payments for Ecosystem Services (Forest for water) (PESFOR-W), COST Action (CA15206), Available online: <https://www.forestresearch.gov.uk/research/pesforw/> (accessed on January 2020).



Local and regional structural elements, such as: the ecosystem structure, process and services; the type of actors; the institutional background etc. are recommended to be particularized when designing PES (Leonardi and Pettenella, 2018, pp. 41-42). Also, the key design aspects should consider the degree of: voluntariness (i.e. entering into an agreement and participating into it through a free and informed process of negotiation by the contracting parties), directness (i.e. receiving direct payments from the ultimate beneficiaries of the environmental service by the individual providers of that service), commoditization (i.e. if compensation received by environmental service providers has been determined by transaction involving a tradeable commodity), additionality (i.e. if the payment directly contributes to the increased provision of environmental service) (Leonardi and Pettenella, 2018, pp. 43-44).

In this way, payments for ecosystem services schemes represent a mechanism for enhancing the services provided by environment, including the one related to water and forests. For this, international, regional and national levels of regulatory frameworks need to be taken into account in the approaches related to the framework for forest-water interactions and, also, related to the foundation for the development of PES mechanisms.

2. Legal framework

2.1. The presence of Ecosystem services (ES) concept in the Romanian political discourse

A study called “Assessment of Ecosystems and Ecosystem Services in Romania” was recently elaborated and it analyzed the policy documents relevant for the main sectors related to ecosystem services as presented in Table 1 (NEPA *et al.*, 2017, p. 10).

Table 1. Relevant policy documents by sectors

| Policy sector | Policy document |
|---------------------|---|
| Water | Water National River Basin Management Plan 2015-2021 |
| Marine | National Strategy Monitoring Program for the marine environment 2014-2020 Article 12 - Technical Assessment of the MSFD 2012 obligations: reports for the Regional Seas - Black Sea |
| Forestry | European Strategy for the forest sector Forest Code National Rural Development Program 2014-2020 |
| Biodiversity | National Strategy Action Plan for biodiversity conservation 2014-2020 |

| | |
|---|--|
| Climate Change – Mitigation and Adaptation | National Strategy for Romania on Climate Change 2013-2020 National Action Plan 2016-2020 on Climate Change |
| Fisheries and Aquaculture | National Strategy for the fishery sector 2014-2020 National Multi-Annual Strategic Plan for aquaculture 2014-2020 Operational Program for Fisheries and Maritime Affairs 2014-2020 |

Source: NEPA, NINA, ROSA, WWF Romania, p. 10²

The concept of ES is also met in other documents related to environment, as, for example: *Law no. 197/2018 regarding the sustainable development of mountain region* and *Ecotourism Development National Strategy - context, vision and goals - 2016-2020* (Tudorachi *et al.*, 2015) etc.

Regarding Payments for Ecosystem Services (PES), to our knowledge, the collocation “compensatory payments” is more frequently used both in the political debate and in the strategic documents. More, Payments for Forest Water Services (W-PES) are not explicitly mentioned and no other substitute is used for defining W-PES in the legislation, in the strategic documents or in the political discourse. Our conclusion is also supported by the findings of UN (2018) in a report called “Forests and Water. Valuation and payments for forest ecosystem services”, where there is explicitly mentioned: “No references could be found on payments for water-related ecosystem services from forests in 30 out of 56 UNECE countries” and, in this list, Romania is present (Leonardi and Pettenella, 2018, p. 52). Thus, as a practical vehicle for environmental conservation and economic development, the concept of PES proves to be difficult to implement and any initial successes might be capable of facilitating learning processes and institutional change (Wang and Wolf, 2019, p. 5).

2.2. Legal framework for freshwater management in Romania

The necessity of having into attention the water issue and, also, of increasing the level of awareness regarding the closely link between water and forests is also certified by the United Nations Development Programmes (UNDP) in their approach on development. Water is of primary interest among the UN Sustainable Development Goals, its importance being emphasized in *Goal 6: Clean water and sanitation*. Moreover, the link between water and forests is accepted and recognized in SDG 6.6, which explicitly focuses on the necessity of protecting and restoring water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes. This is

² NEPA, NINA, ROSA, WWF Romania (2017), Assessment of Ecosystems and Ecosystem Services in Romania, in Demonstrating and promoting natural values in support of decision-making processes in Romania Project (EEA 2009 - 2014).



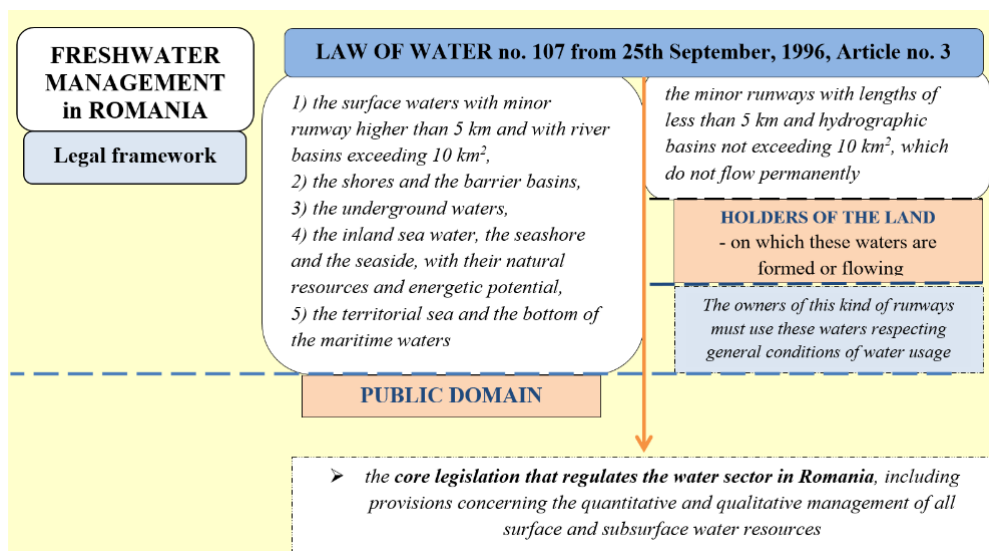
made in the context in which “more and more countries are experiencing water stress, and increasing drought and desertification is already worsening these trends”³.

In addition, according to Nisbet *et al.* (2020, p. 3), the main aim of European Union’s water policy is to ensure the availability of good quality water in a sufficient quantity, in order to properly respond for both people’s needs and the environment. The EU’s legal framework on water refers to issues like access, extraction and management of freshwater and main important water issues (quality, quantity, regimes flooding, erosion control, ecological status, recreation) etc., the reference document being the EU Water Framework Directive.

As pointed out by European Commission (EC, 2020, p. 12), “the EU’s legal framework on water is ambitious, but implementation is lagging behind and greater efforts are needed to restore freshwater ecosystems and the natural functions of rivers in order to achieve the objectives of the Water Framework Directive”.

In Romania, the freshwater management is mainly regulated by Law of Water no. 107 from 1996, modified and completed by the Law 310/2004, Law 112/2006, Law 146/2010, as well as Government Decision 270/2012, and the more recent Government Decision 1095/2013. Its main points are described in Figure 1.

Figure 1. Law of Water no. 107, 1996 – main topics



Source: authors’ representation

³ UNDP. UN Sustainable Development Goals. Available online: <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>. (accessed on February 2020).

The most important water issues in Romania are the following:

- Romania is among the EU countries most subject to large flooding events - surpassed only by Poland, Czechia and Slovakia for the frequency of 100-year floods.
- Floods have been occurring in Romania with growing frequency over the past centuries.
- Romania is almost a water-stressed country, with several river basins already below the water stress and/or water scarcity level (on a per capita basis).
- Many dams have deteriorated and have to be operated well below their initial design level to ensure safety.
- Significant impact of climate change, with more droughts and floods, is expected (World Bank, 2018).

2.3. Connection between forests and water in the legal framework

The connection between forests and water is referred within the Romanian legal framework, and some exemplifications of these references are the following:

- *Law no. 289(r2)/2002, Article no. 2 (applied since 26/02/2014) (with subsequent amendments)*: “the forest protection belts are of the following types: ... d) protection of dams and shores against currents, floods, ice, and others”.
- *Law of Water no. 107/1996, Article no. 31, paragraph 1 (with subsequent amendments)*: “Forests with special protective functions in reservoir basins, those with a high degree of torrents and erosion, major river beds in the Danube, as well as forest belts along the rivers undoubtedly belong to the group of forests with special water protection functions and are carried out through intensive treatments, cuts or short regeneration treatments being forbidden”.
- *Environmental Protection Law no. 137/1995, Art. 53 (with subsequent amendments)*: “Owners of forests, forest vegetation outside the forest fund and grassland have the following obligations: ... f) comply with the forestry regime established for the conservation of woody vegetation on wooded pastures that perform soil protection functions and water resources”.

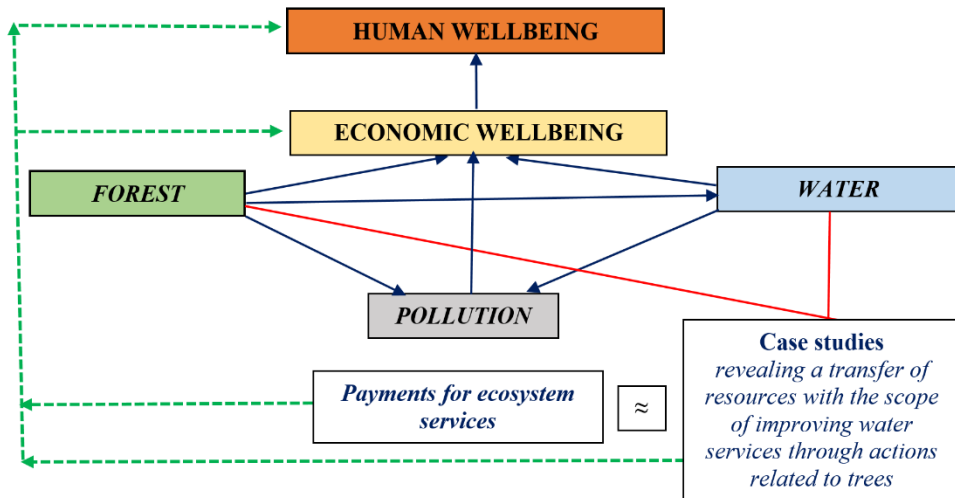
3. Connections between forests and water in the context of Romania in the period between 2006 and 2016 – preliminary study

Millennium Ecosystem Assessment (MEA) (2005, p. VI) links the ecosystem services, including the ones of the water and forests and their interactions, to human wellbeing, while also analyzing their strength and offering indications of the extent to which it is possible for economic factors to mediate the linkage. As stated in the introduction part, its conceptual framework is based on the fact that “people are integral parts of ecosystems and that a dynamic interaction exists between them and other parts of ecosystems, with the changing human condition driving, both directly and indirectly, changes in ecosystems and thereby causing changes in human wellbeing” (MEA, 2005, p. V).



Also based on this assumption, our endeavor directly emphasizes on the links among the share of forest area, including also the afforestation aspect, water from the perspective of its exploitation and human wellbeing, including also elements of economic wellbeing and pollution, as primary other important markers of the society and environment in general. Sun and Segura (2013, p. 121), in their graphic, offer a clear picture in which the “interactive processes among forests, climate, water and human systems” are emphasized, pointing on the links between: forests and water; forests and humans; water and humans. In their paper, it is also emphasized the fact that understanding these interactions is “essential in advancing actionable sciences and developing robust climate change mitigation and adaptation strategies and methodologies” (Sun and Segura, 2013, p. 120).

Figure 2. Conceptual framework for analysing the link between forests – water – economic and human wellbeing, in Romania in the 2006-2016 period



Source: authors' representation

Moreover, we have to mention the fact that it is a commune practice that the relation of influence between environment and society, with its two components, i.e. economic and social, to start from environment, as a main determinant of society's wellbeing (Costanza *et al.*, 2015; Wackernagel and Rees, 1995; van de Ker and Manuel, 2017; Ayres *et al.*, 2001; Dietz and Neumayer, 2007; Hediger, 2006; Harvey and Bell, 1995; Strange and Bayley, 2008; Banerjee, 2003; Robinson, 2004). In this way, we particularized the environmental dimension in terms of water, forests and pollution issues, called in the literature “the threefold relationships” (Rosculete *et al.*, 2019, p. 141). More, we sustain the point of view according to which the economic dimension is not an end in itself, but a means for achieving human wellbeing (van de Kerk and Manuel, 2017; Ulman *et al.*, 2020).

These are the main arguments for establishing our conceptual framework, presented in Figure 2, starting with the environmental aspects related to water, forests and pollution affecting firstly the economic performance and then, as an end, also affecting human wellbeing, evaluated in terms of food and drink sufficiency, safe sanitation, education, health, gender equity, income distribution, population growth and good governance (van de Kerk and Manuel, 2017). For this, we analyzed the relationships between forests and water and their influences on the economic and human wellbeing in Romania, along the 2006-2016 period of time. Further, we presented a brief description of three case studies relevant for our topic.

3.1. Methodology

In the first part, we analyze the human wellbeing model in relation to economic wellbeing and some environmental factors related to forests and water in Romania, along the 2006-2016 period of time. These represent main suppliers of ecosystem services that significantly contribute to improving human wellbeing, at least from the theoretical point of view and especially in the local contexts. For this, we used data collected from Sustainable Society Index (SSI), Eurostat and NIS (National Institute of Statistics)⁴ and the used indicators are presented in Table 2.

The main aim is to observe the relation between water and forests and their effects on human wellbeing, as final scope of economic and environmental actions.

Table 2. Indicators taken into analysis

| Indicator/Source of each indicator | |
|---|----------|
| Human Wellbeing (Human_Wellbeing) | |
| Human wellbeing is evaluated in terms of three categories: (1) basic needs (sufficient food, sufficient to drink, safe sanitation), (2) personal development and health (education, healthy life, gender equality) and (3) a well-balanced society (income distribution, population growth and good governance), as one of the three dimensions of a sustainable society, nearby economic and environmental wellbeing (http://www.ssfindex.com/ssi/indicator-description/). | SSI |
| Economic Wellbeing (Ec_Wellbeing) | |
| Economic wellbeing is evaluated in terms of two categories: (1) transition (organic farming and genuine savings) and (2) economy (GDP, employment, and public debt) (http://www.ssfindex.com/ssi/indicator-description/). | SSI |
| Share of forest area (Share_forest_area) | |
| The indicator measures the proportion of forest ecosystems in comparison to the total land area (% of total land area) [sdg_15_10]. | Eurostat |
| Area of the land submitted to afforestation schemes (Area_afforest_schemes) | |

⁴ NIS (National Institute of Statistics). Available online: <http://statistici.insse.ro:8077/tempo-online/> (accessed on May 2020).



| | |
|---|----------|
| Afforestation represents all works done for planting of seedlings or sowing a land area in order to create new forest trees, both on forest lands that has been exploited mature stand and on lands without forest vegetation [AGR304A]. | NIS |
| Water exploitation index (Water_Exploitation_Index) | |
| The indicator presents the annual surface water abstraction as a percentage of the country's long-term annual average surface water resources available for abstraction. The warning threshold of 20% for this indicator distinguishes a non-stressed from a water scarce region, with severe scarcity occurring where the WEI exceeds 40%. | Eurostat |
| Greenhouse gases (Greenhouse_gases) | |
| This indicator uses the common measure for Emission of Greenhouse Gases (GHG): the amount of emitted CO ₂ (emissions per capita per year). Thus other GHG emissions, like CH ₄ , N ₂ O, HFCs, PFCs and SF ₆ , are not included. | SSI |
| <i>Source:</i> SSI, Eurostat and NIS | |

We opted to use path analysis, as an extension to multiple regression analysis - a methodological tool that uses quantitative data to disentangle the various (causal) processes underlying a particular outcome (Lleras, 2015). More, our endeavour is based on the fact that path analysis is most helpful in testing the relationships between variables (such as relation between human and economic wellbeing or water and forests issues in relation to human and economic wellbeing) within a certain context that, in our paper, is the Romanian one in the period between 2006 and 2016. Path coefficients in path models are derived from the values of a Pearson product moment correlation coefficient and/ or a standardized partial regression coefficient (Wolfe, 1977). In these models, estimation of parameters permits decomposition of the correlation matrix. Validation of path analysis results is based on the values of several criteria: Goodness-of-fit (GFI), Adjusted GFI (AGFI), and Normed fit index (NFI) (Shumacker and Lomax, 2016).

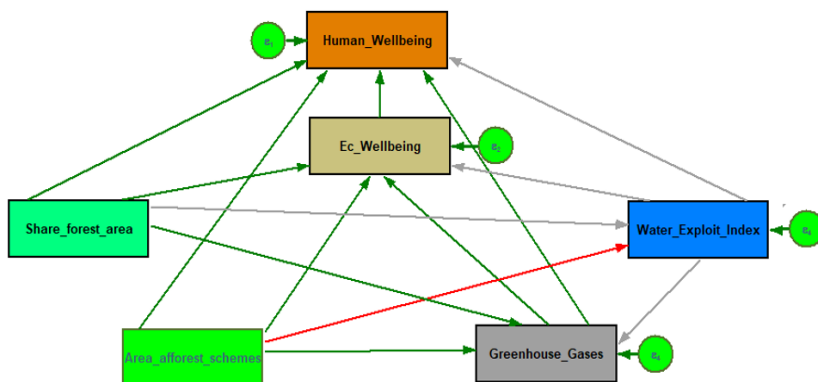
In this regard, path analysis helped us disentangle the complex interrelationships between human and economic wellbeing, environmental indicators related to trees, water and pollution and identify the most significant paths involved in predicting the outcome of human wellbeing, as analysed in the next part.

3.2. Path analysis

As already mentioned in the section dedicated to methodology, path analysis was used to investigate the relation between human and economic wellbeing and the selected environmental variables related to forests, water and pollution, while also observing, in the case of significant relationships, whether their effects are direct or indirect. In detail, the proposed model hypothesizes that increases in (1) the share of forest area and in (2) the area of the land submitted to afforestation schemes, along with a decrease of (3) water scarcity and (4) greenhouse gases are firstly associated with an increase in economic wellbeing and, then, in human wellbeing.

In order to determine the **total effects** of the selected variables on human wellbeing, but also the direct and indirect ones, we established that: (1) Human_Wellbeing is an endogenous variable; (2) Economic_Wellbeing; Greenhouse_Gases and Water_Exploit_Index represent intervening endogenous variables; (3) Share_forest_area and Area_afforest_schemes are exogenous variables (Figure 3).

Figure 3. Path diagram – total (cumulative) effects on the level of Human Wellbeing in Romania, in 2006-2016



Legend: green lines – positive effects, red lines – negative effects, gray lines – insignificant effects)

Source: SSI, Eurostat and NIS databases, computed in StataMP 13.0

For a better understanding of our results, we opted for presenting the type of effects obtained from our path analysis (i.e. positive, negative, insignificant) among our variables in Table 3, while the estimates for all relationships in the measurement models (the path coefficients using regression analysis) can be found in Appendix 1.

Table 3. Total (cumulative) effects of the chosen environmental variables on the level of Human and Economic Wellbeing in Romania, in 2006-2016 period

| Dependent variable | Independent variable | Effects |
|----------------------------|--------------------------|-------------------|
| | | Romania 2006-2016 |
| Human_Wellbeing (Eq. 1) | Ec_Wellbeing | positive |
| | Water_Exploitation_Index | insignificant |
| | Greenhouse_gases | positive |
| | Share_forest_area | positive |
| | Area_afforest_schemes | positive |
| Ec_Wellbeing (Eq. 2) | Water_Exploitation_Index | insignificant |
| | Greenhouse_gases | positive |
| | Share_forest_area | positive |
| | Area_afforest_schemes | positive |



| | | |
|-------------------------------------|--------------------------|-----------------|
| Water_Exploitation_Index (Eq. 3) | Share_forest_area | insignificant |
| | Area_afforest_schemes | negative |
| Greenhouse_gases (Eq. 4) | Water_Exploitation_Index | insignificant |
| | Share_forest_area | positive |
| | Area_afforest_schemes | positive |

Source: SSI, Eurostat and NIS databases, computed in StataMP 13.0

In this model, Human_Wellbeing (Eq. 1) depends on the following partial regression coefficients: Ec_Wellbeing, Greenhouse_gases, Share_forest_area and Area_afforest_schemes. Ec_Wellbeing (Eq. 2) is influenced by Greenhouse_gases, Share_forest_area and Area_afforest_schemes. Water_Exploitation_Index (Eq. 3) depends on Area_afforest_schemes; while Greenhouse_gases (Eq. 4) is influenced by Share_forest_area and Area_afforest_schemes.

In this way, our results show that human wellbeing is positively influenced by the economic wellbeing, by the national performance regarding greenhouse gases in terms of their sustainable coordination, by the share of forest area and, also, by the area of the land submitted to afforestation schemes. In other words, the improvements to the levels of mentioned indicators positively contributed to enhancing human wellbeing in Romania along the 2006-2016 period. Consequently, more attention to the forests issues like the share area and the schemes of afforestation meant more economic wellbeing and, also, more sustainable amount of emitted CO₂. Also, more land included in an afforestation scheme translated into a higher performance of water exploitation. These findings seem to be relevant for observing the link between forests and water and, also, their effects on human wellbeing in Romania. Following this objective, the next step was to analyze their direct and indirect effects.

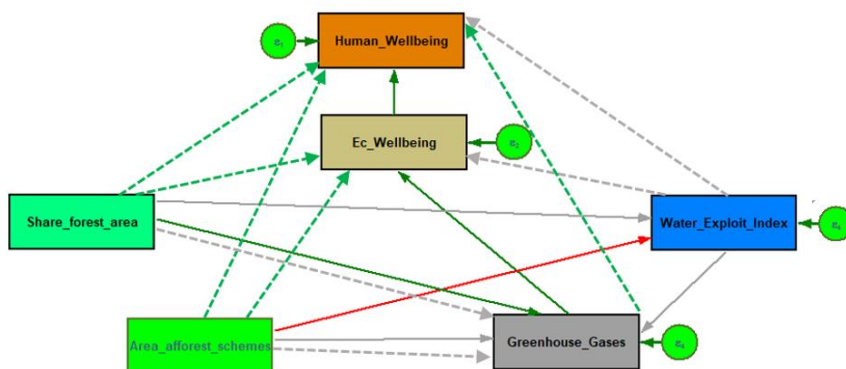
Moving on, we examined the **direct and indirect relationships** among the selected variables, paying attention especially on the human wellbeing, as an outcome of the hypothesized model, but also to the indicators related to forests and water. In this way, path analysis helped us disentangle the interrelationships observed in the analysis of the total effects of the exogenous and intervening endogenous variables on wellbeing indicators, as presented in Figure 4 and Tables 4.1. and 4.2. (detailed in Appendix 2).

Main findings of the analysis are the following.

Human_Wellbeing is (1) directly affected by Ec_Wellbeing and (2) indirectly affected by (2.1) Greenhouse_gases and Share_forest_area via the Ec_Wellbeing mediator and by (2.2) Area_afforest_schemes through the Water_Exploit_Index as mediator.

Ec_Wellbeing is (1) directly affected by Greenhouse_gases and (2) indirectly affected by (2.1) Share_forest_area via the Greenhouse_gases mediator and by (2.2) Area_afforest_schemes through the Water_Exploit_Index as mediator.

Figure 4. Path diagram – Direct and indirect effects on the level of Human Wellbeing in Romania, in 2006-2016



Legend: green lines – positive effects, red lines – negative effects, gray lines – insignificant effects

Source: SSI, Eurostat and NIS databases, computed in StataMP 13.0

From our analysis, it may be observed that *Water_Exploit_Index* and its evolution register significant links to other three variables: *Greenhouse_gases*, *Ec_Wellbeing* and *Area_afforest_schemes*. In this regard, the fact that the schemes for afforestation significantly and positively contribute to the reducing of water scarcity and, thus, to the improvement of the water indicator performance may show the important role that forests and investments in terms of their extension are able to play in relation to water. Although there are studies observing the effect of reducing water availability in the situations of re- and afforestation (Liu *et al.*, 2016; Andréassian, 2004; Rind *et al.*, 1990; Scott and Lesch, 1997; McGuinness and Harrold, 1971), as Ellison *et al.* (2017, p. 51) mentioned, in the correct spatial setting, forest restoration can positively impact water also in terms of availability. In this context, our result showing a positive link between water availability and afforestation schemes is consistent to other studies confirming that functions inherent to forests offer solutions to water availability (Ellison *et al.*, 2012; Hesslerová *et al.*, 2013; Syktus and McAlpine, 2016; Ellison *et al.*, 2017). This is strengthened by the assumption of Sun and Segura (2013, p. 120), stating that “fresh water scarcity is becoming more problematic across the planet due to increasing (...) land use change such as deforestation” in the context in which “a great deal of land conversion has come at the expense of forests” (Filoso *et al.*, 2017, p. 8).

Referring to the Romanian situation, as Bran *et al.* (2019, p. 111) pointed, national forests have also registered a steady decline over time (from 50% during the Middle Ages to about 37% in the modern era) due to deforestation for expanding the agricultural area and to the need for fuel and building materials. More, it may be also observed that the three indicators regarding forests and water in Romania seem to significantly contribute to improving the level of economic wellbeing that, as the

sustainable development theory shows, is not an end in itself, but a mean for obtaining human wellbeing (van de Kerk and Manuel, 2017; Ulman *et al.*, 2020).

Table 4.1. The direct effects of different environmental variables related to water and forests on Human and Economic Wellbeing

| Predictor | Predictand | Direct effects Romania 2006-2016 |
|--------------------------|--------------------------|-------------------------------------|
| Ec_Wellbeing | Human_Wellbeing | positive |
| Greenhouse_gases | Ec_Wellbeing | positive |
| Share_forest_area | Water_Exploitation_Index | insignificant |
| Area_afforest_schemes | | negative |
| Water_Exploitation_Index | Greenhouse_gases | insignificant |
| Share_forest_area | | positive |
| Area_afforest_schemes | | insignificant |

Source: SSI, Eurostat and NIS databases, computed in StataMP 13.0

Table 4.2. The indirect effects of different environmental variables related to water and forests on Human and Economic Wellbeing

| Predictor | Mediator | Predictand | Indirect effects Romania 2006-2016 |
|-----------------------|---------------------|------------------|--|
| Water_Exploit_Index | Ec_Wellbeing | Human_Wellbeing | insignificant |
| Greenhouse_gases | | | positive |
| Share_forest_area | | | positive |
| Area_afforest_schemes | Water_Exploit_Index | | positive |
| Water_Exploit_Index | Greenhouse_gases | Ec_Wellbeing | insignificant |
| Share_forest_area | | | positive |
| Area_afforest_schemes | Water_Exploit_Index | | positive |
| Share_forest_area | Water_Exploit_Index | Greenhouse_gases | insignificant |
| Area_afforest_schemes | | | insignificant |

Source: SSI, Eurostat and NIS databases, computed in StataMP 13.0

This analysis and the obtained results may constitute a link between the theoretical background presented in the first part of the paper and the three case studies described in the above section. This part aimed at observing the general link between forests and water, as essential environmental resources, in the Romanian context and, then, their role in the process of development related to economic and social wellbeing.

3.3. Romanian local initiatives of improving water services through payments for actions related to trees

With the main goal of observing the foundation for the development of specific national payments for ecosystem services mechanism in Romania, as part of the water and forest management, there were also investigated some local initiatives of improving water services through payments for actions related to trees, focusing on their characteristics and structure.

Case Study 1 - Ecological restoration of the land from the CARASUHAT agricultural polder, belonging to the public domain of Mahmudia village from Danube Delta

The Local Council of Mahmudia, nearby the World Wildlife Fund (WWF)⁵ Romania and The Administration of Danube Delta Biosphere Reservation implemented the project entitled “Ecological rehabilitation of the lands belonging to public domain of Mahmudia local administration in CARASUHAT agricultural area from Danube Delta”, or shortly, “RECO-Mahmudia”, funded through European Regional Development Fund (ERDF) and Cohesion Fund (CF) Operational Programme for Romania for the period 2007-2013, entitled “Operational Programme Environment” (SOP ENV). Its main objective was to reconnect 924 ha from this area to the natural circle of the Danube, Sf. Gheorghe arm, through restoration of the complex of ponds, lakes and channels that offered, before being drained and dusted, food, shelter and breeding ground for many of the plant species, birds and fish that are threatened with extinction. One way of doing this was through planting trees (native delta species - white poplar, willow and ash) on 10 ha. The total value of the project was equal to 12.711.624 lei, approx. 2.820.000 euro. The payments were regular, being elaborated 16 reimbursement requests. The implementation period was of 42 months, from 1 March, 2012, to 30 August, 2015. The benefits of the project were concretized in the rehabilitation of 18 types of habitation representing important feeding and nesting areas for many species of community interest. Beneficiaries of services provided by the case study were: local communities (1); households (1300); firms (50 - especially pensions); farmers (4). The restoration of natural processes contributed to the long-term conservation of biodiversity and for the regeneration of the natural resources of the delta zone. Also, the project proposed solutions to the ecological and socio-economic major problems of Danube Delta, caused especially by the transformation of 35% of the delta territory that, in time, produced loss of biodiversity and a decrease in natural resources that can be used by the local community. Information regarding this project may be found on the page of WWF⁶, as a partner within the project, on a series of press releases⁷.

⁵ WWF data, available online: <https://www.worldwildlife.org/> (accessed on January 2020).

⁶ <https://www.worldwildlife.org/>.

⁷ <http://www.proiecteue.ro/proiecte.php?proiect=5286;>



Case studies 2 and 3 - Iezer and Ciocanesti fishponds – pilot

Within the Danube PES Project, called *Promoting Payments for Ecosystem Services and Sustainable Finance Mechanisms in the Danube Basin (Danube PES)*, WWF Romania has chosen pilot areas from Calarasi county (Iezer – 530 ha and Ciocanesti – 233 ha) for demonstrating the way of efficiently utilizing the public funds for stimulating the economic growth while environment conservation actions are also included. Their main objectives were: testing the integration of environmental friendly measures in aquaculture management; the evaluation of this aquatic environment scheme from the point of view of the transition to a responsible aquaculture; improving water quality, affected by the intensive agricultural practices on the land around the farms; the access of the ichthyophagous birds for feeding, by draining a smaller number of fish ponds, by reducing the area covered by nets and by slowing the spread of the reed. Among the actions within the projects, the plantation of trees was also present. Beneficiaries of services provided by the case study are the local communities and tourists that come to visit the farms. Information regarding these PES schemes may be found on the WWF web page⁸.

In detail, referring to the Ciocanesti case study, the natural values of the farm from here have been officially recognized through its inclusion in the site Natura 2000 “Ciocănești Dunăre” (ROSPA0021). According to the data found on the web page of WWF (<http://www.wwf.ro>), the annual value of the environment services was related to: fish production (3,202 €/ha); carbon sequestration - reed, vegetation, trees (5856 euro) and trees (3550 euro). Since 2010, WWF – Romania is present in the area with a conservation project that aims to maintain the benefits offered by the wetland such as biodiversity, climate regulation, water quality, recreation and, also, fish production. The financial support came from Operational Program Fishery, Axis 2 – Aquaculture, fishery in inland waters, processing and marketing of products from fishery and aquaculture, Measure 2.1 – Aquaculture, Action 2.1.4 – Measures for aquatic environment, Operation 2.1.4.1 – Environmental Protection; other project is funded by the Danube Competence Center under the Biodiversity and Tourism call for proposals, and, also, from the land owner’s investments, that till then has improved its business, combining fishery, protecting the environment and practicing ecotourism.

Iezer pilot site, also located on the Romanian Lower Danube, within the former Danube floodplain in Calarasi County, is a relatively similar case. Here, much of the former mosaics of wetlands and natural channels, reed beds and patches of natural floodplain forest have been lost, but some remain, especially around the highly productive fish ponds. These ponds contribute considerably to the local economy, but, in the same time, to biodiversity conservation. According to WWF,

<http://greenly.ro/arrii-protejata/reconstructia-ecologica-din-incinta-carasuhat-mahmudia>;
<https://www.romaniapozitiva.ro/administratie/incep-lucrarile-de-reconstructie-ecologica-la-mahmudia/>;
https://old.wwf.ro/ce_facem/dunrea_i_delta_dunrii/proiecte_finalizate/mahmudia__prima_zon_umed_din_delta_dunrii_reconstruit_de_o_comunitate/ etc.

⁸ <https://www.worldwildlife.org/>.



ecosystem services and their financial value from this area were in terms of: fish production (2750 euro/ha); biodiversity maintenance (hunting penalties) (50750 euro); carbon sequestration (reed, soil vegetation and trees) (6050 euro/year); biomass production (reed) (67150 Euro/year).

A successful demonstration of extensive fish ponds management in these pilots might have application for the many other fish ponds along the Lower Danube, in Romania as well as Bulgaria, Moldova and Ukraine, many of which are valuable wetland areas whose benefits extend far beyond fish production.

All the three case studies were presented as relevant examples for the Romanian local initiatives regarding ecosystem services and PES that explicitly target improving water services through actions related to trees in a COST project entitled “Payments for Ecosystem Services (Forest for water)” - PESFOR-W COST Action (CA15206) (2016-2020), covering 40 countries. Its main aim is “to synthesize knowledge, provide guidance and encourage collaborative research to improve Europe’s capacity to use Payments for Ecosystem Services (PES) to achieve Water Framework Directive (WFD) targets & other policy objectives through incentives for planting woodlands to reduce agricultural diffuse pollution to watercourses”⁹. Table 5 contains synthesized essential reference information regarding each case study.

Table 5. Romanian case studies on PES

| IDENTIFICATION | SPECIFICATIONS | | |
|--|--|--|---|
| | Case 1 <i>Ecological restoration of the land from the CARASUHAȚ agricultural polder, belonging to the public domain of Mahmudia village from Danube Delta</i> | Case 2 <i>Iezer fishpond - pilot, Promoting Payments for Ecosystem Services and Sustainable Finance Mechanisms in the Danube Basin (Danube PES)</i> | Case 3 <i>Ciocanesti fishponds - pilot, Promoting Payments for Ecosystem Services and Sustainable Finance Mechanisms in the Danube Basin (Danube PES)</i> |
| Name of catchment/s the case study drains to | Danube (DONAU) watershed | Danube (DONAU) watershed | Danube (DONAU) watershed |
| Programme/scheme | European Regional Development Fund (ERDF) and Cohesion Fund (CF) Operational programme for Romania for the period 2007-2013, entitled "Operational Programme Environment" (SOP ENV). | Promoting Payments for Ecosystem Services and Sustainable Finance Mechanisms in the Danube Basin (Danube PES) - The Danube PES Project | Promoting Payments for Ecosystem Services and Sustainable Finance Mechanisms in the Danube Basin (Danube PES) - The Danube PES Project, WWF Danube-Carpathian Programme |
| Organisations responsible for the programme/scheme | Ministry of Environment and Forests - MANAGING AUTHORITY | WWF (Danube-Carpathian Programme) | WWF (Danube-Carpathian Programme) |
| Organisation responsible for the case study | Local Council of Mahmudia; WWF Romania; The Administration of Danube Delta Biosphere Reservation | SC Piscicola SA Călărași (Iezer); WWF Romania | S.C. Ciocănești-Piscicola S.R.L.; WWF Romania |
| NUTS Code of broad region | RO2-MACROREGIUNEA DOI; RO41-Sud-Vest Oltenia; RO225-Tulcea | RO2-MACROREGIUNEA DOI; RO41-Sud-Vest Oltenia; RO312-Călărași | RO2-MACROREGIUNEA DOI; RO41-Sud-Vest Oltenia; RO312-Călărași |
| Name of municipality where the case study is located | Mahmudia commune, Tulcea county, Romania | Iezer fishponds, Călărași county | Ciocănești commune, Călărași county |
| Establishment year | March, 2012 | January, 2010 | January, 2010 |
| Duration (time horizon) | short term (< 5 years) | short term (< 5 years) | short term (< 5 years) |

Source: authors’ representation based on the COST questionnaire

⁹ More, details regarding these case studies may be found on the following link: <https://public.tableau.com/profile/rik.de.vreese#!/vizhome/SpatialRepository-PaymentsforEcosystemServicesForestsforWaterCOSTactionCA15206PESFOR-W/Spatialrepository>.



Payments characteristics and structure

The description of our case studies was made according to the detailed presentation of each key design aspect from a study called “Forest and Water: Valuation and Payments for Forest Ecosystem Service” (UN, 2018).

All the three cases received EU funding. In the first case, the payment source was a public one. In the last two case studies, the payment source was a combined one, public and private. In all the cases, the duration (time horizon) was a short one (< 5 years), while the period of establishment was different. Closely analyzing these three, in the words of Leonardi (2015), “PES-like” case studies, acting in a rather complex institutional framework, we consider that all of them were voluntary without negotiation (fixed payments), but, in the case of schemes from Calarasi county, the negotiation was more present, but within a certain regulation framework.

All the three case studies may be considered to have a high extent of additionality as additional effects of the payments regarding the ecosystem service provisions were registered. Referring to the degree of directness, all the three cases may be characterized as less direct, although the last two cases may also improve (at least in time) its directness extent. In terms of degree of commoditization, in the first case, we met the payments for more environmentally-friendly practices, while, in the situation of the cases from Ciocanesti, we consider that the financial resources received by the providers of environmental services may be catalogued more as incentives that do not fully cover the opportunity costs of more ecofriendly actions and, also, markets as consolidated payment flows among services, beneficiaries and providers.

Conclusions

The synergies between forests and water management may positively contribute to the optimizing of their provided ecosystem services. Payments for ecosystem services schemes, in general, and payments for water services schemes, in particular, provide a mechanism for enhancing the services provided by forests.

PES may represent an efficient mechanism, especially in the absence of an enabling legislative framework or functioning local governance, but it is a concept not very common in the Romanian political or legal discourse and, also, not frequently put into practice in Romania. More, there is no explicit mention and no other terms/words/concepts used for defining Payments for Forest Water Services (W-PES) in the Romanian legislation, in the strategic documents or in the political discourse.

Our findings emphasized the important role that forests and investments in terms of their extension are able to play in relation to water. Moreover, in this paper, it was observed that human wellbeing is positively influenced by the economic wellbeing, by the national performance regarding greenhouse gases in terms of their sustainable coordination, by the share of forest area and, also, by the area of the land



submitted to afforestation schemes, positively contributing to enhancing human wellbeing in Romania along the 2006-2016 period even in the conjuncture in which much progress was not registered in the levels of analyzed environmental indicators.

We also identified and generally described 3 local initiatives following the less strict definition of PES in order to understand the level of development of this kind of payments in the Romanian context. These represent shy attempts of putting into practice the PES and even less explicit orientation for improving water services through payments for actions related to trees, but they may represent starting points and have application for other cases, and, thus, promote the benefits of forestry payments for supporting water quality and supply and the necessary steps for obtaining them.

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Appendix

Appendix 1 . Standardized path coefficients

| Predictor | Predictand | Estimate | Sig |
|-----------------------|---------------------|----------|--------------|
| Water_Exploit_Index | Ec_Wellbeing | -0.326 | 0.453 |
| Greenhouse_gases | Ec_Wellbeing | 14.489 | 0.000 |
| Share_forest_area | Ec_Wellbeing | 0.184 | 0.001 |
| Area_afforest_schemes | Ec_Wellbeing | 1.803 | 0.019 |
| Ec_Wellbeing | Human_Wellbeing | 3.706 | 0.000 |
| Water_Exploit_Index | Human_Wellbeing | -0.121 | 0.453 |
| Greenhouse_gases | Human_Wellbeing | 5.370 | 0.000 |
| Share_forest_area | Human_Wellbeing | 0.068 | 0.015 |
| Area_afforest_schemes | Human_Wellbeing | 0.668 | 0.049 |
| Share_forest_area | Water_Exploit_Index | 0.259 | 0.191 |
| Area_afforest_schemes | Water_Exploit_Index | -21.739 | 0.000 |
| Water_Exploit_Index | Greenhouse_gases | -0.225 | 0.453 |
| Share_forest_area | Greenhouse_gases | 0.127 | 0.000 |
| Area_afforest_schemes | Greenhouse_gases | 1.245 | 0.003 |

Source: SSI, Eurostat and NIS databases, computed in StataMP 13.0

Appendix 2. Direct and indirect effects among variables

| DIRECT EFFECTS | | | | |
|-----------------------|---------------------|---------------------|----------|--------------|
| Predictor | Mediator | Predictand | Estimate | Sig |
| Ec_Wellbeing | - | Human_Wellbeing | 3.706 | 0.000 |
| Greenhouse_gases | | Ec_Wellbeing | 14.489 | 0.000 |
| Share_forest_area | | Water_Exploit_Index | 2.585 | 0.191 |
| Area_afforest_schemes | | Water_Exploit_Index | -21.739 | 0.000 |
| Water_Exploit_Index | - | Greenhouse_gases | 0.000 | 0.453 |
| Share_forest_area | - | Greenhouse_gases | 0.022 | 0.000 |
| Area_afforest_schemes | - | Greenhouse_gases | 0.101 | 0.328 |
| INDIRECT EFFECTS | | | | |
| Water_Exploit_Index | Ec_Wellbeing | Human_Wellbeing | -0.121 | 0.453 |
| Greenhouse_gases | Ec_Wellbeing | Human_Wellbeing | 5.370 | 0.000 |
| Share_forest_area | Ec_Wellbeing | Human_Wellbeing | 0.068 | 0.015 |
| Area_afforest_schemes | Water_Exploit_Index | Human_Wellbeing | 0.668 | 0.049 |
| Water_Exploit_Index | Greenhouse_gases | Ec_Wellbeing | -0.326 | 0.453 |
| Share_forest_area | Greenhouse_gases | Ec_Wellbeing | 0.184 | 0.001 |
| Area_afforest_schemes | Water_Exploit_Index | Ec_Wellbeing | 1.803 | 0.019 |
| Share_forest_area | Water_Exploit_Index | Greenhouse_gases | 0.006 | 0.515 |
| Area_afforest_schemes | Water_Exploit_Index | Greenhouse_gases | 0.489 | 0.457 |

Source: SSI, Eurostat and NIS databases, computed in StataMP 13.0



EU CITIZENSHIP LAW: INTEGRATION OF IMMIGRANTS

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Abstract

This article examines the concept of European citizenship, formally introduced by the Treaty of Maastricht. Emphasis is placed on the fact that currently, the EU has no common citizenship policy and citizenship issues are completely fragmented between the national legal systems of the Member States. This study draws attention to the challenges and opportunities posed by this situation for the integration of immigrants and raises the question of nationality in the EU and whether EU citizenship should be distinguished from that of Member States? The study focuses on what it means to be “European” in the era of global mobility and freedom of movement and examines the interconnections between national sovereignty, self-determination and EU citizenship.

Keywords: EU citizenship, immigrants, integration, nationality, third-country nationals

Introduction

According to legal science, citizenship is the political and legal relationship between the individual and the state, which has a lasting and sustainable character. In this sense, the citizenship of the European Union (EU) is another feature of it that distinguishes the Union from the classical understanding of an international organization. The legal regime of EU citizenship is one of the most significant achievements of the European integration legal order and is of great importance for the development of the European integration process.

In deciding to establish citizenship of the Union, Member States were driven by the desire to establish a direct political link between the EU and the people, so that they could be more actively involved in social, economic and cultural life at European level. First of all, it should be noted that citizenship of the Union is acquired as a direct legal consequence of the full membership of the national state of the person in the European Union. When a natural person acquires the nationality of a Member State for any reason, they also acquire EU citizenship – automatically, without the need to take any legal action.

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It is interesting to note that at the moment, European citizenship does not carry burdens and obligations, but only rights. In other words, *de lege lata* has no clearly defined obligations arising from European citizenship: for example, there is no compulsory European military or civilian service; there is not even a European tax. In this regard, according to the EU Parliament “Like national citizenship, EU citizenship refers to a relationship between the citizen and the European Union, which is defined by rights, duties and political participation” (European Parliament, 2020).

It is clear that EU citizens are given many, and quite important, rights and opportunities, the legal fact of which is the membership of the respective nation state in the Union. However, in view of the problem at hand, it is important to emphasize that Union citizenship cannot be used to acquire the citizenship of a Member State other than the country of origin of the individual European citizen.

Following the latest events in Europe and the world, EU Member States have paid special attention to the integration of immigrants into the European common society. Recent years have emerged as a serious test for the EU in the context of the citizenship and nationality issues. Given the many common challenges, the need for enhanced cooperation between EU countries in the field of integration policies is becoming increasingly important. In this sense, it is necessary to reform the legal framework with a view to greater resilience, efficiency, harmonization and fairness to future migratory pressures, so that the EU can ensure its citizens the right to move, work and live anywhere in the Union.

1. What makes the European Citizenship specific?

United Europe does not strive for unification, but for the richness of its model by preserving and stimulating diversity and, most importantly, upholding the right to choose of every citizen, of every individual. In itself, upholding national specificity and identity also means upholding European values, because the more national wealth and diversity are preserved and upheld, the more the European principles of democracy and pluralism are preserved (Stoilova, 2011, p. 55). It is this fundamental principle of the European model and of the European spiritual space that reflects the possibility for every citizen of a United Europe to be able to identify themselves through both the “European” and the “national”. It is not a question of imposing one or the other principle, but of the possibility for the two to coexist together so that they can complement and enrich each other.

Following this ambitious goal the Treaty of Maastricht introduced EU citizenship in 1992. It was established as a supranational form of citizenship with attached legal and enforceable rights. In this regard, it should be noted that citizenship of the Union is acquired as a direct legal consequence of the full membership of the national state of the person in the European Union. Initially, the concept of European citizenship was more symbolic than essential, but over the years its role has been further developed through court judgments of the European Court of Justice.



It is important to remark, however, that EU citizenship is acquired as a direct legal consequence of the full membership of the national state of the person in the Union. When individuals acquire the citizenship of a Member State on any grounds, they automatically acquire EU citizenship without the need to take any legal action. There are no legal or political grounds to believe that the acquisition of EU citizenship gives rise to the legal figure of dual citizenship. Combining the citizenship of the nation state with the citizenship of the EU should not be defined as bipatrim, as the EU is not a state. In this sense, the main aspects that need to be emphasized with regard to European citizenship are the fact that EU citizenship confers additional rights and also that it cannot be acquired separately from national citizenship by people who are not citizens of EU Member State or by stateless persons.

However, the formation of the institution of citizenship of the Union does not stop there. As the Treaty on the Functioning of the European Unions' normative achievements stipulate that, "Every person holding the nationality of a Member State shall be a citizen of the Union" (Official Journal, 2012, p. 47 - 390), the Treaty of Amsterdam clarifies the link between European and national citizenship by adding that "Citizenship of the Union shall complement and not replace national citizenship" (Official Journal, 1997, p. 1 - 144). This notion is strengthened by the legal additions of the Treaty of Lisbon, which give the EU citizens the right of citizens' legislative initiative and also underlined the importance of the EU citizenship by referencing the rights and freedoms enshrined in the Charter of the Fundamental Rights of the European Union, which with the Treaty of Lisbon acquired the same legal force as that of the Treaties. At the same time, the Charter further reinforces the idea of EU citizenship. In particular, its preamble states that the EU "puts every individual at the heart of its work by establishing citizenship of the Union and by creating an area of freedom, security and justice".

The wording of the founding treaties gives the impression that their purpose is to build the missing link needed to strengthen the link between all citizens within the EU through the membership of the Member States in the integration communities. The idea behind this connection is to be direct and immediate, without being limited. Such a step towards convergence has not been possible through the classical mechanisms for transforming the norms of international treaties into norms of domestic law in the countries. Furthermore, European integration is created by states, but it is intended for citizens, which means the it serves not relations between states, but relations whose subjects are also citizens. In this context, all future EU action puts the citizens of the Union at the center.

Citizens are not parties to the treaties on the basis of which the integration communities emerged, and later the EU. At the same time, it is the citizens who are the economic catalyst for building the internal market, which is the aim and subject of these treaties. By virtue of the specific principles of application of Community law - the direct effect, the direct applicability and the supremacy of national law - citizens derive directly subjective rights from Community rules. This is proof of the



existence of a legal link between European citizens and the membership of the countries of which they are citizens. The development of integration processes presupposes the constant enrichment of this connection with new elements in order to achieve full and real European citizenship with real dimensions of the rights guaranteed by it. In this sense, it should be emphasized that, for the first time, a text appears in the founding treaties giving citizens of the Union rights.

EU citizenship rights are firmly enshrined in EU primary law and are significantly further developed in secondary law. In particular, the Treaty on the Functioning of the European Union and the Charter of Fundamental Rights contain (without being exhaustive) a number of rights which are linked to this status:

- The right to move and reside freely within the EU;
- The right of citizens to vote and to be elected in European parliamentary and municipal elections;
- The right to diplomatic and consular protection;
- The right to petition the European Parliament;
- The right to lodge a complaint with the European Ombudsman;
- The right to freedom from discrimination on grounds of nationality;
- The right of contact and to receive a reply from any EU institution in one of the official languages of the EU;
- The right of access to documents of the European Parliament, the European Commission and the European Council under certain conditions;
- The right of equal access to EU civil service;
- The right to good administration;
- The right of citizens' initiatives, through which 1 million citizens from at least a quarter of EU Member States can call on the European Commission to present proposals for legal reform in areas where the Commission would not otherwise have the power to do so.

Very often EU citizens exercise several of their rights as EU citizens at the same time. On the other hand, some rights are a natural prerequisite for the exercise of other fundamental rights of an EU citizen - the right to education in another Member State, for example, would be unthinkable without the right to move and reside freely. The same statement also affects a number of social rights of the Union citizen and, of course, the right to vote in another Member State (for local or European Parliament elections). The most obvious is the connection between the general right to free movement with the specific rights (residence, work, etc.).

It can be summarized that in recent years the European Union has taken important steps to implement and strengthen the values it recognizes in both its domestic and international relations. It not only seeks to ensure the rights of its citizens and residents, but also to uphold human rights in the countries with which it cooperates and has economic relations. The European citizen's first right is the right to move, work and live anywhere in the Union.

In the context of European citizenship, four dimensions of the relationship between the individual and society within the EU can be distinguished: the political, social, cultural and economic dimensions. The scope of the political dimension



includes political rights and responsibilities with regard to the political system. The social dimension of citizenship encompasses the relationships between the various elements of society and includes categories such as loyalty and solidarity. The cultural dimension does not cover issues of common cultural heritage in the EU, emphasizing identities and multicultural diversity. The scope of the economic dimension covers labor and consumer relations with an emphasis on employment and vocational training.

In general, the right to free movement of persons in the EU is a subject of special attention in the EU law. It has also been a subject of significant case law for a long period of time. In this regard, it should be noted that the case law of the Court of Justice of the EU contains a number of examples related to the citizenship issues. Significant for the strengthening of the institution of European citizenship are the cases: *Micheletti* (CJEU, 1992), *Frederick Farrugia* (CJEU, 1996, Case T-230/94), *Fatna Mesbah* (CJEU, 1999), *Manjit Kaur* (CJEU, 2001), *Factortame* (CJEU, 1996, C-46/93), *Ruiz Zambrano* (CJEU, 2011), *Janko Rottman* (CJEU, 2010), etc. In its case law, the Court confirms that the precondition for acquiring EU citizenship is the possession of the citizenship of any Member State. In this regard, citizenship of the Union is currently a basic status of the individual, the political subject of the process of European integration, allowing everyone to be treated equally, regardless of their nationality.

The judgment of the Court of Justice of the EU in *Micheletti* case is significant in the context of European citizenship. It emphasizes that, within the Union, States may not deprive persons of the rights deriving from the institution of EU citizenship if the basic precondition for that arises - namely, the possession of the nationality of one of the Member States (CJEU, 1992). The same rule applies in the case of dual citizenship, when a person is a national of an EU Member State and at the same time a national of a third country. Here again, the person who holds rights as a European citizen could not be restricted precisely because, within the EU, everyone should be treated equally, regardless of their nationality.

Another important example from the subsequent case law of the Court of Justice in the context of European citizenship is the judgment of the Court in *Rottman* case. The decision gives Member States the opportunity to regulate freely citizenship laws. However, for the first time, the case law of the European Court of Justice on citizenship issues stipulates that the exercise of a Member State's competence in regulating citizenship matters fall within the scope of the EU law (CJEU, 2010). In this sense, it should be noted that the freedom to regulate citizenship must be exercised with due regard for EU law. As a result, Member States are limited by the principles of the EU law, which means that where a national provision, aimed at regulating citizenship, restricts Union citizens without a legitimate interest and / or in a disproportionate way, that provision must be repealed by the national court.

Of particular interest is the judgment of the Court of Justice of the European Union in the case of *Alokpa*, which states that in cases where third-country nationals



actually exercise parental responsibility in respect of a child with EU citizenship, may reside with them in the host Member State in accordance with the provisions of Article 20 TFEU (CJEU, 2013). In this sense, it can be summarized that if the refusal of residence would deprive the EU citizen of the opportunity to actually exercise the rights deriving from the citizenship, then this restriction should be removed.

In this context, the Court of Justice becomes the final instance to verify that national conditions of citizenship comply with the EU law. In the context of the Rottman case, citizenship is emphasized as the basic status of citizens of the Member States. Such a basic status as Union citizenship is difficult to imagine if this status depends only on the Member States. The judgment in the case is fully in line with the established common case law of the Court of Justice, according to which the exercise of Member States' powers may be limited by the general principles of the EU law, even in areas where Member States are competent to act (e.g. health measures or direct taxes). By including Union citizenship as a status separate from any economic objective, the areas of law that affect that citizenship now fall within the scope of EU law and thus also fall under the control of the Court of Justice.

2. EU citizenship issues and the EU rules relevant to immigrants

Currently, the EU has no common citizenship policy and citizenship issues are completely fragmented between the national legal systems of the Member States. In this regard, this research work will try to clarify the challenges and opportunities posed by this situation for the integration of immigrants and also the question of nationality in the EU and whether EU citizenship should be distinguished from that of Member States.

The dramatic events of the past decade in Syria, Iraq, Libya, Afghanistan and Yemen became a major determinant of the intensity of immigration waves to Europe. In addition, the growing number of young people in underdeveloped economies, the lack of resources in the deep social conflicts in Africa and the Middle East are prompting more and more people living there to seek better living and working conditions. The ever-increasing flow of immigration has led to the entry of nearly 1.5 million illegal immigrants into the territory of developed countries in Europe. The influx of refugees has led to a crisis in the EU, threatening its unity and undermining the achievements of the Schengen agreement.

Modern migration processes and their consequences have become one of the central fields of current EU policy. Perhaps it should be recalled that for centuries Europe itself has been a continent of emigrants, with the inhabitants of European countries colonizing vast areas of the world in search of wealth, freedom and peace. Today, the trend is reversed: in the age of globalization, the old continent has become the ultimate goal of unknown till now in scale and intensity migration processes. At first glance, the classic "Push-and-Pull" model is easily applicable here: on the one hand, factors such as poverty, lack of prospects, overpopulation, wars, repression, etc. motivate residents of underdeveloped or developing countries to emigrate in search of a new life elsewhere; on the other hand, Europe is suffering from an aging



population and a shortage of skilled workers. In this sense, it can be said that migration processes to the Union are an unalterable phenomenon, which to a large extent is already shaping the future of Europe (Timchev, 2019, p. 13 - 27).

In recent years, EU Member States have paid special attention to the integration of immigrants into society. Given the many common challenges, increasing importance is being given to the need for enhanced cooperation between EU countries in the field of integration policies. The way the EU regulates immigration involves a number of legal and policy instruments. During the last few years, the Union's efforts have focused on the implementation of the European Agenda on Migration and have resulted in the implementation of measures focusing on both the internal and external dimension of migration processes and the EU's external borders. The measures taken in practice include: 1) return and readmission of illegal migrants who are not allowed to enter or reside in the EU; 2) combating the smuggling of migrants; 3) protecting the EU's external borders; 4) creating legal ways for those in need of international protection; 5) creating a stable EU asylum policy, based on a balance between solidarity and responsibility; 6) taking action on migration in cooperation with third countries through political and financial means. Although European legislation establishes common standards in the areas listed, the actual implementation of asylum and migration policy is the responsibility of the Member States, which must ensure that their national legislation is in line with both EU law and the international agreements signed. The migration challenges facing the EU over the last few years have highlighted a number of gaps in the Union's asylum, migration and external border control policies. The EU asylum system has come under serious pressure because asylum seekers are not treated equally in different Member States, due to opposing societal attitudes and difficulties in balancing solidarity and responsibility in them. In this sense, there is a need to reform the legal framework with a view to greater sustainability, efficiency, harmonization and equity in the face of future migratory pressures.

The EU currently has a shared competence to develop a common immigration policy. In this sense, the legal framework established by the founding treaties should be recalled. For example, according to Article 67 TFEU, the Union "shall develop a common policy on asylum, immigration and external border control, based on solidarity between Member States and fair to third-country nationals". Here is the place to clarify that the concept of third-country nationals also includes stateless persons. Furthermore, Article 78 TFEU provides for the possibility for the EU to develop a common policy on asylum, subsidiary protection and temporary protection. It emphasizes the role of the European Parliament and the Council as co-legislators in adopting measures for a common European asylum system. It also outlines the temporary measures that can be taken in the event of a sudden influx of third-country nationals in one or more Member States. Article 79 provides for the development of enhanced measures to combat illegal immigration and trafficking in human beings, including the possibility for the Union "to conclude agreements with third countries for the readmission to their countries of origin or provenance of third-



country nationals who do not or who no longer fulfil the conditions for entry, presence or residence in the territory of one of the Member States”. The principle of solidarity and fair distribution of responsibilities, including in financial terms, between Member States when implementing border, asylum and immigration control policies is summarized in Article 80 TFEU.

It should be recalled here that Article 18 of the Charter of Fundamental Rights of the European Union governs the right to asylum and Article 19 the prohibition on return. The validity and legality of EU secondary legislation depends on its compliance with the Charter. In its work, the EU should respect and at the same time require Member States to respect and implement the 1951 Convention relating to the Status of Refugees and its 1967 Protocol (Geneva Convention), as well as other relevant treaties.

Most EU funds related to migration policies are included in the Union’s Multiannual Financial Framework. These include the Asylum, Migration and Integration Fund, which aims to promote the effective management of migration flows and the development of a common Union approach to immigration and asylum, and the Internal Security Fund, which provides support for the management of external migration, borders, as well as the common visa policy and financial support for police cooperation, crime prevention and counteraction, including the smuggling of migrants.

Within the EU, Member States are also taking measures to resettle refugees from third countries directly under the provisions of the EU’s emergency resettlement scheme, focusing on flows from North Africa, the Middle East and the Horn of Africa. However, the number of resettlements remains modest for the last 3 years. Currently, the EU debate on migration is mainly focused on two areas - the first on the EU resettlement framework, which provides safe and legal ways to access Europe for people in need of international protection, and the second on the EU Blue Card, which aims to attract and retain highly skilled workers. Progress on these topics is yet to be reported.

The risk of additional migratory pressures caused by both short-term instability and long-term trends such as demographic and climate change shall not to be overlooked. Finding an adequate regulatory framework at the European level and integrating migrants remains a challenge for the EU. More efforts are also needed to return, readmission and reintegrate those who do not need protection. In this sense, there is a need to establish a sustainable long-term EU system for better management of migration in all its aspects. In order for this to happen in practice, it is necessary to continue the operational and financial support, to supplement and implement the existing legislative framework, as well as to deepen the partnerships with third countries. Legislative reform is emerging as a necessity, as it should be based on more solidarity and willingness to compromise on all sides. The regulation of migration processes is becoming increasingly important in the context of EU citizenship.

Current trends show that Europe will undoubtedly continue to be an attractive place for immigrants and asylum seekers, and managing migration flows will



continue to be high on the EU agenda. This is due to a number of factors, such as growing international and domestic conflicts, climate change and continuing economic disparities between the EU Member States and other countries. That is why the EU must combine different internal and external instruments in the field of migration. As the EU does not have a common citizenship policy, communication between countries on migration processes and the integration of migrants is carried out by harmonizing the principles, powers and procedures in the field of border management and changing the border control system in terms of competencies and logistics. EU countries have the task of guarding the external European border with a focus on combating illegal migration in the context of national and European security.

3. Integration of immigrants and the nationality issue in the EU

The deepening of integration and the introduction of the Institute of European citizenship is closely linked to the very question of the scope of European integration. In the context of nationality in the EU, countries currently retain the freedom to determine the criteria for who their citizens are and who are not. Here it is important to remark that it is nationality that is used as a criterion in determining who qualifies as an EU citizen. In this sense, it should be noted that the link between a community of citizens and the affirmation of political affiliation between the Member States is not at the heart of the concept of citizenship (Bauböck *et al.*, 2019, p.). The EU recognizes the equal legal status of individuals at the supranational level, not by recognizing and supporting the political representation of individuals as citizens, but by granting them specific rights and freedoms. As EU citizenship is acquired as a direct legal consequence of the full membership of the country concerned (only the citizens of the Member States can acquire the rights deriving from it), it is through the acquired additional rights that the idea of participation of all citizens of the Member States materializes not only in the building of the Union, but also in the actual establishment of integration as a pan-European process. The legal framework for citizenship is structured in such a way as to avoid the specificities and restrictions of individual Member States, so that EU citizens can be recognized as having rights under exactly the same conditions as citizens of the host country. To what extent, however, does EU citizenship limit the sovereignty of Member States in the context of their national legislation? EU citizenship status implies a direct link to national citizenship. However, as set out in the founding treaties, it acts as a kind of precautionary measure when there is no possibility to apply existing EU secondary legislation in this area (European Parliament and the Council, 2004).

The main criterion for identifying European citizenship after the Treaty of Maastricht is the nationality of the country of origin. It is apparent from the declaration of nationality annexed to the Treaty of Maastricht that whether a person is a national of a Member State is determined by the national law of the Member State concerned (Official Journal, 1992). In addition, the case law of the Court of



Justice confirms the established practice of harmonizing European legislation with national law and, in the context of the issue of citizenship, emphasizes the need for each Member State to comply with the EU law. In this sense, it is precisely the harmonization of national legislation with that of the EU that needs to be done very carefully, given that the acquisition of citizenship opens the way to EU citizenship and the right to free movement.

Third-country nationals, who represent 5% of the total EU population, are excluded from the scope of EU citizenship. In this context, the EU is aiming at establishing a common and at the same time effective migration policy at European level. That is why measures have been taken to outline a practical framework for managing migration flows. There are categories of asylum seekers, highly skilled workers, students and researchers, seasonal workers and people who migrate to reunite with their families. A special regime has been introduced for third-country nationals staying in an EU country for a long time in an attempt to approximate their rights with those of EU citizens. The integration of legally residing third-country nationals into the territory of the Member States is possible, given that the EU can encourage such actions. However, European legislation does not provide for the harmonization of Member States' legal provisions and legislation.

For example, in 2009 the Council of the European Union adopted Directive 2009/50/EC (Council of the European Union, 2009) with regard to the conditions of entry and residence of third-country nationals for the purposes of highly qualified employment. The aim of the so-called Blue Card is to attract highly qualified immigrants, making their legal status fully transferable within the EU. This is a way of expressing the EU's readiness to attract more skilled immigrant workers and to reduce the number of undocumented immigrants (Ilieva, 2018, p. 258 - 276). In addition, in this way, the tensions that Europe's aging population creates for Member States' pension systems may be reduced due to the influx of immigrants moving to areas where labor is scarce.

Immigrant integration and the issue of nationality in the EU face another major challenge. The process of withdrawal of the United Kingdom from the European Union, known as Brexit, shows that regional integration can be reversed and that supranational (civil) rights can be terminated. After leaving the EU, the citizens of the United Kingdom practically will lose their status as European citizens, as well as the rights deriving from European citizenship itself. Conversely, nationals of other Member States residing in the United Kingdom, in practice, will acquire the status of aliens to whom United Kingdom immigration law will be fully applicable (Stoilova, 2019, p. 36 - 44). There is a real possibility that some Member States will introduce more favorable conditions for migration issues. Similar examples are Cyprus and Greece. Furthermore, some additional mobility arrangements can be proposed between the EU and the UK and can be agreed and accepted as part of the negotiations on their future relationship. At the beginning of 2020, new immigration rules have been proposed in the UK, which will apply after 1 January 2021.

Regardless of how it will be implemented in practice, Brexit will bring about changes in the territorial scope of EU primary law, including on citizenship issues.



Until the withdrawal decision of the United Kingdom, the European project assumed that the only way for a European citizen to lose European citizenship was by losing the citizenship of a Member State. Brexit proves that an automatic loss *ex lege* due to leaving a Member State is also a possible option. Similar to the clause for automatic acquisition with the accession of a country to the EU (Article 49 TFEU), the clause for voluntary departure (Article 50) adds grounds for loss of Union citizenship.

The interaction between nationality and EU citizenship within the established legal framework in the EU is direct and decisive for the mobility of nationals of the Member States and those of third countries. At present, matters of nationality are part of the exclusive competence of the Member States, which determine the conditions for acquiring and losing citizenship, in strict compliance with the EU law. In this sense, a change in the national legislation on citizenship in one of the Member States cannot be ignored, as it has a direct impact and leads to changes in the others. With the acquisition of citizenship of a Member State, individuals acquire the right to intra-European mobility, which in itself is directly linked to citizenship in the other Member States. It is the link between intra-Union mobility and nationality that subsequently triggers an informal process of harmonizing the conditions for acquiring and losing citizenship in the various Member States.

In the coming decades, the proportion of people in different European countries who are not nationals across Europe will increase as a result of mobility between countries, as well as the influx of immigrants from abroad. The promotion of the right to diversity by minority groups, both indigenous and non-indigenous, is now an established practice in European social and political life. This means that the very concept of citizenship is changing towards a broader definition, within which legal and social rights and privileges continue to be a key element, but the importance of culturally agreed and culturally influenced perceptions of citizenship.

Conclusions

In conclusion, it should be noted that the EU has no common citizenship policy and citizenship issues are completely fragmented between the national legal systems of the Member States. European citizenship is becoming increasingly important in the context of the issue of nationality in the EU. Whether EU citizenship should be different from that of the Member States and what it means to be ‘European’ in an era of global mobility and freedom of movement are questions that have yet to be discussed at European level.

European citizenship distinguishes within the Union between “European” citizens and “non-European” citizens, who do not have this specific status and therefore do not have access to all the rights included in it. This distinction is partially bridged in the Treaty of Maastricht, which opens up some rights to all other persons legally residing in the territory of the Union. The essence of the distinction, however, remains.



Despite the demonstrated direct link between national and European citizenship, a clear distinction is made between them: EU citizenship provides and guarantees new rights that national citizenship cannot provide and guarantee. In this sense, European citizenship, although functionally subordinate to the national, puts the “European citizen” in a different position from the national. In general, the content and implementation of the right to free movement of persons in the EU are the subject of special attention and extensive regulation in the “secondary” EC law. They are also the subject of considerable case law over a long period.

Successful management and regulation of migration processes is an important tool for development in the globalizing world economy. This fact raises the issue of migration and integration of immigrants at a key moment at national, regional and global levels. We are witnessing a global redistribution of labor, which is an irreversible process and should be managed wisely, in the interests of countries of origin and destination, as well as migrants themselves. Conversely, inefficient management of migration processes can lead to the growth of the informal economy, to the build-up of tensions in host societies, to the humiliation and exploitation of illegal immigrants.

However, the practical importance of the institution of European citizenship and, in particular, of the extremely wide and daily application of some of its constituent rights, in relation to a very large number of individuals, cannot be underestimated. In fact, it can be assumed that this is the only institution of the EU law that simultaneously engages all citizens of all Member States, in other words, the entire population of the EU.

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THE IMPACT OF CROSS-BORDER COOPERATION BETWEEN THE REPUBLIC OF MOLDOVA AND ROMANIA ON SOCIO-ECONOMIC DEVELOPMENT

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Abstract

Given the priorities of the economic and social development of the Republic of Moldova in the context of European integration and transatlantic cooperation, the cooperation of the Republic of Moldova within the cross-border programs has priority. The European Union supports cooperation with border countries. Considering the fact, that between Romania and the Republic of Moldova there is a joint Operational Program Romania - Republic of Moldova, and in the period 2014-2020, it financed the operational program which was, addressed to the areas on the border between Romania and the Republic of Moldova and which has an impact on reaching the general neighborhood objective. In this article, we intend to retrospect this evolution and to show the strong and weak parts of this cooperation with priorities for further development.

Keywords: economic development, cross-border program, European integration, neighborhood objective

Introduction

The economic and social development in the context of European integration is a priority, opportunity and a hope of the Republic of Moldova. The European Union, through good neighborly policies and programs, supports cooperation with border countries. A special support is also on the border with the Republic of Moldova and Ukraine, which for Romania is a special relationship, considering the common historical past, culture, spiritual nation. At the first stage, in the period

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2007-2014 it was developed and implemented through the Romania-Ukraine-Republic of Moldova Operational Program¹. In the second stage, the period 2014-2020 at the eastern border of Romania or promoted separate programs Romania - Republic of Moldova and Operational Program Romania - Ukraine, which currently have a great impact on achieving the general neighborhood objective. In this article, we intend to take a look back at this development and show the strengths and weaknesses of this cooperation and the priorities for further development².

The relations between Romania and the Republic of Moldova in the last thirty years have had an explosive evolution in their development both culturally, spiritually, educationally, and economically and socially. However, the picture of these developments, which could and should have been different today, primarily for the Republic of Moldova, appears differently.

Although there have been some contradictions in bilateral relations between Romania and the Republic of Moldova, economic relations have shown that Romania is the main economic partner of the Republic of Moldova, for many years it is the first trading partner of the Republic of Moldova. In addition to economic relations, many cooperation agreements are signed between Romania and the Republic of Moldova in various fields of activity, education, culture, science, defense, etc.

1. The main macroeconomic indicators

The economy of the Republic of Moldova is a small economy in the region, with some performances on regional and international markets, with a high dependence on remittances. In the last decade the economy of the Republic of Moldova has been influenced by various factors related to sanctions from the Russian Federation, restrictions on imports of wines and some agricultural products, the crisis in Ukraine, some restrictions from the European Union, banking problems, instability which also influenced the decrease in remittances of Moldovan citizens working abroad.

Especially the negative results or reflected on the economy in 2015. The gross domestic product in 2015 amounted to 6974510 thousand. Euro or 121.9 mild. lei, decreased compared to 2014 by 0.5% (in comparable prices). The most significant influence on GDP decline was gross value added (GVA). In 2019, economic growth was 3.6% in real terms. The gross value added created in the "Construction" activity had the greatest influence on economic growth, ensuring 35% of GDP growth, after which "Wholesale and retail trade retail, transport and storage, hotels and restaurants"- 34%; "Information and communications" - 12%, "Industry" - 11% growth.

¹ Operational program Romania-Ukraine-Republic of Moldova, 2007-2014.

² Agreement between the Government of Romania and the Government of the Republic of Moldova on the general framework and conditions for development cooperation in 28.08.2013.

Table 1. Evolution of the Main macroeconomic indicators of the Republic of Moldova

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|--|------|-------|-------|-------|------|------|-------|------|-------|
| GDP, current prices, millions Euros | | | | | | | | | |
| | 5261 | 6046 | 6777 | 7147 | 7164 | 6974 | 7292 | 8588 | 9701 |
| Physical volume index of GDP, previous year = 100,% | | | | | | | | | |
| | - | 105.8 | 99.4 | 109 | 105 | 99.7 | 104.4 | 105 | 104.3 |
| GDP per capita, current prices, Euro | | | | | | | | | |
| | 1477 | 1698 | 1904 | 2008 | 2014 | 1962 | 2053 | 2420 | 2736 |
| Average annual exchange rate, lei / Euro | | | | | | | | | |
| | 16.4 | 16.33 | 15.56 | 16.72 | 18.6 | 20.9 | 22.05 | 20.8 | 19.84 |

Source: National Bureau of Statistics of the Republic of Moldova

From the table above we see the increase of the physical volume index of GDP in 2011 by 5.8 percent compared to 2010, in 2013 by 9 percent, in the last three years a uniform increase of 4.4 in 2016, 5 percent in 2017, and respectively of 4.3 in 2018. GDP per capita in the period 2010 - 2018 increased from 1477 euros to 2736 euros in 2018. The average annual exchange rate evolved from 16.4 lei / euro to 19,844 lei / euro.

Table 2. Activity, employment and unemployment rates in the Republic of Moldova in the period 2000-2018

| | 2000 | 2003 | 2006 | 2009 | 2012 | 2015 | 2016 | 2017 | 2018 |
|--------------------------|------|------|------|------|------|------|------|------|------|
| Activity rate | | | | | | | | | |
| Total | 59.9 | 51.6 | 46.3 | 42.8 | 40.7 | 42.4 | 42.6 | 42.2 | 43.3 |
| Urban | 57.7 | 54.8 | 49.7 | 47.4 | 47 | 44.9 | 45 | 44.5 | 42.8 |
| Rural | 61.5 | 49.3 | 43.7 | 39.3 | 36 | 40.4 | 40.8 | 40.4 | 43.6 |
| Occupancy rate | | | | | | | | | |
| Total | 54.8 | 47.5 | 42.9 | 40 | 38.4 | 40.3 | 40.8 | 40.5 | 42 |
| Urban | 48.6 | 48.1 | 45.2 | 43.6 | 43.6 | 42 | 42.3 | 41.9 | 40.9 |
| Rural | 59.4 | 47.1 | 41.2 | 37.4 | 34.6 | 38.9 | 39.7 | 39.3 | 42.8 |
| Unemployment rate | | | | | | | | | |
| Total | 8.5 | 7.9 | 7.4 | 6.4 | 5.6 | 4.9 | 4.2 | 4.1 | 3 |
| Urban | 15.7 | 12.2 | 9.2 | 8 | 7.3 | 6.4 | 6 | 5.7 | 4.5 |
| Rural | 3.4 | 4.5 | 5.8 | 5 | 3.9 | 3.5 | 2.6 | 2.7 | 1.8 |

Source: National Bureau of Statistics of the Republic of Moldova

As we can see from Table 2, the activity rate is decreasing from 59.9% in 2000 to 43.3% in 2018, compared to the urban environment which is 57.7% in 2000, and 61, 5% in rural areas. Gradually, however, in 2018 we reach close values. In total we have an activity rate of 43.3%, in urban areas 42.8%, in rural areas 43.6%. The employment rate is 54.8% in 2000, decreasing in 2018, reaching 42%, in urban areas



- 40.9%, in rural areas 42.8%. Regarding the unemployment rate, we have a decreasing evolution, from 8.5 percent in total, in urban areas 15.7 percent, in rural areas - 3.4 percent. In 2018 we have the situation of decreasing up to 3 percent of the unemployment rate, in urban areas being 4.5 percent and in rural areas of 1.8 percent.

Below, we present the evolution of the Gross Domestic Product per capita in the Republic of Moldova and the number of employees AND we make a comparison between the GDP per capita and the number of employees in the North-East Region of Romania and the counties in the cross-border cooperation program. Romania - Republic of Moldova.

Table 3. Gross domestic product per capita in the Republic of Moldova and in the eligible cross-border area

| GDP per capita | | | | | Average number of employees | | | |
|----------------------------|------|------|------|------|------------------------------------|--------|--------|--------|
| | 2015 | 2016 | 2017 | 2018 | 2015 | 2016 | 2017 | 2018 |
| Northeast region | 5022 | 5324 | 5725 | 6163 | 513.6 | 531.1 | 547.8 | 562.1 |
| Botosani | 4256 | 4546 | 4910 | 5300 | 49.7 | 51.5 | 53.2 | 54.7 |
| Iasi | 6316 | 6670 | 7134 | 7632 | 140.6 | 145.4 | 150.0 | 154.1 |
| Suceava | 4866 | 5159 | 5537 | 5958 | 92.6 | 95.7 | 98.6 | 101.1 |
| Vaslui | 3716 | 3912 | 4216 | 4550 | 51.1 | 52.6 | 54.1 | 55.2 |
| Republic of Moldova | 1962 | 2053 | 2420 | 2736 | 1203.6 | 1219.5 | 1207.5 | 1252.2 |

Source: National Commission for Strategies and Forecasting, Romania / www.bns.md
National Statistics Office of the Republic of Moldova³

From this table we observe a large difference between GDP per capita in the North-East region, the eligible counties in the cross-border area of Romania and the Republic of Moldova. The population of the Republic of Moldova with habitual residence has the following evolution according to the official information of the National Bureau of Statistics. The data show a decrease in population according to the 2014 census where the total population is 2,869,226, and further decreases to 2,681,734 people⁴.

According to new data, which led to the revision of several indicators. According to the NBS, the National Bureau of Statistics, we have data on the stable population of the Republic of Moldova, which has the following evolution, in 2000 the population is 3,644,070 thousand people, and in 2019 we have a population of

³ Projection of the main economic and social indicators in TERRITORIAL PROFILE until 2019, National Forecast Commission, Romania, www.cnp.ro/user/repository/prognoze/prognoza_profil_teritorial_decembrie_2016.pdf.

⁴ Population and Housing Census 2014, National Bureau of Statistics of the Republic of Moldova (<https://recensamint.statistica.md/ro>).

3,542,708, of which in urban 1,527,483 people, and in rural 2,015,225. According to the NBS, the preliminary number of the population with habitual residence (resident population) of the Republic of Moldova on 01.01.2019 was 2 681.7 thousand persons, decreasing by 48.7 thousand persons (1.8%) compared to the same period of 2018.

This decrease was caused, in particular, by the negative increase in population migration. We would like to point out that in the last five years, the annual growth rate has been negative, amounting to about -1.8% annually.

Table 4. Evolution of the population with habitual residence

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------|---------|---------|---------|---------|---------|---------|
| Total | 2869226 | 2844673 | 2824387 | 2779952 | 2730364 | 2681734 |
| men | 1375745 | 1367311 | 2824387 | 2779952 | 2730364 | 1277180 |
| women | 1493481 | 1477362 | 1465175 | 1446031 | 1425060 | 1404555 |

Source: National Bureau of Statistics of the Republic of Moldova

Table 5. Evolution of the stable population in the Republic of Moldova in the period 2000-2019

| | 2000 | 2003 | 2006 | 2009 | 2012 | 2015 | 2017 | 2018 | 2019 |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| TOTAL | 3644070 | 3618312 | 3589936 | 3567512 | 3559541 | 3555159 | 3550852 | 3547539 | 3542708 |
| URBAN | 1514155 | 1484142 | 1469828 | 1476099 | 1485766 | 1507265 | 1516813 | 1521894 | 1527483 |
| RURAL | 2129915 | 2134170 | 2120108 | 2091413 | 2073775 | 2047894 | 2034039 | 2025645 | 2015225 |

Source: National Bureau of Statistics of the Republic of Moldova

Table 6. Population migration from the Republic of Moldova

| | 2000 | 2003 | 2006 | 2009 | 2012 | 2015 | 2016 | 2017 | 2018 |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total | 138.3 | 291 | 310.1 | 294.9 | 328.3 | 325.4 | 319 | 318.4 | 352.7 |
| men | 93.1 | 199.1 | 197.8 | 185.8 | 218.6 | 210.8 | 212.3 | 211.3 | 238.2 |
| women | 45.2 | 91.8 | 112.3 | 109.1 | 109.7 | 114.6 | 106.8 | 107.2 | 114.5 |

Source: The population aged 15 and over, working or looking for work, abroad

According to the 2014 census, we have the following population structure, the population surveyed 2,804,801 people, 950,240 households. The population is characterized by the following structure by sex, men 1,352,099 / 48.2 percent, women 1,452,702 / 51.8 percent. The age structure is as follows: 0-14 years - 17.2 percent / 482,703 /, 15-64 years, 71.9 percent, 2,016,634, and 65 - 305,464 / 10.9

The characteristic of households is highlighted by Households with children / children 0-17 years / 359,463 / 37.5 proc. Of which households with 3 and more children 10.6 proc. 38.192. Households 1 person in total households' 22.6 percent,



ie 217,181. Households from an elderly / 65 plus / from a total household 10.2 percent, ie 97,512 households. Households with access to water supply system - without system 28.1, ie 269401 households. percentages, centralized system - 46.3 percent, with own system 25.6 percent, 245 336.

Households with access to sewerage system, without system 46.6 percent, centralized system - 27.2 percent, with own system 26.2 percent, 251 233. The characteristic of dwellings is by type of dwelling, individual houses constitute 72.5 percent, 897027, apartments 27.5 percent, ie 339 548. Occupied dwellings constitute the figure of 996 965, or 82.6 percent.

2. Evolution of foreign trade of the Republic of Moldova

The economy of the Republic of Moldova with a construction inherited from the former system, and too little modernized in recent decades, has few basic goods for export, and is the poorest country in the region with many social vulnerabilities. At the end of the 1990s, after the financial crisis of 1998, the Moldovan economy was affected by economic and financial-monetary developments in the Russian Federation, after which it gradually recovered, and already in the 2000s it was hit by another wave related to geopolitical tensions between Russia and the European Union. However, the economic agents from the Republic of Moldova managed to reorient and redirect the exports to the European Union countries, the first being the foreign trade with Romania. Moldova is a country that has been building its rule of law since 1990, and its adaptation to the regional and world economy is successful in terms of imports of goods. In contrast, Moldova has failed to deepen its relative trade openness in the last decade. Given that the amount of exports plus imports has expanded substantially. Although after the financial crisis of 1998 there was a decrease from 874,056.5 thousand euros to 565,494.9 thousand euros in 2001. In 2005 it reached 1,090.919 thousand euros, with a gradual increase until 2018 to 2,706,173 thousand euros.

Table 7. Foreign trade of the Republic of Moldova in the period 1997-2018 / million US dollars

| | 1997 | 2001 | 2005 | 2007 | 2009 | 2013 | 2016 | 2017 | 2018 |
|-----------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Total Export | 874 | 565 | 1090 | 1340 | 1282 | 2428 | 2044 | 2425 | 2706 |
| CIS countries | 608 | 344 | 551 | 548 | 490 | 923 | 414 | 463 | 416 |
| EU countries (EU-28) | 185 | 182 | 443 | 678 | 667 | 1137 | 1331 | 1596 | 1861 |
| Total Import | 1171 | 892 | 2292 | 3689 | 3278 | 5492 | 4020 | 4831 | 5760 |
| CIS countries | 604 | 340 | 905 | 1334 | 1142 | 1672 | 1027 | 1206 | 1449 |
| EU countries (EU-28) | 450 | 431 | 1038 | 1681 | 1421 | 2472 | 1973 | 2 389 | 2850 |
| Total Trade balance | -297 | -326 | -1201 | -2350 | -1996 | -3064 | -1975 | -2406 | -3053 |
| CIS countries | 3.79 | 4.17 | -354 | -785 | -651 | -749 | -613 | -743 | -1033 |

Source: National Bureau of Statistics of the Republic of Moldova

The total export of the Republic of Moldova in 1997 amounted to 874,056.5, in 2001 565,494.9 thousand euros, after which it gradually recovers, and in 2005 it reaches 1,090,919 thousand euros. In subsequent years it increased to 2 007 - 1,340,050 thousand, in 2009 - 1,282,981 thousand euros, 2013 - 2.428,303 thousand euros in 2018 reached 2,706,173 thousand euros. The coverage of imports with exports decreased from 74.6 percent in 1997, to 36.3 percent in 2007, in 2008 the lowest share of 32.5 percent was recorded, after which the gradual increase until 2017 began. constituted - 50.19 percent, and in 2018 - fell slightly to 46.98 %.

Total imports in 1997 were 1,171,252 thousand euros, with a deficit of 297 195, 5,000 euros in 2001, 2018 reached 5,760,057 thousand euros. Exports of the Republic of Moldova to EU member states 185,499, 7 euros, in 1997. In 2005 - 443184.4 euros, 2009 667,338.5 euros, 2016 - 1.331,898 euros, 2017 - 1,596,840 euros, 2018 - 1,861 .864. Moldovan exports to CIS countries. The recent expansion of trade in goods in Moldova was mainly due to imports. Imports increased sixfold between 2000 and 2013, increasing the average annual rate by 16%. The large trade deficit was largely financed by remittances received from abroad by citizens who migrated to work abroad, and to a lesser extent through foreign direct investment (FDI). The performance of Moldovan exports is much lower compared to countries in the region. Although he intends to collaborate on the West vector and at the same time with the East vector, the results are modest.

3. Foreign trade of the Republic of Moldova with Romania

3.1. Exports of the Republic of Moldova to Romania

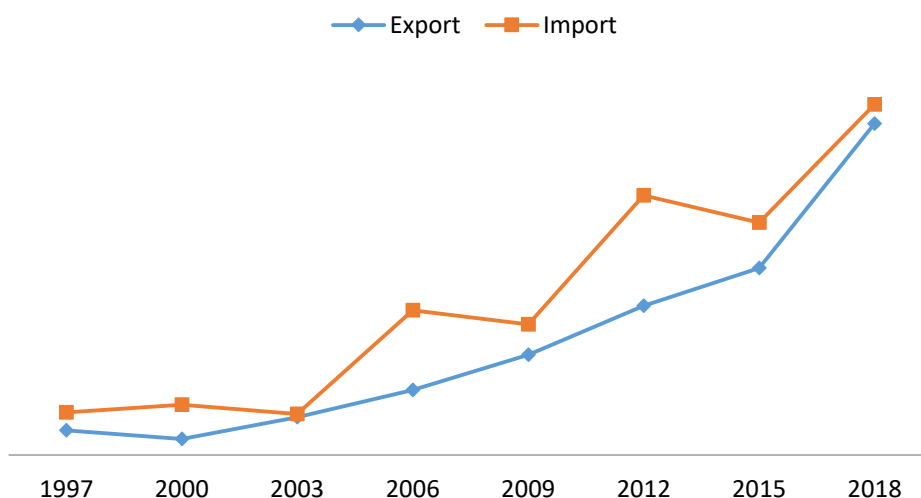
In 2018, on the first place with a weight of 48.61% are placed the exports to the category of group:

- XVI of goods, "machines and appliances, electrical equipment and parts thereof, sound recording or reproducing apparatus and television images".
- On the second place are placed "products of the vegetable kingdom" 17.83%, 6.6 - food, alcoholic beverages, non-alcoholic vinegar, tobacco. 3.94% XX. Miscellaneous goods and products, Furniture; medical and surgical furniture; lighting fixtures and similar articles; prefabricated buildings, toys, games, entertainment or sports articles; parts and accessories thereof.
- XIII. Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware- 4, 22%. With much lower weights are the goods XII. Footwear, headgear; umbrellas; walking sticks; whips; ties and parts thereof; processed feathers and down and articles thereof; artificial flowers; articles of human hair. 2.56% Vehicles, aircraft, vessels and auxiliary transport equipment - 1.5%, XV. Base metals and articles of base metal - 1.17%,
- XVII. plastics and articles thereof, rubber and rubber articles, with a share of 1.22%. In the group of goods "Live animals and products of the animal kingdom, it has a share of 0.21%, for mineral products 0.64%, for products of the chemical or related industry - 0.33%. Exports of Fats and oils of animal or



- vegetable origin and products of their dissociations, processed edible fats, animal or vegetable waxes constitute - 0.43%, and to the group of goods
- IX. Wood, charcoal or other fibrous cellulosic material, paper and paperboard, recycled from recycled waste and waste paper, paperboard (waste and scrap) and articles thereof - 1.18%; to group X. Pulp of wood or of other fibrous cellulosic materials 0.55%; A share of 0.29% belongs to group of goods
 - XVIII. Optical, photographic or cinematographic instruments and apparatus, medical and surgical apparatus; watchmaker's; musical instruments; parts and accessories thereof.

Figure 1. Evolution of Foreign Trade Republic of Moldova and Romania in the period 1997-2018



Source: National Bureau of Statistics of the Republic of Moldova

3. Energy security

A strategic issue in bilateral economic relations is cooperation in the field of energy security⁵, ensuring and developing this strategic and much-needed branch, especially in the interconnection of the national natural gas and electricity transmission system (Nutu and Cenușă, 2016). We would like to mention projects for the interconnection of natural gas transmission pipelines and power lines: (1) the Ungheni - Iasi natural gas transmission system, (2) the interconnections of power lines (Fălciu-Gotești, Bălți-Suceava). An important question is to increase

⁵ Association Agreement between the European Union and the European Atomic Energy Community and their Member States, of the one part, and the Republic of Moldova, of the other part, Official Journal of the European Union.

energy efficiency by reducing losses in interconnection power lines between Moldova and Romania; no less important is the diversification of sources of energy resources with the possibility of electricity delivery from Romania to the Republic of Moldova, the study of the possibilities of involvement of the Republic of Moldova in the projects, AGRE and NABUCCO; connecting to the principles of the EU's internal electricity and gas markets.

4. Intergovernmental economic relations

The intergovernmental partnership between Romania and the Republic of Moldova begins in the early 1990s. In 1992, the joint agreement for the promotion and protection of investments was signed in 1992 (Bucharest), which entered into force in 1997. Romania was the second country with which the Republic of Moldova signed this type of agreement, the first was signed with the US. It was a promising period and with results for that short period in the years 1997-2000 both in the relationship with Romania and in the image and reforms that the democratic and pro-European government of that time managed to start. But in the period 2001-2009 was a frozen period of development of economic relations, although foreign trade with Romania during this period is growing and occupying the leading places. In 2007, the Convention on the Avoidance of Double Taxation between Romania and the Republic of Moldova⁶ entered into force (Ciucu, 2013).

In 2010, the joint statement of the presidents of Romania and the Republic of Moldova on establishing a strategic partnership between the two countries for European integration was made at a high level. The economic exchange provided for "Exchange of experience on the application of European standards and recommendations in the economic, commercial and public finance fields in the process of consolidating the economic sector in the Republic of Moldova;" The draft action plan (document consulted by CRPE) revives the Joint Economic and European Integration Commission, established according to the Agreement between the Government of Romania and the Government of the Republic of Moldova on economic, industrial and technical-scientific cooperation, of November 16, 2005, signed to Bucharest⁷.

The agreement between the Government of Romania and the Government of the Republic of Moldova on the general framework and conditions for development cooperation of 28.08.2013 published in the Official Gazette. of Romania. In force since July 8, 2014. A more intense development of the joint projects started after Romania's promise to grant by 2014 the non-reimbursable financial assistance of

⁶ Convention for the Avoidance of Double Taxation between Romania and the Republic of Moldova, 2007 Convention between the Government of Romania and the Government of the Republic of Moldova for the avoidance of double taxation and the prevention of tax evasion with respect to taxes on income and on capital of 21.02.1995.

⁷ Agreement between the Government of Romania and the Government of the Republic of Moldova on economic, industrial and technical-scientific cooperation, of November 16, 2005.



100 million Euros⁸. That Action Plan contained concrete activities, necessary in the relations between Romania and the Republic of Moldova. The weak part of the problem is that Governments have no longer held joint meetings to approve and implement the action plan.

5. Advantages of the Republic of Moldova for Romanian investors

What can be attractive for Romanian economic agents in the Republic of Moldova? For economic agents in Romania, there are a number of advantages for expanding economic activity in the Republic of Moldova.

5.1. State of the business environment in the Republic of Moldova

The business environment in the Republic of Moldova maintains the tendency to improve its activity. According to the Doing Business (DB) report⁹ in 2019, the Republic of Moldova lost positions ranking 47th out of 190 countries in the Doing Business 2019 ranking, published by the World Bank. In the last two years it has ranked 44th. The Republic of Moldova ranks best in business registration, ranking 14th in the ranking. Opening and starting a business in the Republic of Moldova. Small costs in opening a business. For the establishment of a limited liability company (SRL) the costs are about 350 Euros (5400 MDL). The establishment of a joint stock company (SA) requires approximately 1250 Euros (20,000 MDL). In 2-4 days you can register a company in the Republic of Moldova provided you have a legal address (head office).

The banking and monetary system is stable and has development trends. The banking system in the Republic of Moldova has developed and entered the banking market, including banks with European capital (as an extension of investments made in Romania, the case of ERSTE BCR and Raiffeisen Bank). However, the banking sector is largely owned by Russian and Ukrainian investors who have not always implemented quality procedures and standards specific to European countries. In recent years, raider attacks by stealing billions have destabilized both the banking system and the financial market as a whole.

⁸ Operational Program Romania - Republic of Moldova 2014-2020, Managing Authority Ministry of Regional Development and Public Administration Romania Joint Operational Program Romania - Republic of Moldova 2014-2020 December 2015.

⁹ Doing Business (DB) International Bank for Reconstruction and Development / The World Bank, 2019

6. Cross-border operational programs

6.1. Development and implementation of the joint operational program Romania-Ukraine-Republic of Moldova

Evolution of the Joint Operational Program Romania-Ukraine-Republic of Moldova 2007-2013. The overall objective of the program is to improve the economic, social and environmental situation in the area of action of the program, by intensifying contacts between partners on each side of the border, in the context of secure borders.

Program priorities:

Priority 1: Towards a more competitive economy in the border area, aimed at improving economic performance in the border area by diversifying and sustainably modernizing the economy in the border area.

Priority 2: Environment and emergency preparedness, aims to develop long-term solutions to environmental problems in the border area.

Priority 3: Promoting activities between people, which aims to promote good interaction between people and between communities in the border area. Romania-Ukraine-Republic of Moldova POC Program: is eligible in Romania for the counties: Suceava, Botosani, Iasi, Vaslui, Galati and Tulcea; In Ukraine, the regions (oblast): Odessa and Chernivetska; In the Republic of Moldova, the entire territory of the country. The total budget of the seven-year program was approximately EUR 126,718,067. The total amount of co-financing from the three partner states was EUR 11,404,628. The total budget is EUR 138,122.69. The participation of applicants from the Republic of Moldova in the Joint Operational Program Romania-Ukraine-Republic of Moldova 2007-2013 was considerable. During the first call for project proposals, the institutions of the Republic of Moldova submitted 112 project proposals. Twice as many projects were submitted in the second tender - 272 project proposals. After the evaluation process, 134 projects were selected for implementation in the two calls for project proposals. Of these, 116 projects had partners from the Republic of Moldova. The projects involving partners from the Republic of Moldova amounted to 22 million euros.

6.2. Analysis of the evolution of the Joint Operational Program Romania-Ukraine-Republic of Moldova 2007-2013

During that period, a total of 116 joint projects were carried out with partners from the Republic of Moldova, which were financed under the Joint Operational Program Romania-Ukraine-Republic of Moldova 2007-2013. The table below shows this evolution:



Table 8. Analysis of the evolution of the Joint Operational Program Romania-Ukraine-Republic of Moldova 2007-2013

| Priority | North | Center | South | Chisinau | Total |
|--|-------|--------|-------|----------|-------|
| Priority 1. Towards a more competitive economy in the border area | 4 | 4 | 5 | 11 | 24 |
| Priority 2: Environment and emergency preparedness | 4 | 8 | 2 | 5 | 19 |
| Priority 3: Promoting activities between people | 20 | 19 | 13 | 21 | 73 |
| Total | 28 | 31 | 20 | 37 | 116 |

Source: Bulat *et al.*, 2018, p.31

According to the study For Priority 1. Towards a more competitive economy in the border area, 24 projects / 21% / were allocated, which constitute 49.17% of the allocated funds (Bulat *et al.*, 2018). For Priority 2. Priority 2. Environment and emergency preparedness were 19 projects 16%, which constitute 38.42% of allocated funds, to priority 3. Promotion of activities between people were 73 projects, which constituted 63% from projects, and 12% of allocated funds. A total of 33 million Euros were allocated to these three priorities. The budget absorbed by the Moldovan partners in 2009 was 8 million Euros, and in 2011 about 14 million Euros. By implementing large investment projects, the Republic of Moldova has absorbed about 11 million Euros.

6.3. Romania-Republic of Moldova partnership. Joint Operational Program Romania-Republic of Moldova 2014-2020

Cross-border cooperation at the external borders of the European Union (EU) continues to be a top priority for the European Union in the 2014-2020 programming period. For the period 2014-2020, cross-border cooperation between Romania and the Republic of Moldova strengthened and increased the development potential between Romania and the Republic of Moldova, primarily by applying the instruments and principles of the new European Neighborhood Instrument, with three strategic objectives:

- A. Promoting economic development and social in the regions on both sides of the common borders;
- B. Addressing common challenges in the environment, public health, safety and security;
- C. Promoting better conditions and modalities for ensuring the mobility of people, goods and capital.

The strategic intervention focuses on the thematic objectives:

1. Support for education, research, technological development and innovation (Strategic Objective: A)



2. Promotion of local culture and conservation of historical heritage (Strategic Objective: A)
3. Improving accessibility in regions, developing transport and communications networks and systems (Strategic objective: C)
4. Common challenges in the field of security and safety (Strategic objective: B)
The European Union's contribution to the program is EUR 81 million, while the participating countries must ensure a co-financing of at least EUR 8.1 million.

The main area of the Program covers: Romania - 4 counties - Botoșani, Iași, Vaslui and Galați, Republic of Moldova - the whole country. Due to the rural nature of the basic eligible area, the network of human settlements consists of a limited number of cities, of which only five have over 100,000 inhabitants: Iasi, Galati, Botoșani, Chisinau, Bender, Balti and Tiraspol. The border divided by the two states corresponds to that of the European Union, as Romanian North-East and South-East development regions are the most ultra-eastern regions of the EU. According to the study carried out at the elaboration of the Program for the area are characteristic - Reduced earnings in economic activities in the eligible area that do not require a high level of education, in agriculture in particular, the movement towards a labor market focused on services.

The existing economic activities in the eligible area / agriculture, industry, constructions, cannot capitalize on the size of local markets, with lower incomes than the branch. The population employed in high value-added sectors is a very low ratio. / 0.18% / The limited number of sectors with significant levels of investment and unequal distribution does not create new jobs and new employment opportunities, therefore economic activities do not develop, and in the medium and long term they become underdeveloped.

An important problem is the small proportion of employment in information, communications and financial activities, where income levels are much higher. The field of research-development-innovation is reduced, therefore also production capacities. and exports are low. Development of financing programs in the amount of 24.2 million Euros for cross-border cooperation projects, through the Romania - Republic of Moldova Program, through the Managing Authority within the Ministry of Regional Development and Public Administration, signed on June 28, 2019 through the Joint Operational Program Romania -Republic of Moldova 2014-2020. Improving the exchange of information between the two partner states, by developing the communications infrastructure through: The "Communication Infrastructure" Project (COMINF), with a total budget of 7.9 million euros (of which 5 million from European funds) For: Construction and the operationalization of a police center in the Republic of Moldova; installation of fiber optic equipment on the route Iasi - Chisinau; interconnection of police inspectorates in the Republic of Moldova.

Increasing the security of the eastern borders of the European Union, by rehabilitating the police stations in the border area of the two partner states. The project "Regional Cooperation for Preventing and Combating Cross-Border Crime Romania - Moldova" (THOR) has a total value of 12.5 million euros (of which 6.4



million euros from European funds), developed by the partnership between the General Inspectorate of Romanian Police and that of the Republic of Moldova, the General Inspectorate of the Border Police of Romania and the Republic of Moldova¹⁰. Improving the structure of the SMURD operation (SMURD 2): The project aims to increase the safety of the population by developing the capacity to intervene in emergency situations and has a total value of 10 million euros (of which 6.4 million European funding). The construction of a training ground for emergency services staff in both states will be funded.

The development of the Iași-Ungheni pipeline is an important step to new energy alternatives in the area. The success is conditioned by the further development of the distribution network in the Republic of Moldova in order to connect its consumers to the gas pipeline.

The new bilateral program, Romania-Republic of Moldova 2021-2027. The Joint Document for NEXT (Joint Paper)¹¹ programs issued by the European Commission in January 2020 recommends the thematic concentration of funding on the following objectives: Policy Objective 4 (A smarter Europe and its neighborhood) with a focus on unemployment, education, health and social inclusion; Policy Objective 3 (A more connected Europe and its neighborhood) with a focus on sustainable, smart and intermodal infrastructure and digital connectivity; The specific objective INTERREG 1 (A better cooperation governance for Europe and its neighborhood) with a focus on institutional capacity, civil society, minorities, the specific objective INTERREG 2 (A safer and more secure Europe and its neighborhood) with a focus on border management.

7. The strategic development objectives of the Republic of Moldova in the context of the development and implementation of the “Moldova 2030” Strategy

The Moldova 2030 Strategy has the following objectives and priorities¹²:

- Major objectives in the long-term development of the Republic of Moldova, especially in terms of family and children, population migration, depopulation and aging, population health, education, economy, technologies, climate change and governance.
- The long-term development of the Republic of Moldova must be approached in the light of the experience gained from the implementation of previous national development strategies, therefore, the approach to using these experiences has served to develop and implement the Strategy “Moldova 2030” - focus on people

¹⁰ The project “Regional Cooperation for Preventing and Combating Cross-Border Crime Romania - Moldova” THOR.

¹¹ Bilateral program, Romania-Republic of Moldova 2021-2027. Through the Joint Document for NEXT (Joint Paper) programs issued by the European Commission.

¹² Moldova National Development Strategy 2030.

- and increase their quality of life - as well as presents the long-term development scenarios of the Republic of Moldova.
- Implementation of the ten strategic objectives for sustainable development of the Republic of Moldova, in the long term: Sustainable and inclusive economy: 1) increasing revenues from sustainable sources and mitigating economic inequalities; 2) increasing people's access to physical infrastructure, public utilities and living conditions; 3) improving working conditions and reducing informal employment; Robust human and social capital: 4) guaranteeing quality education for all and promoting lifelong learning opportunities; 5) ensuring the fundamental right to the best physical and mental health; 6) solid and inclusive social protection system; 7) ensuring a work-life balance; Honest and efficient institutions: 8) ensuring efficient and inclusive governance and the rule of law; 9) promoting a peaceful, secure and inclusive society; Healthy environment: 10) ensuring the fundamental right to a healthy and safe environment. Achieving these objectives will direct the Republic of Moldova towards sustainable development, without leaving anyone behind.
 - Promoting the principles underlying the implementation of the "Moldova 2030" Strategy and, respectively, the sectoral policy documents for its implementation, the mechanism and the institutional and normative framework necessary for the implementation of the "Moldova 2030" Strategy; as well as its monitoring and evaluation framework.

Conclusions

We would like to appreciate that there are certain results in the development of bilateral economic relations between Romania and the Republic of Moldova, experience is gained on both sides. In the next strategic cycle in which Romania is located, which must pay much more attention to the development of the regions / counties on the eastern border both from the point of view of internal economic and social development, and from the strategic point of view that it is the border of east of the European Union and NATO.

The respective development, which certainly requires to be intensified from all points of view, will contribute both to the development of cross-border projects between Romania and the Republic of Moldova, but will also be a social, economic, investment and financial support for the citizens. and Romanian citizens domiciled in the Republic of Moldova.

Therefore, for the development and implementation of the new strategic cycle of development of cooperation programs in the years 2021-2027 and beyond we must draw conclusions from past lessons, in order to avoid mistakes for the future. It is necessary a more viable and real communication at all levels, the creation of communication networks, information, digital, economic, commercial cooperation, the organization of meetings, economic forums, the creation of business partnerships with the participation of economic agents from both states, public institutions local and central, non-governmental organizations in partnership with the State,



Employers and trade unions, “competent institutions” as professional organizations, Chambers of Commerce, etc.

Identification and realization of projects financially supported by Romania, with European and international funds to which the Republic of Moldova has access.

Development of projects for the interconnection of road and railway transport infrastructures; development of integration projects within the transport and telecommunications networks in the European space. In the field of railway transport, it is important to build the European gauge line between Romania and the Republic of Moldova. In the field of shipping, preparing to ensure airworthiness conditions - stimulating shipping on the Prut River, with access to the Danube, in the field of air transport - intensifying cooperation in the field of air traffic management, supporting the implementation in the Republic of Moldova of EU legislation on access to the European Single Space. In the field of transport and infrastructure, we would like to mention that the most important strengths are well-organized and developed car transport. For these reasons, it is necessary to develop new bus network projects to directly connect the localities of the Republic of Moldova with both the North-East and South-East Region, as well as the connection with other regions.

Development of projects in the field of energy and alternative energy sources necessary primarily for the Republic of Moldova which is dependent on energy imports. The information technology industry and good internet infrastructure both in the Republic of Moldova and in Romania has a good evolution in its development, but requires the development of a more functional applicability on all axes of e-commerce development, development platforms, information and innovation, new development industries, digital support of traditional industries and developed agriculture, precision, digitization of local services in the eligible area of Romania and the Republic of Moldova.

Priority areas such as agriculture, viticulture, sanitary-veterinary, food security, ecology can easily be identified intergovernmental projects for cross-border development, European, or other eligible axis through which the Republic of Moldova can be supported to meet the necessary European standards / taking into account the fact that Romania already has experience and expertise in these fields.

An important problem of the eligible area in Romania and the Republic of Moldova is the low level of urbanization with the disadvantages that are in rural areas related to infrastructure and which through the chain create other problems of social, informational, economic, digital, financial, which mobilizes certain social groups to leave those localities, and the remaining ones remain in difficulty.

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RESILIENCE OF THE EU EXPORTS TO UKRAINE UNDER THE COVID-19 PANDEMIC

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Abstract

The paper assesses vulnerability of the EU exports to Ukraine to the current COVID-19 pandemic, which became the major challenge for societies and economies. The main current trends affecting the bilateral trade are discussed. A regression analysis is used to estimate the effects of demand and supply shocks, and changes in price competitiveness. The EU exports of fuels and road vehicles are the most sensitive to changes in the Ukraine's GDP, the exports of chemical products and telecommunication equipment – to devaluation of hryvnia. The most resilient EU exports to Ukraine included medicinal and pharmaceutical products, beverages and tobacco. The changes in consumption patterns under the quarantine measures also favoured stability of food and IT-services exports. The post-factum verification of results with the resent data confirmed most sector-specific effects. On average the EU exports to Ukraine turned out to be more resilient than to other countries.

Keywords: EU-Ukraine relations, bilateral trade, COVID-19 pandemic economic effects, export resilience, devaluation

Introduction

In recent years the EU and Ukraine improved their bilateral foreign trade treatment by implementing the Association Agreement and the Deep and Comprehensive Free Trade Area. In 2014-2019 the EU became the number one trading partner for Ukraine with the share of 42% of the Ukrainian foreign trade. Ukraine occupies the 18th position in the EU foreign trade with the share of 1.1%. The EU-Ukraine trade increased from \$38.0 billion to \$45.8 billion, the EU export to Ukraine – from \$21.1 billion to \$25.0 billion and imports from Ukraine – from \$17.0 billion to \$20.8 billion (State Statistics Service of Ukraine, 2020¹; European Commission, 2020; European Commission, 2020a).

The EU-Ukraine Association Agreement and the deep and comprehensive free trade area proved to be an efficient instrument of the EU neighbourhood policy. It

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¹ State Statistics Service of Ukraine (2020), (retrieved from <http://ukrstat.gov.ua/>).

helps both sides to create new workplaces, stabilize economic growth, increase and restructure mutual trade. It creates new trade in goods and services, and investment opportunities for companies from both sides.

Implementation of the deep and comprehensive free trade area will allow Ukraine to integrate into the EU internal market deeply without being a member. As stated in the Joint Communication of the European Commission “Eastern Partnership policy beyond 2020. Reinforcing Resilience – an Eastern Partnership that delivers for all”², selective and gradual economic integration into the EU’s internal market is conditional on regulatory convergence with the EU *acquis*. E.g. in the midst of 2020 Ukraine already met 82% of its obligations within the Association Agreement for technical barriers in trade and 80% for public procurement, although still only 22% for intellectual property and 24% for financial cooperation with anti-fraud provisions (European Integration Portal, 2020).

But in 2020 the current COVID-19 pandemic became a major challenge for the global economy and obviously affects international trade. Most countries faced a double-digit decrease in their exports during the first pandemic wave. Production and exports of capital goods, durable consumer goods, passenger transport, accommodation and catering services turned out to be especially vulnerable.

In previous research literature several channels of the negative impact were discussed: increased medical expenditures, decrease in labour supply, social distancing, changes in consumer preferences away from non-essential goods, specialization of countries, as well as uncertainty and partial de-globalisation. It was a shock both on the demand and supply side.

The aim of this paper is to assess which EU exports to Ukraine are vulnerable to contraction of the importing and exporting economies as well as to real exchange rate changes affecting price competitiveness and which exporting industries remain resilient. In broad meaning, resilience of exports means their ability both to resist the influence of a negative shock and to recover afterwards. But since the pandemic is far from being over and the data for the indicators during the first wave was available at the time of research, a more narrow meaning of resilience as an ability to withstand a shock is applied in the paper.

² European Commission (2020b), Eastern Partnership Policy beyond 2020. Reinforcing Resilience – an Eastern Partnership that Delivers for all. Joint Communication to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions. SWD(2020)56 final, 18 March, Brussels (retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/joint_communication_on_the_eap_policy_beyond_2020.pdf).



1. Previous research review on the pandemic's effects

Several years before the current crisis Verikios *et al.* (2011) summarized various economic effects that an epidemic may cause:

- increased medicals expenditures of patients or governments and increased workloads for a healthcare system;
- decrease in labour supply due to deaths (permanent losses), illness, absenteeism from work to avoid infection or necessity to care for children if schools are closed (temporary losses);
- decrease in public gatherings, closures of educational institutions;
- reduced demand for services that need face-to-face contact (tourism, transport, retail trade etc.).

Nowadays Kirk and Rifkin (2020) reviewed several trends affecting consumer behaviour during the pandemic:

- hoarding behaviour exacerbated by supply chain disruptions at the beginning (stocking up such goods as disinfectant and cleaning products or toilet paper);
- maintaining social connectedness in a time of social distance (virtual gatherings by video conferencing);
- coping by doing-it-yourself (cooking, making protective masks, gardening etc.);
- changing views of brands depending on how brands respond to the pandemic;
- longer-term adapting (acceleration of online retailing, tele-medicine, quick infection diagnostic tools) etc.

Barua (2020) stated that the pandemic resulted in de-globalization in a form of closing borders at least temporarily. In the short run the COVID-19 favoured trade in essential goods at a higher price and reduced trade in non-essential goods causing price cutting. The likely local and international implications in the short and medium run were summarized: human lockdown, demand and production shocks, carrier crisis and port closure, delays in port clearance and shipment resulting in disruption of supply chains, trade and capital flows diversion, increased costs and prices, interruption of travels.

In April 2020 Maliszewska *et al.* (2020) provided a simulation of the COVID-19 pandemic effects related to underutilization of labour and capital, increased trade costs, a drop in travels and a switching demand away from activities that require proximity between people. They expected that global exports would decrease by 2.5-4.6% but also noted that they could underestimate the overall effect. Labour-intensive, tradable sectors and manufacturing depending on imported inputs would be among the most vulnerable. Services sector (especially transport services, recreational activities and accommodation) would be hit more than manufacturing and agriculture (but selected agricultural products, chemicals, electronics, refined oil would also be heavily affected). Also, earlier this year Oliveira *et al.* (2020) forecasted a 15-25% decrease in the global trade in 2020 followed by 4-10% growth in 2021.



Büchel *et al.* (2020) analysed the case of Switzerland. In the 1st half of 2020 the foreign trade fell by 11%, although product diversification smoothed the negative effect of the pandemic on exports due to resilience of chemical and pharmaceutical industry. They noted that the pandemic and contingency measures affected foreign trade both on the demand and supply side. In particular, the Swiss exports were negatively affected by the number of Covid-19 cases in foreign markets, while stringency of the government measures in exporting countries affected Swiss imports.

Hayakawa and Mukunoki (2020) analysed international trade in the 1st quarter of 2020. They concluded that the COVID-19 burden in terms of registered cases and deaths in exporting countries was the main factor suppressing international trade (especially in textile, footwear and plastic industries) unlike the burden in importing countries. Thus the supply-side shocks turned out to be more important at the early stage of the pandemic. There also was a substitution effect as a country's exports positively correlated with the burden in its neighbouring countries. Also, the COVID-19 burden turned out to stimulate imports of foods at that time.

Economic Commission for Latin America and the Caribbean (2020) stated that the initial supply shock on global trade (due to closure of production of inputs in China that it had exported to factories in Europe, North America and Asia) was gradually compounded by a demand shock.

A cross-regional comparative study by Éltető (2020) showed that Iberian countries were seriously affected considering the role of tourism sector for their economy. The vulnerability of Central European countries is related to their integration in international production chains in automotive and electronic industry, but in the long run they may benefit from shifting production of European multinationals from China.

Some authors pay attention to sector-specific effects of the pandemic for international trade. Kerr (2020) analysed the impact on food supply. Initial panic buying created extra demand for food, but later this effect was offset by decreasing income and shifting away from having meal away from home. As for regulation, at the beginning countries tried to ensure proper operation of these supply chains to prevent or cool down panic. Later governments either may wish to ensure institutional framework for international trade or may smooth internationalization of their food supply to avoid heavy dependence on foreign exporters.

Albulescu (2020) estimated that there was a marginal negative direct impact of daily reported cases on oil prices, although there could also be an indirect effect of amplifying the financial markets volatility on oil prices too.

Schuler (2020) noted that the lockdown measures had a substantial impact on sectors involving physical contact, including travel and passenger transportation services. The effect was much deeper than in September 2001 after the terrorist attacks. Almost all countries imposed restrictions on incoming travels, including complete bans. Even after easing the lockdown measures consumers often preferred risk aversion. In the euro area Cyprus, Malta, Greece, Portugal as well as



Luxembourg, Slovenia, Spain and Austria were the most exposed tourism exporting countries to the impact of the pandemic.

Pogorel (2020) mentioned air travels and automobile industry as examples of the most affected sectors and video streaming services as an example of a sector enjoying expansion.

Leibovici and Santacreu (2020) wrote that under growing number of the infected people the actual or potential scarcity of medical equipment forced many governments to apply export restrictions or reduce import tariffs on these goods. In order to avoid global shortages later, they suggested an option of creating a global reserve of essential medical equipment, where all countries may contribute. Under epidemic a country could get the necessary equipment from it, but once it recovers it should contribute again.

Espitia *et al.* (2020) estimated that in the short run exporting restrictions would raise prices of medical masks by 20.5% and prices of venturi masks by 9.1%. They also stated that such export restrictions for protective and medical equipment may be contagious causing a multiplier effect on prices. Some countries introduced import tariff exemption for medical and testing equipment, although as a temporary measure.

As for consequences in the long run, Pogorel (2020) noted that the pandemic may favour relocating production in the technological, industrial, and digital areas. Thus, globalisation may have already reached a plateau. And if states may wish to relocate production of strategic goods and services, there should be international coordination to avoid trade wars.

Barua (2020) expects such longer term implications for the world market as sourcing location shift, revising trade barriers, altered international competition and trade relations, renewed trade agreements and possible de-globalization.

Economic Commission for Latin America and the Caribbean (2020) expects that several trends will be reinforced later: less interdependence in production, trade and technology between the global powers; more geopolitical and national security considerations in trade, more frequent trade disputes, and regionalisation around production hubs in North America, Europe, and East and South-East Asia.

Analysis of the bilateral trade between the EU and Ukraine is rather a new specific aspect within the research of the COVID-19 pandemic effects.

2. Methodology

The empirical analysis is started with the review of the current COVID-19 pandemic situation and its effects for macroeconomic situation in the world and Ukraine in particular. Considering the availability of data, the period of the first wave of the epidemic in Europe is considered (spring and early summer of 2020). On the demand side we provide the recent statistical trends in the Ukrainian GDP and imports. The industrial and services production and exports of the EU to the rest of the world are described on the supply side. Factors of the hryvnia's real exchange

rate are mentioned to account for trends in price competitiveness. Total values and sectoral break-down are provided. New regulatory barriers to international trade can also be an important factor affecting specific industries.

Then we apply correlation and regression analysis of the past data to estimate the vulnerability of the EU exports to Ukraine to the current economic crisis under the COVID-19 pandemic. Correlation analysis was used for the primary selection of variables after considering significance of the correlations. The initial specification of the tested regression model was:

$$\text{Exp}_{\text{EUUA}} = b_0 + b_1 \text{GDP}_{\text{UA}} + b_2 \text{GDP}_{\text{EU}} + b_3 \text{RER} \quad (1)$$

Exp_{EUUA} is the merchandise exports growth in a particular year (from the EU to Ukraine, all products), GDP_{UA} is the growth of the Ukrainian GDP in dollars (conversion with exchange rate, current prices) in the same year, GDP_{EU} is similarly the EU GDP growth, and RER is the real appreciation of Ukrainian hryvnia vis-à-vis the euro. All the variables are measured in %, therefore the regression coefficients can be interpreted as elasticities. The number of cases is 23 (1996-2018). The data source is UNCTADStat³. We checked the initial model for homoscedasticity, normality of residuals, linearity and absence of outliers. Stationarity of data is largely ensured by applying growth values instead of static ones.

The regression coefficients can be used to assess the effects of demand shock (GDP decrease in the importing economy) and supply shock (GDP decrease in the exporting economy) corrected for exchange rate and inflation trends, which themselves also may be attributable to difference in the phases and amplitude of economic cycles in the EU and Ukraine. All these shocks are possible under the current pandemic, when the economies experience losses in labour supply under infection and social distancing, and structural and absolute changes in consumption. We must note that the GDP of the EU and Ukraine correlate quite a lot (0.66). Therefore, the effects of demand and supply shocks sometimes are not easy to distinguish, unless one of the correlations with the exports growth is substantially larger.

In this paper we also considered the possible effects for particular EU exports to Ukraine – by large product groups and sometimes smaller groups if consumption patterns may differ for them under the pandemic and the relevant mitigation measures. In order to assess robustness of results we use alternative calculation method for regression analysis, when the years are weighted (the weight 3 is attributed to 1996, 4 to 1997, ..., 25 to 2018). Such an approach can help to find out changes in relationships between variables across time. Finally, the regression coefficients are multiplied by the shares of the particular product groups in the bilateral exports to assess which industries may be of a particular concern due to temporary shrinking of the market in Ukraine.

³ UNCTADStat (2020), *Data Center* (retrieved from http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS_ChosenLang=en).



Post-factum verification of results is based on the available statistical data for the EU exports to Ukraine during the first wave of the pandemic. Besides the sectoral break-down for merchandise trade, sector-specific trends for services exports are described too.

3. Macroeconomic trends and trade regulation changes under the COVID-19 pandemic

In 2020 the COVID-19 pandemic itself and the measures to contain it became the major event affecting the global economy. According to Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) (2020), on October 1, 2020 there were more than 34 million confirmed cases of the disease worldwide and more than 1 million deaths⁴.

Despite China seems to be the country of origin, it has contained the epidemic within few months. The negative effects for its economy were mainly in the 1st quarter of 2020. Western Europe and Iran became the next hotbeds of the disease with more severe consequences. Later the sickness rate soared in the US. The next epicentres included Russia and the Arabic world, and later Latin America. At this moment India has reached the 2nd place after the US by the disease cases, followed by Brazil. Nowadays the EU experiences the 2nd wave of the epidemic. The pandemic dynamics and the market reaction remain far from being purely predictable.

As a result of early launch of mitigation measures in March 2020, the epidemic situation in Ukraine was relatively good for half a year and only by October the number of registered cases reached 4 thousand per day. The contraction of economy in the 2nd quarter was rather caused by the national quarantine measures, which were fine-tuned later, and downward trends in the global markets than by the epidemic itself (the number of 1 thousand cases per day in Ukraine was reached only in August).

According to Trading Economics⁵, the Ukrainian GDP decreased in the 2nd quarter 2020 by 9.9% (the unemployment rate increased to 9.9% (from 7.8% in July 2019) and in April the wages decreased by 8.9%). After easing the mitigation measures in summer Ukraine experienced economic revival and the GDP growth in the 4th quarter of 2020 is expected to be 1.6%.

Similar or even more pessimistic trends in the GDP took place in other economies in the 2nd quarter: Japan -7.9%, Poland -8.9%, Brazil -9.7%, Germany -9.7%, Turkey -11%, Canada -11.5%, EU -11.9, Romania -12.3%, Mexico -17.1%, India -25.2%, US -31.4%, South Africa -51%. GDP contraction took place in the majority of countries, which negatively affected demand for imports. In December

⁴ Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) (2020), COVID-19 Dashboard (retrieved from <https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>).

⁵ Trading Economics (2020), (retrieved from <https://tradingeconomics.com/>).

2019 – May 2020 exports of the euro area dropped by 22.0%, US – 30.8%, China – 7.7%, Eastern Europe and CIS – 4.4%, Latin America and the Caribbean – 26.1%, Africa and the Middle East – 13.9%, the world – 18.3% (Economic Commission for Latin America and the Caribbean, 2020).

According to State Statistics Service of Ukraine, in January – July 2020 the total Ukrainian merchandise imports in goods decreased by 14.7%⁶, especially the imports of mineral products (-35%), base metals and preparations thereof (-19%), ground, air and water transport facilities (-16%), machines, equipment and mechanisms, electric and technical equipment (-15%), paper bulk from wood or other vegetable fibres (-14%), products from stone, gyps and cement (-13%), and products of chemical and allied industries, polymeric materials, plastics and articles of them (-9%). Meanwhile, the imports of some products increased: live animals and livestock products (19%), plant products (15%), optical and cinematographic apparatus (15%), food industry products (14%), soap and surface active agents (14%), pharmaceutical products (12%), and furniture (9%). The imports of textiles materials, articles of textiles and toys remained almost unchanged.

In January – July 2020 the Ukrainian total exports decreased by 7.4%. The metal exports decreased by 19% as they are more procyclical than average exports. But despite this and overall economic contraction, return of seasonal labour migrants and other weaknesses, devaluation of the Ukrainian hryvnia by autumn 2020 turned out to be very mild in comparison to the previous local crises. We assume that several factors helped to stabilize the national currency:

- falling prices for fuel imports (after the Brent crude oil price peaked in January 2020 to reach \$69 per barrel it decreased to \$19 in April and partially restored to \$39 in early October (Trading Economics, 2020));
- relative resilience of food and agricultural product exports;
- financing from the IMF and the EU;
- restrictions on the mobility of individuals (the trade deficit in travel services was \$500 million in the 2nd quarter of 2020 in comparison to \$1800 million in the 2nd quarter 2019⁷);
- necessity for some individuals to spend foreign currency savings to buy essential goods under the lockdown;
- only minor increase in the external debt by \$1 billion in the 1st half of 2020.

According to National Bank of Ukraine, the real effective exchange rate of hryvnia decreased by 10% in August 2020 in comparison to February, mostly because of the exchange rate change with only minor effect of the difference in foreign and domestic inflation. We also used the data of National Bank of Ukraine (2020) and European Central Bank⁸ to calculate the bilateral nominal and CPI-based

⁶ Here and below in comparison to the same period in 2019.

⁷ National Bank of Ukraine (2020), Statistics (retrieved from <https://bank.gov.ua/ua/statistic>).

⁸ European Central Bank (2020), Statistical Data Warehouse (retrieved from <https://sdw.ecb.europa.eu/browseSelection.do?node=1496>).



real devaluation of hryvnia. The hryvnia devalued in March – August 2020 nominally to the euro by 18.1%. The real devaluation was by 17.4%. Similar devaluations took place to the Romanian leu: 17.6% and 17.2%.

The potentially negative devaluation effect on the EU exports to Ukraine could vary by industries considering the difference in demand elasticities and prices changes for particular goods and services. E.g. the effect was partially offset by relatively faster growing prices in Ukraine in March – August 2020 for alcoholic beverages and tobacco (4.5%), food and non-alcoholic beverages (1.3%), healthcare (5.2%), communications (2.7%) and restaurants and hotels (1.4%), although the latter three sectors are rather non-tradable with only indirect effect on imports (authors' calculations based on the data of National Bank of Ukraine).

Meanwhile, in the EU during the 1st wave of the epidemic the sectoral trends in domestic production were mostly negative too (see tables 1-3). The most severely affected industries were the manufacture of vehicles, textiles, wearing apparel, leather and related products, furniture and metals. These products are largely capital goods, durable consumer goods or medium-technology products. The chemical and especially pharmaceutical industry, manufacturing of medical equipment, computer and electronic products, food and beverages industry, and utility supply proved to be the least affected. They include mostly high-technology manufacturing and non-durable consumer goods.

Table 1. Growth of the EU industrial production in March – June 2020, sectoral break-down, %

| Industry | Growth rate |
|---|-------------|
| Mining and quarrying | -15 |
| Manufacture of food products; beverages and tobacco products | -7 |
| Manufacture of textiles, wearing apparel, leather and related products | -35 |
| Manufacture of wood, paper, printing and reproduction | -12 |
| Manufacture of coke and refined petroleum products | -13 |
| Manufacture of chemicals and chemical products; basic pharmaceutical products and pharmaceutical preparations | -1 |
| Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations | -10 |
| Manufacture of basic pharmaceutical products and pharmaceutical preparations | 8 |
| Manufacture of rubber and plastic products | -21 |
| Manufacture of other non-metallic mineral products | -17 |
| Manufacture of basic metals and fabricated metal products, except machinery and equipment | -24 |
| Manufacture of computer, electronic and optical products; manufacture of electrical equipment | -11 |
| Manufacture of computer, electronic and optical products | -6 |

| | |
|---|-----|
| Manufacture of irradiation, electromedical and electrotherapeutic equipment | -2 |
| Manufacture of electrical equipment | -16 |
| Manufacture of machinery and equipment n.e.c. | -21 |
| Manufacture of motor vehicles, trailers, semi-trailers and of other transport equipment | -43 |
| Manufacture of furniture | -27 |
| Other manufacturing | -17 |
| Repair and installation of machinery and equipment | -18 |
| Electricity, gas, steam and air conditioning supply | -7 |

Note: in comparison to the same period in 2019.

Source: authors' calculations based on Eurostat (2020).

Table 2. Growth of the EU industrial production by product types in March – June 2020, %

| Product type | Growth rate |
|---|--------------------|
| High-technology manufacturing | -3 |
| Medium high-technology manufacturing | -25 |
| Low-technology manufacturing | -14 |
| Medium low-technology manufacturing | -21 |
| Intermediate goods | -16 |
| Energy (except section E) | -10 |
| Capital goods | -27 |
| Consumer goods | -10 |
| Consumer goods (except food, beverages and tobacco) | -12 |
| Durable consumer goods | -25 |
| Non-durable consumer goods | -8 |

Note: in comparison to the same period in 2019.

Source: authors' calculations based on Eurostat (2020).

As we see in table 3, the COVID-19 crisis was the most devastating for the air transport, accommodation and food service activities, which means large losses for tourism exporting countries. Other heavily affected services included publishing activities, motor vehicle trade and repair, audiovisual production, advertising and employment services. The sectors of computer programming, consultancy and related activities even managed to increase production. Telecommunications experienced a stable demand and showed a flat trend. Relatively resilient services sectors with minor contraction of production included postal and courier activities, architectural and engineering activities, technical testing and analysis, security and investigation activities and wholesale trade (except sales of motor vehicles).



Table 3. Growth of the EU services production in March – June 2020, %

| Industry | Growth rate |
|--|--------------------|
| Services required by STS regulation | -18 |
| Wholesale and retail trade and repair of motor vehicles and motorcycles | -27 |
| Wholesale trade, except of motor vehicles and motorcycles | -5 |
| Transportation and storage | -17 |
| Land transport and transport via pipelines | -16 |
| Water transport | -10 |
| Air transport | -57 |
| Postal and courier activities | -4 |
| Accommodation | -73 |
| Food and beverage service activities | -56 |
| Publishing activities | -30 |
| Motion picture, video and television programme production, sound recording and music publishing activities | -25 |
| Telecommunications | 0 |
| Computer programming, consultancy and related activities | 1 |
| Information service activities | 4 |
| Real estate activities | -10 |
| Professional, scientific and technical activities required by STS regulation | -10 |
| Legal, accounting and management consultancy activities | -9 |
| Architectural and engineering activities; technical testing and analysis | -6 |
| Advertising and market research | -23 |
| Administrative and support service activities | -16 |
| Rental and leasing activities | -11 |
| Employment activities | -23 |
| Security and investigation activities | -6 |
| Services to buildings and landscape activities | -7 |
| Cleaning activities | -8 |
| Office administrative, office support and other business support activities | -18 |
| Construction | -13 |

Note: in comparison to the same period in 2019.

Source: authors' calculations based on Eurostat (2020).

As for external trade, according to Eurostat (2020), in the 2nd quarter 2020 the extra-EU27 merchandise exports dropped by 20%, the services exports decreased by 27%. In March – June 2020 both extra-EU27 and intra-EU27 merchandise trade decreased almost evenly (by 36% and 35%), therefore there was no trade diversion effect. Exports of goods to China decreased only by 1% and to the US by 15%. The tourism industry was probably the most affected services exporting sector. In April – June 2020 the number of arrivals of foreigners to the EU-27 at tourist accommodation establishments dropped by 80% (in Romania by 98%).

In March – July 2020 Romanian intra-EU-27 merchandise exports decreased by 24% and extra-EU27 exports – by 22%. The services exports dropped by 17%. In March – June 2020 Romanian exports of intermediate goods were the most affected as they decreased by 44% in comparison to capital goods (40%) and especially consumption goods (32%).

As for regulatory environment transformation, 80 countries and separate customs territories have launched export prohibitions or restrictions due to the COVID-19 pandemic, including 72 WTO members (if EU member states are counted individually). As of 21 September 2020, WTO members had submitted 245 notifications related to COVID-19 (World Trade Organization, 2020b). Such notifications are submitted in line with the WTO rules which allow member state to impose export-restricting measures necessary to protect human, animal or plant life or health.

The EU had adopted 9 regulating documents affecting trade in goods related to COVID-19. Two of them included export authorization for third countries. Exports of personal protective equipment (HS 39; 40; 61; 62; 63; 90) were subject to the temporary production of an export authorization. As from 19 March 2020, the exports to EFTA members, the Faroe Islands, Andorra, San Marino and the Vatican City and the overseas countries and territories listed in Annex II of the Treaty were exempted. The new regulation was more targeted, coverings three product categories, instead of the five in the original export authorization scheme mentioned above (only protective masks, spectacles and garment exports will require an export authorization: HS 9004.90.10; 9004.90.90; 6307.90.98; 9020.00.00; 3926.20.00; 4015.90.00; 6113.00; 6114; 6210.10.10; 6210.10.92; 6210.10.98; 6210.20.00; 6210.30.00; 6210.40.00; 6210.50.00; 6211.32.10; 6211.32.90; 6211.33.10; 6211.33.90; 6211.39.00; 6211.42.10; 6211.42.90; 6211.43.10; 6211.43.90; 6211.49.00). The new scheme explicitly required member States to authorize exports of emergency supplies in the context of humanitarian aid and to process the relevant applications in an expedite manner. It asked the Member States to positively assess exports to state agencies in charge of distributing personal protective equipment or involved in combating the COVID-19 outbreak (World Trade Organization, 2020a).

Both schemes were effective for short period of time to impact considerably on the export of personal protective equipment to third countries including Ukraine. The second scheme made an exemption for Western Balkans, but both schemes did not provide it for the European countries in association with the EU.

4. Empirical results of modelling resilience of the EU-Ukraine exports

As we see from the table 4 and Appendix 1 (by comparing correlations or elasticities), the EU bilateral exports are likely to be more demand-driven (either directly by the Ukrainian GDP growth or indirectly through better price competitiveness under expensive hryvnia in calm periods) than supply-driven by growth of capacities in the EU. The results are robust enough considering that coefficients calculated for weighted cases are similar to the ones for unweighted



cases. This evidences that there were no major changes in the relationships between the exports and their factors in the considered period.

Appendix 1 also shows the correlations for the EU exports of particular product groups. A great majority of correlations with the GDP growth are significant. Thus, all the sectors seem to be demand-driven and most are also supply driven, unless there is a minor effect of multicollinearity to be treated during the regression analysis phase. We also must note specific situation due to COVID-19 pandemic as the traditional vulnerability of medicinal, pharmaceutical and IT-products to the demand shock may not materialize this time, because nowadays there is an increased demand for healthcare activities, online working and entertainment at home.

Only half of industries depend on real exchange rate trends. These are probably products, which rely on price competitiveness (e.g. chemical and pharmaceutical products, food, telecommunication equipment – after devaluation consumers in Ukraine may switch to domestic products or products imported from emerging markets), unlike other products which rely more on quality competitiveness and therefore are less dependent on exchange rate fluctuations (e.g. beverages, fuels, wearing apparel etc.).

Table 4 provides sector-specific models for the EU exports to Ukraine. Alternative specifications were used when it was necessary to treat minor multicollinearity.

Table 4. Regression models for growth of the EU exports to Ukraine

| Product group | b ₀ | b _{GDP_{UA}} | b _{GDP_{EU}} | b _{RRER} | R ² | F-test |
|---------------|-----------------------|-------------------------------|-------------------------------|---------------------------|----------------|----------|
| AP | 1.54/0.935 (1.96) | 0.783/0.852 (0.138)*** | 0.773/0.636 (0.346)** | 0.371/0.297 (0.162)** | 0.90/ 0.91 | 55.38*** |
| FLA | 2.03/2.19 (3.62) | 0.842/0.981 (0.176)*** | | 0.596/0.105 (0.257)** | 0.66/ 0.75 | 19.60*** |
| FLA | -2.45/-0.69 (3.29) | | 2.355/2.384 (0.374)*** | 1.312/1.182 (0.214)*** | 0.76/ 0.72 | 30.92*** |
| BT | 1.38/5.60 (8.19) | 0.842/0.861 (0.380)** | | | 0.19/ 0.27 | 4.91** |
| BT | -2.70/3.34 (7.56) | | 2.928/2.546 (0.871)*** | | 0.35/ 0.33 | 11.28*** |
| ARM | 4.73/2.74 (2.44)* | 0.698/0.752 (0.113)*** | | | 0.64/ 0.77 | 37.95*** |
| ARM | 4.76/3.17 (3.30) | | 1.382/1.436 (0.381)*** | | 0.38/ 0.40 | 13.12*** |
| OSF | 11.20/8.98 (6.86) | 0.974/1.027 (0.318)*** | | | 0.31/ 0.37 | 9.38*** |
| OIS | 8.18/2.70 (6.50) | 0.712/0.912 (0.302)** | | | 0.21/ 0.51 | 5.58** |
| OIS | 0.28/-1.45 (5.13) | | 2.374/2.441 (0.582)*** | 1.508/1.454 (0.334)*** | 0.60/ 0.71 | 14.86*** |

| | | | | | | |
|------------|--------------------------|----------------------------|----------------------------|----------------------------|---------------|----------|
| FUE | 4.78/7.79 (7.98) | 1.787/1.747 (0.370)*** | | | 0.53/ 0.57 | 23.33*** |
| CHP | 3.56/2.75 (1.87) | 0.434/0.654 (0.131)*** | 1.093/0.627 (0.330)*** | 0.806/0.361 (0.154)*** | 0.89/ 0.89 | 49.72*** |
| MPH | 7.58/4.34 (3.36) | 1.042/1.029 (0.156)*** | | | 0.68/ 0.79 | 44.83*** |
| TFY | 4.05/1.08 (2.09) * | 0.598/0.686 (0.097) *** | | | 0.65/ 0.79 | 38.32*** |
| FP | -1.35/-4.60 (3.48) | 0.859/0.974 (0.161) *** | | | 0.57/ 0.75 | 28.31*** |
| FP | -6.42/-7.69 (2.95) ** | | 2.302/2.537 (0.335) *** | 0.989/0.906 (0.192) *** | 0.75/ 0.75 | 29.91*** |
| MTE | 5.83/3.73 (3.48) | 1.248/1.262 (0.162)*** | | | 0.74/ 0.76 | 59.63*** |
| MTE | 2.11/0.78 (4.97) | | 2.509/2.714 (0.564)*** | 1.149/1.580 (0.323)*** | 0.57/ 0.66 | 13.11*** |
| OMA | 5.86/1.95 (4.65) | 1.014/1.208 (0.216) | | | 0.51/ 0.65 | 22.04*** |
| TSR | 3.61/-1.64 (5.30) | 1.103/1.143 (0.256)*** | | 0.784/0.842 (0.376)* | 0.61/ 0.67 | 15.71*** |
| RV | 11.01/9.66 (6.98) | 1.587/1.584 (0.323)*** | | | 0.53/ 0.53 | 24.12*** |

Notes. The coefficients for unweighted and weighted cases are separated with a slash (/). The significance according to t-and F-test is for unweighted cases: *** at $p < 0.01$, ** at $p < 0.05$, * at $p < 0.01$. Standard errors are in brackets.

Source: authors' calculations based on UNCTADStat (2020).

All the EU exports may be affected by the shrinking demand in Ukraine under quarantine. The exports of fuels and road vehicles are the most vulnerable. In most other industries the elasticity of exports to the Ukrainian GDP are closer to unity. And despite the results of our empirical analysis based on the historical data, we assume that exports of products for medical purposes and possibly IT-equipment may be the most stable under the current pandemic. Beverages and tobacco, agricultural raw materials, metal products and clothing traditionally were among the least affected exporting categories, although correction should be made for current downward changes in demand patterns for investment (metal products) and relatively durable goods (clothes) under the quarantine.

The effect of currency appreciation for food exports is robust only in the model with the EU GDP, while in a model with the importing country's GDP (Ukraine) it decreased to become miserable (shifting from price competitiveness to quality competitiveness). The effect of currency appreciation for exports of medicinal and pharmaceutical products turned out to be nonrobust too. The effect is significant in some specifications of models for ores, iron, steel or other metals; furniture and parts; and machinery and transport equipment. And it is definitely significant for chemical products, telecommunication and sound recording apparatus after controlling for



GDP in Ukraine. Therefore, these EU industries are the most vulnerable to losses in price competitiveness in case of devaluation of hryvnia.

The EU exports of machinery, metal products, furniture, beverages, tobacco and food may be the most disrupted on the supply-side, although the effect is significant mainly only if no control for the importing country's GDP is applied. Considering the difference in correlation coefficients for demand and supply, beverages and tobacco products are traditionally probably the most dependent exports on supply capacities. These exporting categories are less dependent on supply capacities in the EU (which have shrunk due to the coronavirus disease and the mitigation measures): vegetable oils, metal products, fuels, pharmaceutical products, wearing apparel, IT-equipment and road vehicles, although corrections for labour supply disruption should be made in comparison to historical trends as well as export restrictions for protective equipment.

If we account for both elasticities and product shares in the EU exports to Ukraine, the main sources of vulnerability may be the exports of:

- machinery and transport equipment in general and road vehicles in particular, and fuels due to the direct effect of the GDP contraction in Ukraine;
- machinery and transport equipment, and chemical products due to the real exchange rate trends;
- machinery and transport equipment, chemical products and food due to the contraction of the GDP in the EU and the disrupted labour supply.

5. Post-factum verification

According to State Statistics Service of Ukraine (2020), in 1st and 2nd quarter of 2020 Ukraine imported goods worth \$10.3 billion from the EU including \$270 million from Romania. In comparison to the same period in 2019 imports of goods from the EU decreased by 12.5%, from Romania by 7%.

Ukraine also imported services worth \$1.25 billion from the EU (20% of them were transport services, 15% royalty and other intellectual property charges, 13% telecommunication, computer and information services, 24% business services, 16% financial and insurance services) including \$12 million from Romania. Similarly, the services imports from the EU decreased by 24% (transport decreased by 34%, air transport by 58%, sea transport by 8%, travels by 66%, royalty and other intellectual property charges by 8%, financial services by 10%, business services by 22%, while the telecommunication, computer and information services increased by 9%). Services imports from Romania dropped by 50%.

According to Eurostat (2020), in March – July 2020 the EU-27 merchandise exports to Ukraine decreased by 12% (to the rest of the world by 17%). Ukrainian exports to the EU dropped even deeper by 21%. Therefore, despite the falling demand in Ukraine, the EU increased its 5-month merchandise trade balance from €2.1 to €2.6 billion.



The actual sectoral trends (see table 5) show that the EU exports of food, beverages and tobacco, animal and vegetable oils, fats and waxes to Ukraine proved to be the least affected.

Table 5. Growth of the EU exports in March – July 2020, %

| Products | To Ukraine | Extra-EU27 |
|---|-------------------|-------------------|
| Total - All products | -12 | -17 |
| SITC0_1 - Food, drinks and tobacco | 25 | 1 |
| SITC0 - Food and live animals | 23 | 6 |
| SITC1 - Beverages and tobacco | 33 | -14 |
| SITC2_4 - Raw materials | -9 | -13 |
| SITC2 - Crude materials, inedible, except fuels | -10 | -17 |
| SITC3 - Mineral fuels, lubricants and related materials | -36 | -50 |
| SITC33 - Petroleum, petroleum products and related materials | -37 | -62 |
| SITC4 - Animal and vegetable oils, fats and waxes | 0 | 16 |
| SITC5-8 - Manufactured goods | -13 | -17 |
| SITC5 - Chemicals and related products, n.e.s. | -6 | 3 |
| SITC6_8 - Other manufactured goods | -13 | -21 |
| SITC6 - Manufactured goods classified chiefly by material | -15 | -20 |
| SITC7 - Machinery and transport equipment | -18 | -24 |
| SITC8 - Miscellaneous manufactured articles | -10 | -22 |
| SITC9 - Commodities and transactions not classified elsewhere in the SITC | 13 | -9 |

Note: in comparison to the same period in 2019.

Source: authors' calculations based on Eurostat (2020).

The most severely affected ones were exports of fuels as well as machinery and transport equipment and some other manufactured goods. Adjusting for difference in depth of product classification (e.g. lack of data for exports of pharmaceutical products and IT equipment) and low vulnerability of chemical product exports (which can be explained by only minor devaluation of hryvnia until late summer 2020), we can conclude that in general the actual trends in bilateral exports proved efficiency of our modelling based approach to assess relative sector-specific vulnerability or resilience of the EU exports to Ukraine.

Conclusions

In recent years the EU and Ukraine improved the treatment for their bilateral foreign trade. But in 2020 the current COVID-19 pandemic became a major challenge for the global economy and obviously still affects international trade. Most countries experienced a GDP contraction at least in the 2nd quarter of 2020. It



became a shock both on the demand and supply side due to changes in consumption patterns and disruption of labour supply.

The EU exports to Ukraine became vulnerable to contraction of the importing and exporting economies as well as to real depreciation of hryvnia. The total imports of Ukraine from the rest of the world dropped by almost 15%. A mix of negative and positive factors resulted in only a mild devaluation of hryvnia, although the real devaluation specifically against the euro was 18% in March – August 2020. Its effect varied by industries because of the difference in price trends for specific consumer goods. On the supply side the EU had a drop in production of industrial goods by 15% (especially capital goods, durable consumer goods and medium-technology products) and services by 18%. Despite this, manufacture of pharmaceutical products, information service activities, computer programming, consultancy and related activities showed positive trends. In March – June 2020 both extra-EU27 and intra-EU27 merchandise trade decreased almost evenly (by 36% and 35%) without a trade diversion effect. Export authorization became a new sector specific barrier for the EU exports of personal protective equipment.

According to our modelling results based on the past data, the EU exports of fuels and road vehicles may be the most sensitive to changes in the Ukrainian GDP. The issue of price competitiveness in Ukraine under exchange rate fluctuations is important for the EU exports of chemical products, telecommunication equipment and some other goods. These EU sectors are the most interested in the economic and exchange rate stability in Ukraine. Exports of beverages and possibly some other industries are the most vulnerable under contraction of the EU as a supplying economy.

The most resilient EU export products under the shrinking demand in Ukraine may include beverages, tobacco and agricultural raw materials; under devaluation of hryvnia – medicinal and pharmaceutical products. Regardless the empirical results, we also assumed that the specific changes in the consumption behaviour under the quarantine may favour a relatively stable demand for food and some IT-equipment.

The actual available data for bilateral exports in March – July 2020 during the 1st wave of COVID-19 proved in general the modelling based approach to assess relative sector-specific vulnerability or resilience of the EU exports to Ukraine with certain reservations. The most severely affected ones were exports of fuels as well as machinery and transport equipment, while the EU exporters of food, drinks and tobacco managed even to increase their sales in Ukraine. In March – July 2020 EU-27 merchandise exports to Ukraine decreased by 12%, thus, despite the negative change under the COVID-19 pandemic these exports turned out to be more resilient than to the rest of the world. The EU was also able to increase its bilateral trade surplus in goods. The EU services exports to Ukraine (decrease by 24% in 1-2 quarters 2020 especially in travel and air transport services) were less resilient except for telecommunication, computer and information services.

Several policy recommendations may be provided. Macroeconomic risk assessment should consider both traditional sector-specific vulnerabilities to business



cycles and the new vulnerabilities related to changes in consumption preferences under new challenges such as pandemics. The business support measures under the COVID-19 crisis should contain sector-specific components too.

Relative resilience of the EU exports to Ukraine under the Association Agreement provides additional evidence in favour efficiency of this integration tool, although further research is necessary to check whether this conclusion can be generalized for other free trade areas. If the tariff elimination under the Deep and Comprehensive Free Trade Area is to be accelerated specific needs of the less resilient sectors of both parties should be considered.

Since some of the EU exports depend on the price competitiveness, larger devaluation of hryvnia should be avoided. Our previous research with similar methods also suggested that hryvnia devaluation would not provide benefits for Ukrainian exports to the EU too. Thus, subject to further pessimistic pandemic scenario, a reasonable financial assistance for macroeconomic stabilization in Ukraine may benefit both parties.

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Appendix 1. Correlations of factors with growth of the EU exports to Ukraine and their product structure in 2018

| Product group | GDP_{UA} | GDP_{EU} | RER | Share in $Expe_{EU,UA}$, % |
|--|------------|------------|---------|-----------------------------|
| All products (AP) | 0.93*** | 0.65*** | 0.37* | |
| Food and live animals (FLA) | 0.76*** | 0.55*** | 0.52** | 6.9 |
| Beverages and tobacco (BT) | 0.44** | 0.59*** | -0.12 | 1.6 |
| Agricultural raw materials (ARM) | 0.80*** | 0.62*** | 0.33 | 1.4 |
| Oil seeds and oleaginous fruits, animal and vegetable oils, fats and waxes (OSF) | 0.56*** | 0.39* | 0.23 | 0.9 |
| Ores, iron, steel or other metals (OIS) | 0.46** | 0.43** | 0.51** | 2.9 |
| Fuels (FUE) | 0.73*** | 0.29 | 0.30 | 7.2 |
| Chemical products (CHP) | 0.85*** | 0.55** | 0.56*** | 19.7 |
| - Medicinal and pharmaceutical products (MPH) | 0.83*** | 0.43** | 0.48** | 5.8 |
| Textile fibres, yarn, fabrics and clothing (TFY) | 0.80*** | 0.65*** | 0.27 | 5.4 |
| Furniture and parts (FP) | 0.76*** | 0.65*** | 0.40* | 0.7 |
| Machinery and transport equipment (MTE) | 0.86*** | 0.54** | 0.37* | 37.0 |
| - Office machines and automatic data processing machines (OMA) | 0.72*** | 0.49** | 0.22 | 1.5 |
| - Telecommunication and sound recording apparatus (TSR) | 0.73*** | 0.42* | 0.50** | 1.8 |
| - Road vehicles (RV) | 0.73*** | 0.30 | 0.39* | 8.6 |

Note: *** means significance (unweighted cases) at $p < 0.01$, ** at $p < 0.05$, * at $p < 0.01$.

Source: authors' calculations based on UNCTADStat (2020).

UNDERSTANDING THE INDIVIDUALS WHO ARE A PART OF TRANSNATIONAL ORGANISED CRIME – A KEY FACTOR FOR CREATING A SUCCESSFUL POLICY TO FIGHT AGAINST THIS KIND OF CRIMINALITY

Ancuța Elena FRANȚ*

Abstract

The background for this research is the alarming growth of transnational organised crime in contemporary world. We have found out that, while many studies focus on the meaning of organised crime and criminal activities, little research has been conducted on the analysis of the individuals who actually create the organisations which involve in transnational criminal activities. We consider this to be a flaw in the overall theoretical framework regarding the analysis of transnational organised crime. This is because understanding the reasons why individuals become a part of transnational organised crime may lead to finding potential alternatives for these individuals, so they eventually choose not to act as members of transnational organised crime. This is the reason why we focus this study on finding the reasons why ordinary people commit crimes as a part of organised criminal structures. Also, we aim at finding theoretical solutions for offering these people the possibility to choose other way of life than being a criminal offender. Our research is based on a systematic review of the literature existing on this topic and, also, on a critical analyse of the legislation which, at international and national level, tries to combat the phenomenon of transnational organised crime.

Keywords: transnational organised crime, preventing organised crime, sense of belonging, education, Iceland

Introduction

This paper focuses on a topic which has been poorly analysed in the scientific literature, namely the individuals who form organised crime (von Lampe, 2012; Robins, 2009).

As we will see below, researchers usually analyse organised crime as an independent entity, but this understanding of organised crime is certainly not very

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useful when trying to dismantle the structures which sustain organised crime. If we want to find appropriate means to fight against organised crime, we must acknowledge the fact that organised crime cannot exist without the individual contributions of its members. It results that, if there were no individuals willing to become part of local or transnational organised crime, organised crime would cease to exist. Of course, this is a utopian view, but we must aim high in order to be sure that at least some effects are produced. Our approach is consistent with researches which highlight that human security (which is severely threatened by transnational organised crime) can only be achieved if we focus on each person (Ştefanachi, 2017). In a similar manner, preventing transnational organised crime must also focus on the individuals who are part of such criminal structures. It seems that, wherever we look at the current issues of our society, it becomes clear that solutions can be found only if we take into account and if we value each individual.

In this paper we will carry out a scientific quest aimed at finding whether our assumption is correct, namely that understanding the individuals who are a part of transnational organised crime can lead to efficient preventive measures. In order to fulfil our goal, first we will undergo a scientific literature review and, after that, we will seek for examples of successful policies against transnational organised crime, based on a proper understanding of individual's needs and feelings.

1. The relevance of analysing the individuals who are part of transnational organised crime

As we look towards the scientific literature addressing the issue of transnational criminality, we observe that, in what regards other forms of criminality, like terrorism, researchers have carried out a deepened analysis on the role of individuals. However, regarding the transnational organised crime, it was not given the same attention to the individual (von Lampe, 2012). We must highlight that transnational organised crime and terrorism are two different kind of criminal activities, although they have common traits (Mullins and Wither, 2016).

We must specify that, by saying that not enough attention has been given to the individuals in analysing transnational organised crime, we do not say that the individuals have been *ignored* as part of transnational organised crime. Actually, a considerably large part of the scientific literature referring to transnational organised crime takes into account the relationships between members, which are at the core of transnational organised criminal structures. What we mean to say is that little attention was paid to understanding the personal reasons which sit behind someone's resolution to become a part of transnational organised crime (von Lampe, 2012).

As we will see below, it is difficult to obtain information directly linked to the individuals who are a part of transnational organised crime. Because first-hand information is scarce, we must infer information about these individuals from other information, regarding the criminal structure as a whole, or the overall background in what regards the social, economic, educational and political circumstances.



Anyway, no matter how hard it is to carry out a research approaching the individual who is a part of transnational organised crime, it is an activity which is worthy to be carried out. This is because the individuals and the relations between them are actually the core of transnational organised crime. If we properly understand the reasons which motivate the individuals to become part of criminal structures, we can search for appropriate methods to compensate those reasons, and this can lead to prevent someone to become part of transnational organised crime. This is a logical assumption, based on the fact that in every particular case when a person decides to adhere to transnational organised crime there must be a reason which sits at the foundation of that person's decision.

1.1. The difficulties existing in analysing the individuals who form transnational organised crime

The lack of a profound analysis on individuals who form transnational organised crime is partially based on the difficulties existing for the researchers to get in touch with the members of transnational organised crime. It is undeniable that getting in touch with the active members of transnational organised crime would put researchers at risk. Moreover, the members of organised crime would put themselves or/and their families at high risk if they tell information about the criminal structure. Also, it is unlikely that active members are willing to offer valid information about themselves and about the criminal structure, due to the confidentiality obligations which exist within organised crime (von Lampe and Johansen, 2004). Given this situation, usually the cases when researchers can have a conversation with persons involved in transnational organised crime refer to *former members* of transnational organised crime, who were convicted for criminal activities performed within the criminal organisation (von Lampe, 2012). Still, even if the person was convicted, even if the criminal structure is no longer active, this does not mean that former members are willing to share their experiences. This could be because there is still a risk of being sanctioned for telling the secrets of the former organisation or simply because of the personal choice of being faithful to the criminal structure, even if this structure can no longer involve in illegal activities.

1.2. Analysing the individuals involved in terrorism vs. analysing individuals involved in transnational organised crime. A short comparison

At a first glance, we notice that the same difficulties referring to obtaining information about persons involved in transnational organised crime exist in analysing the individuals who commit terrorist attacks; still, there are some specific features which facilitate the acquiring of knowledge regarding persons involved in terrorism, as we will further show. These features may explain why there are more scientific studies which analyse the individuals involved in terrorism (von Lampe, 2012).



First, it is easier to analyse the psychological motivations which determine a person to commit a terrorist attack, as they generally rely on ideological grounds. This analysis can be efficiently performed even without a direct contact with the person who commits the terrorist act, by studying the background of the individual's evolution (for example, the political, social or religious context of the country where the individual has lived).

Second, sometimes terrorist attacks are committed by persons who are not part of a bigger terrorist structure. In these cases, people act on their own will. This means that, when such a person is brought under the custody of the authorities, before or after a conviction for a terrorist act or for an attempt to commit such an act, he or she does not fear for consequences if telling information. This information can refer to the illegal act and/or about the persons themselves. Even more, usually a terrorist attacker wants the world to know the reasons why he or she committed the attack, as this is regarded as a way to spread the knowledge about the ideology which sits as the core of the terrorist behaviour.

The situations presented above contrast with the situation of a person who is a part of what is generally known as transnational organised crime. Obviously, a person who is a part of such a criminal structure does not act on his or her own will, but according to a plan which applies to the whole organisation. Offering information means creating a breach in this plan, and this could attract terrible consequences for the traitor. This is one of the most important reasons why keeping the secret regarding all aspects of the criminal structure, including about their own person, is usually a vital obligation for members of transnational organised crime.

2. General traits of the individuals and of the relations between the individuals who form transnational organised crime

In our attempt to draw a sketch of a person who is likely to become a part of transnational organised crime, it is important to notice that, contrary to what we may think, the relations established between members of transnational organised crime are not always oriented towards making profit by illegal means. Often, persons involved in organized crime are connected through intricate relationships, which are even based on feelings of attachment and care for their fellow offenders. Studies show that, inside different forms of organised crime, there is a true social network, based on mutual respect between members (von Lampe, 2016).

The existence of such complex relationships between individuals who are a part of transnational organised crime leads us to the conclusion that at least *some* forms of organised crime actually represent well-defined societies, where individuals can find social fulfilment, in the same way that a person can find social fulfilment in the what we may call the *normal* society (meaning the society where people do not indulge in illegal deeds). Such a conclusion offers us a better understanding of the reasons which may keep a person inside a criminal structure, as we will further present.



It is important to highlight the fact that, if we were to summarize in few words the primary needs fulfilled by being a part of transnational organised crime, this would be a certain *sense of belonging* felt by members (von Lampe, 2016). This sense of belonging relies on the fact that usually members of organised crime see that they and fellow members have some common traits, which are, at the same time, different than those of the persons who are not part of a criminal structure (or are members of a different criminal structure). This consciousness about the common features that keeps together the members is obvious when we think of criminal structures like Outlaw Bikers or Outlaw Motorcycles (Lauchs and Gilbert, 2017). However, this kind of consciousness exists also on structures which do not rely on a specific activity commonly performed by all of its members. In a simple way of understanding criminal organisations, maybe the very fact that members are involved in illegal activities is enough to create the feeling that members are connected and that they belong to a certain community. As psychologists show that the sense of belonging is a basic human need (Allen and Kern, 2019), we can understand that the quest for fulfilling this need is an important reason which explains why some people choose to adhere to criminal organisations.

2.1. The relationships existing inside criminal structures based on family ties

As reality and scientific literature shows, in some cases, organised crime is based on family ties. Actually, organised crime which grows on family relations is emphasized as a distinct and prominent category of organized crime (Paoli, 2014). Some of the most renowned criminal structures, like Cosa Nostra, rely on family relationships (Paoli, 2004; Sergi, 2017). It is obvious that, in this kind of organisations, the pre-existing family relations greatly enhance the feelings of belonging which typically develop inside a criminal structure.

The criminal structures based on family relations also have some specific features which reflect on the individuals' decisions. Often, becoming part of the criminal structure is perceived as an *obligation* for the members of the founding family. Refusing to become a part of the criminal structure is not only seen as disrespectful for the organisation, but also for the family itself. The consequences of a refusal can have a devastating impact, as he or she would no longer benefit from the family's support. For a person of a young age, who cannot obtain by himself or herself the means of existence, becoming a part of the family's criminal organisation can be the only possible choice.

Also, the effects of being part of a criminal structure based on family ties are specific when we think of a member of the family who wants to *leave* the organisation. Although it is hard in all cases, leaving a criminal structure formed by one's own family is considerable harder than in other situations. Still, some may argue that when a member of the family decides to leave the criminal organisation, it is possible that it is a lower risk that he or she to be killed or severely injured, because of the affection which typically exists between the members of a family, even when the family is involved in criminal activities. However, this is not always



true, as the rules which normally apply in a family are perverted when the family is transformed in a criminal structure. Also, the previously reasoning applies, in what concerns the fact that, if a person leaves such a criminal organisation, he or she would not have the support of the family; and it is known that family's support is extremely important in critical situations, and leaving a criminal organisation certainly is a critical point.

In what concerns preventing the adherence of a member to a criminal structure based on his or her own family, it is obviously very hard to take efficient measures in order to prevent such an adherence. As we have shown above, becoming a member of such a structure is often seen as compulsory. Often, the prevention, in these cases, only depends on the determination of a member of the family to stay out of the illegal organisation, assuming the associated risks.

2.2. The relationships existing inside criminal structures which do not rely on family ties

Inside the criminal structures which do not rely on family ties there is certainly a shift in the approach concerning the relations between members. Here, the relations between members usually do not pre-exist. The relationships between the members of the criminal organisation develop only *after* a person becomes a member of the structure.

This has important consequences in what regards the reasons which determine a person to adhere to organised crime. As we have seen, when the criminal structure has a family at its core, it is almost an obligation for the family members to involve in the illegal activities committed by the family's criminal organisation. But, when a person does not have such 'family obligations', it is important to understand the reasons which motivate him or her to become a criminal offender inside a criminal organisation.

As we try to understand these reasons, we go back to what we have highlighted before, namely *the basic need of belonging*, which often is an important reason which motivates a person to become part of organised crime. In other words, the promise of the fulfilment of this need becomes a mean of recruitment, as the potential member is lured with the somehow idealistic image of personal fulfilment as a consequence of becoming part of organised crime.

If it is hard to find proper means to prevent the adherence to family-based criminal groups of members of those families, it seems easier to find methods to prevent the adherence to criminal organisations of persons who do not have previous connections with the illegal structure. At least this is the theoretical approach, but, as we will see in the following lines, things are not as simple as they might appear.

In addition to what we have stated before, it is important to mention that the adherence to a criminal organisation cannot be simply reduced to an act of searching the fulfilment of the need of belonging. Usually, this quest for social bonding overlaps on other basic needs. Often, poverty is a key factor which drives a person



to taking the decision to become member of an illegal criminal structure. It infers that finding proper ways to fight poverty can also be an efficient mean to fight against transnational organised crime.

3. Possible measures to prevent the adherence to transnational organised crime.

As we have seen above, it looks easier to prevent the adherence of a person to criminal structures which do not rely on family relationships. This is because, when a person adheres to a group without having a prior obligation, he or she are often looking for fulfilment of their social need to be a part of a group, to connect with other persons, thus achieving the sense of belonging. This leads us to the following question: would these individuals still want to adhere to organised crime if their social bonding needs were satisfied in other ways? In what follows, we will try to find an answer to this question.

Before analysing the possibilities, we must point out that, in our view, the answer is two-fold. First, we will analyse the situation of those persons who would not become part of organised crime if he or she had an alternative. Second, we will analyse those cases when people choose to become part of organised crime despite having an alternative.

3.1. Offering a viable alternative to becoming a member of organised crime - a possible mean of prevention. The Icelandic model

Some persons who adhere to organised crime would certainly not become members of such structures if they had an alternative for fulfilment of their basic needs. By *basic needs* we do not refer only to the basic need of belonging, but also to other basic needs, among which the need to obtain the means for a decent life is highlighted. It is understood that people who have a decent job, which provides them enough economic power for a decent life, usually do not get involved in illegal activities, alone or inside criminal structures. If the economical good situation is accompanied by a supporting family and satisfying social connections, the reasons which would motivate a person to adhere to a criminal structure tend to nonexistence.

This has important consequences in what regards the prevention of adherence to criminal structures, because it shows that there is a good chance that a person would not adhere to a criminal structure, if he or she had other viable alternatives for fulfilment. The problem is, however, to be able to provide these viable alternatives.

It is important to notice that in countries with a high living standard (like Scandinavian countries), organised crime is significantly lower than in other countries, which struggle with economical and social issues (Korsell *et al.*, 2011). So, it seems that the access to a satisfying legal income is important in reducing people's interest in engaging in illegal activities. In this context, we must also mention that, indeed, Scandinavian countries do seem to have a specific way to deal with criminality, while having an overall specific legal culture (Dariescu, 2019). Anyway, we do not want to give the impression that in Scandinavian countries



organised crime is inexistent. Actually, organised crime exists in Scandinavian countries and the level is rising (Johnson, 2020). Much of the recently developed organised crime in Scandinavian countries is related to immigrants (Skardhamar *et al.*, 2014). However, there is a sort of organised crime in Scandinavian countries (noticeable, in Sweden), which typically is not connected with immigrants, the so-called Outlaw Motorcycle Clubs (Rostami and Mondani, 2019). But, even with the rise of organised forms of criminality, European Nordic countries still exhibit a lower rate of organised criminal structures, while being ranked among the countries with the highest life standards¹. We believe that the values of these two parameters are not random and that it must be a connection between the high life standard and the low rate of organised crime.

Following our reasoning presented above, it results that states are responsible for taking efficient measures in order to prevent organised crime, “simply” by the way they organise their economical system. We used quotes for the word “simply”, because we wanted to highlight the fact that achieving a strong economy seems to be very hard. Still, once achieving a strong economic system, this proves to be the solution for dealing with many issues, including criminality.

It is important to notice that a high Gross Domestic Product (GDP) does not necessarily indicate that all the citizens have decent living conditions (Kapoor and Debroy, 2019). This is, for example, the case of United States of America; despite having high GDP, the country has a high rate of poor people and, consequently, high crime rates, including organised crime (Hoynes *et al.* 2006). This signifies the fact that, in order to ensure high living standards for its citizens, a country must succeed in creating legal opportunities for its citizens to gain enough income, in order to afford a decent life. If there are citizens who do not gain enough, but the country’s GDP is high, this only signifies that the country experiences high disparities between social classes. In other words, there is a big gap between rich people and poor people, and this is a recipe for the emergence of organised crime and, further, for transnational organised crime.

So, it seems that the states’ responsibility does not only infer becoming rich as a whole structure. Moreover, a successful state, one which is able to provide fulfilment for the majority of its citizens, is a state whose wealth is the result of the jointed wealth of its citizens. In order to make our assertion clearer, we compare the overall wealth of a state with a series electrical circuit. In a series electrical circuit, if one light bulb burns out, the other light bulbs will not glow, so the whole system falls down. In a similar manner, in an idealistic view, if one citizen cannot have the means to live a decent life, the state cannot be called a wealthy state, no matter how wealthy other citizens may be. As I have already said, this is an idealistic view; it is utopian to think that all the citizens of a state might have the proper means for a decent life and that is not even one single person who struggles with financial issues

¹ NUMBEO (2020), Crime Index by Country 2020 Mid-Year (retrieved from https://www.numbeo.com/crime/rankings_by_country.jsp).

(even if I do not think it is impossible, but this topic exceeds the present paper). But at least states must aim at a result as close as possible to this idealistic view.

However, reality shows that it is considerable hard for a state to provide to all of its citizens opportunities for gaining a satisfying amount of money. Still, succeeding in ensuring the welfare of the citizens is so important, that states must certainly pay great attention to achieving this goal. The importance of having satisfied citizens in what concerns their wages is far more important than in what concerns strictly the purchasing power. Having people happy with their income from legal jobs also keeps them away from the temptation of becoming members of organised crime, be it at national or transnational level.

But what if the individual has an unfulfilled need of belonging to a certain group? Is a state able to provide him or her a viable alternative, so that this individual does not seek the fulfilment of this need inside a criminal structure? The answer to this question seems to be difficult to obtain. If money is what an individual lacks, state can look for means to offer him or her a legal source for obtaining money, as money can be perceived as an objective goal. Contrary, the feeling of belonging to a certain social environment is a completely different issue, and is subjective in its nature. Sometimes it can be quantified, but, sometimes, it cannot be quantified, as it differs greatly from individual to individual.

Although it may seem an impossible mission for a state to interfere in the intimate dimension of an individual's feelings, some states have been brave enough to venture in this area. In the following lines we will present the example which Iceland can give to other countries in what regards this subject.

In Iceland, state has developed a programme designed to prevent teenagers from getting involved in potentially dangerous activities, like drinking alcohol, taking drugs, or even associating in criminal groups. The programme is based on the idea of offering teenagers an alternative to these unhealthy and/or illegal behaviours. These alternatives consist mainly in spending time in recreational activities like sport, dance, music or other forms of art, which can be performed in various specific clubs. State supports families with low income, by giving them financial help in order to offer their children the possibility to spend time in recreational activities. The programme does not stop here; it is backed up by a series of legal provisions which ban the selling of tobacco and alcohol to underage persons. Even more, it is illegal for a person aged between 13 and 16 years old to stay outside after 10 PM in winter and after midnight in summer. The programme massively relies on the help of the parents, who are encouraged to spend as much time as possible with their children, to openly speak to their children about sensitive issues and to know the friends whom their children spend time with. Also, parents play an important role in keeping their children at home at night, as we have seen that the law provides (Young, 2017).

This Icelandic programme proved to be extremely efficient. From 1998 to 2016, the percentage of persons aged 15 to 16 years old who consume alcohol dropped from 42% to 5%, the percentage of those who have used cannabis at least



once dropped from 17% to 7%, and of those who smoke every day dropped from 23% to 3% (Young, 2017).

It is also important to mention that, before resorting to this programme, Iceland had tried various other methods, but with very little to no results. Mainly, these methods which proved to be inefficient relied on presenting information to the teenagers about the negative consequences of drinking alcohol, taking drugs, or committing crimes (Young, 2017). It was only the offering of a viable alternative that worked.

At the same time, we must specify that crime rate in Iceland (including organised crime) is very low, even for the general standards of Nordic countries².

As we can see from this successful Icelandic programme, a state can take effective measures in order to prevent the involvement of its citizens in dangerous and illegal activities. We conclude that there are 2 conditions to be fulfilled in order for such a programme to be effective. First, the approach must be holistic, meaning that all the factors must be taken into account. Second, the alternative must be tangible and at hand, in order to be viable.

Some may argue that this kind of programme can only be applied to children and teenagers, thus being useless to refer to it as an example for taking measures in order to prevent adults from involving in illegal activities. And, indeed, we cannot deny that, in normal circumstances, state can neither compel adults to participate in recreational activities, nor to prohibit them to get outside at night. But, thinking this way, we are looking in the wrong direction, meaning we are looking only at the present moment, while we should look into the future. In what concerns *preventing* local and transnational organised crime, it is very important to look at the big picture, and this transcends the present-day. As organised crime is an undeniable reality of the present, the only temporal dimension where we should hope for its diminishing is the future. And, if we think this way, it appears greatly important to educate young people not to adhere to criminal organisations. As we have seen in the Icelandic programme, a great stress has been put on including the teenagers in social groups, in order to give them the feeling of belonging to a community. And, as we have presented above, often the motive that urges a person to become part of a criminal group is the need of belonging to a group which accepts the individual the way he or she is. As psychologists argue, trauma effects (as exacerbated feelings of loneliness are) often develop in childhood and are maintained through adulthood. Even more, it is important to highlight the fact that the concept of “trauma” is considered, nowadays, to be a very broad one (McNally, 2007). This means that the concept of “trauma” does not indicate only an extremely dangerous and/or a violent situation, which puts under serious threat the life or the health of a person, or a tragic event, like the death of a relative. It results that the concept of “trauma”, beyond some

² OSAC (Overseas Security Advisory Council, U.S. Department of State), (2019), Iceland 2019 Crime & Safety Report (retrieved from <https://www.osac.gov/Country/Iceland/Content/Detail/Report/2d8cdd85-eb54-4ec7-828a-15f4aeb18469>).

general-accepted meanings, has a subjectively-determined content. For example, if a child's classmates often joke about his or her physical appearance, or about his or her dressing style, this can lead to the development of some kind of trauma. This trauma can consist in having a deep feeling of estrangement from others. Anyway, if children are given an efficient way to feel that they belong to a certain group, they are less likely to develop traumas concerning this issue. Of course, life does not always offer us the possibility to be inside a certain group. Sometimes, we must spend time alone, with no friends around. An adult who did not develop childhood traumas about the feeling of belonging will have a healthy imagine about what it means to belong to a certain community, and, equally important, will know that there are some kind of groups he or she must stay away from, like criminal groups are.

Basically, this is one of the main outcomes of programmes such as the Icelandic one: growing up psychically healthy adults. Thus, Iceland shows us that people can be educated from their young ages not to get involved in dangerous and illegal activities, therefore not to become part of local or transnational organised crime. This education which has been achieved will be passed on, to future generations. It looks like a successful way to prevent organised crime, at local and transnational level.

Nevertheless, we must not forget that the success of the Icelandic programme has been possible to achieve because the whole society has been mobilized in order to reach the objective, and, also, because strong financial support has been provided by the state. Maybe the efficiency of this model has been favoured by specific circumstances, like the relatively small population of Iceland and by the high life standards which exist there. Still, above all possible discussions, a certain fact remains: that a state succeeded in preventing young people from involving in criminal activities by education, legal provisions and financial support.

3.2. Preventing individuals from becoming part of organised crime when they cannot be given a viable alternative

As we have pointed out above, it seems that offering people a real alternative to becoming part of organised crime can be an efficient measure to prevent this kind of criminality. However, this only works for individuals who are searching for a kind of fulfilment whose content is foreseeable. If a person does not gain enough money, it is reasonable to think that having a legal source for a satisfying amount of money would prevent such a person from becoming part of organised crime. If a person is seeking for the feeling of belonging to a certain group, it is reasonable to think that teaching him or her to search for this feeling in groups which are not involved in criminal acts is, also, a mean to prevent organised crime.

But what if a person has enough money and, also, has the opportunity to find the sense of belonging in groups which are not involved in criminal activities, but, still, he or she becomes member of organised crime? What viable alternative could be found in such situations?



Reality shows that, sometimes, individuals who grow up in wealthy families get involved in organised crime. Looking from outside, this situation may look very hard to understand. The main issue in these situations is, usually, not related to money, but to other personal fulfilments which can be provided by becoming a part of organised crime. The discussion is, thus, moved on the ground of Psychology. As I have already said, it is very hard to quantify personal fulfilment; what brings happiness to an individual does not necessarily make another individual happy. In the following lines we will issue some hypothesis about possible reasons which motivate some persons to become members of organised crime, although, apparently, on general standards, these persons would not have reasons to become criminal perpetrators.

First, it is worthy to notice that, no matter the context they came from, usually people become part of criminal structures at a young age (as teenagers or young adults). As we analyse people who do not fit to the general image of persons who become members of organised crime, we must necessary direct our attention towards young people who do not fit to this general image (Kleemans and van Koppen, 2020, p. 391).

Psychologists show that young people, in general, and adolescent, in particular, have a specific psychical structure. One of the causes is that the physical structure of the brain of adolescents becomes fully matured only in the early 20's of a person. This means that adolescents are in a continuous developing process, which is reflected in their behaviour. This is why many adolescents' behaviour exhibit impulsiveness, taking risks, rapidly-shifting emotions, and a lack of concern about the consequences of the actions committed (Guy, 2015).

These psychological features explain why some adolescents seem to step out of the general frame we have drawn up upon the reasons which motivate a person to become member of a criminal structure. Still, as we have seen in Iceland, these specific teenage traits can be controlled through a programme especially designed to refrain young people from giving in to antisocial or dangerous behaviour. However, despite the undeniable great success of the Icelandic programme, the success (at least until now), is not total, because, as we have also seen above, there is still some percentage of adolescents who drink alcohol, take drugs or smoke, although the percentage of teenagers doing so is very low. The fact that we cannot prevent *all* adolescents from doing dangerous activities, despite the huge social efforts, is an argument to understand that there are people who cannot be given a reasonable viable alternative to becoming a wrongdoer; this kind of people will commit antisocial deeds in spite of having all the premises not to do so.

It results that, when adolescents become members of organised crime, it is possible that the reasons which lie underneath their decision to be found in their own unique psychical structure, defying any logical explanation. And, when this happens, unfortunately there are no viable alternatives to be offered. This is, rather, a question of personal choice.



However, we should not be discouraged by this finding. Going further on our analysis, we cannot ignore the fact that taking the decision to become part of organised crime must have some special circumstances which favoured its appearance, even for the changeable brain of a teenager. It is hard to believe that such a decision comes out of nowhere. It is possible that the adolescent taking such a radical decision to have been in contact with people involved in organised crime, for example because he or she has bought drugs, and, subsequently, has taken drugs. This means that preventing teenagers from becoming drug consumers, beyond being a measure to protect their health, may be a way to prevent their adherence to organised crime who deal with drug trafficking. Also, it is possible that the adolescent becomes friend with a person already involved in organised crime, who convinces him or her to become member of the same criminal organisation. In this context, it proves to be very important that the parents know more about their children's entourage and help their children to keep the distance from persons who have a negative effect on them; this can usually work only if parents use a friendly manner to approach their children.

We conclude that, even if a person's decision to become part of transnational organised crime is hard to explain, we can still identify some circumstances which greatly influenced the person in taking that decision. If we can find means to prevent the occurrence of those circumstances, we might have a chance to prevent the individual to adhere to organised crime.

Conclusions

Our scientific quest has led us to understand that, in search for methods to prevent transnational organised crime, we must direct our attention to the basic unit of a criminal structure, namely the individual. If we find efficient means to prevent the adherence of one person to organised crime, this, eventually, can lead to preventing transnational organised crime itself. Preventing a person from becoming part of transnational organised crime is not an easy task. Often, people adhere to organised crime because they search the fulfilment of a personal need, like financial accomplishment or the fulfilment of the need of belonging. In such cases, when we can identify the reasons, states can provide a viable alternative, like the opportunity to have a legal job or educating teenagers to find the sense of belonging in groups which are not related to organised crime. However, there are situations when we cannot identify the motives that urge a person to become member of a criminal structure; in such cases, all we can do is to try to influence the circumstances which may have a role in determining a person to involve in criminal activities within organised crime. In all situations, if states are searching for efficient methods to prevent transnational organised crime, they must embrace a holistic vision. This means that they must understand that organised crime is intricately linked to the well-being and to the educational level of their citizens. If states adopt laws against organised crime, while understanding organised crime *only* as a whole entity, these laws cannot have the desired effect. At the same time, legal measures which aim to



offer to each individual a better life and a better education are also provisions which can prevent transnational organised crime.

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THE EU'S ROLE IN THE FIELD OF INTERNATIONAL COOPERATION AND DEVELOPMENT. PAYER OR PLAYER IN ITS NEIGHBOURHOOD AND BEYOND.

George-Mihael MANEA*

Abstract

The European Union is a global actor in the development sector, together with the United Nations and the World Bank, trying to fill the gaps of the Millennium Development Goals and to achieve the Sustainable Development Goals by 2030. By being engaged in political dialogues and development activities, the EU can be seen at the same time as a player and/or as a payer. The research goal of this paper is to understand where the EU seats at the table: payer – as Member States, under the EU umbrella, accompany the developing countries on various projects and programmes financed through different instruments and schemes, and player – as an international organisation which works in synergy with the other international partners.

Keywords: EU, development, payer, player, neighbourhood

Introduction

The central aim of this paper is to examine the European Union's (EU) foreign policy in the field of development, during the transition process from the Millennium Development Goals (MDG, 2000-2015) towards the Sustainable Development Goals (SDG, 2015-2030), with a particular focus on the EU's strategy to engage with the partners from its neighbourhood.

The European Neighbourhood Policy (ENP) represents a broad subject of analysis in terms of region-building, regional integration processes and practical cooperation. At the same time, it is the main driver of the neighbourhood development process and it is spread through different channels (i.e. either at political or economic level). Moreover, the neighbourhood policy established a pretty strong feature of the EU's foreign policy and thus the strong feature in the overall security architecture. The EU's multinational structure makes it difficult for individual countries to ignore their own domestic needs and stand together behind a joint development policy.

The EU's multinational structure makes it difficult for individual countries to ignore their own domestic needs and stand together behind a joint development

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policy. By being engaged in political dialogues and development activities, the EU is trying to bring prosperity of the partner countries (especially in its neighbourhood), to allow them to be strong enough to make future decisions for themselves without any pressure. At this moment, the EU's involvement can be seen at the same time as a player and as a payer. From this point of view, this paper will seek to answer at two important research questions: *"To what extent has the EU been able to innovate in face of challenges from various cross-cutting areas, as a real player would?"* and *"In its capacity as a payer, are the EU investments wasted in stagnation?"*.

It is important to highlight the importance of this paper, as the topic raises the issue of how EU and its Member States are adapting and transforming their methods of assistance to meet new challenges, changing understandings, and expanding opportunities. Furthermore, the EU has a role of liaison recognised by local and international institutions, being also involved in advocacy and various dossiers of public and social interest. These are actions taken not by a payer merely seeking to remain relevant, but by a resourceful player that is clearly in a leadership role.

In terms of methodology, this paper is mainly based on qualitative research, ranging from books to articles, from official documents to interviews. Thus, the methodology consists on making a critical assessment of the existing literature on the topic, expose, explore and fill the existing gaps with information acquired from a group of experts that agreed to be interviewed¹. Through the interviews that have been taken, the aim was to give voice to the key players involved in the development process and their viewpoints regarding the EU's role on the ground, including representatives from international organisations (i.e.: the European External Action Service, the Commission's Directorate-General for International Cooperation and Development, the European Parliament, the United Nations Development Programme), international NGOs (i.e.: World Vision International) or local actors (i.e.: Civil Society House, ROPAGA Network).

In terms of structure, this paper will start with some preliminary considerations regarding the literature review related to the EU's policy on neighbourhood and development, followed by two more chapters on "Actorness as an Open Door for Development" and "Perception on the EU's Plans and Actions for Future" where we will analyse the coherence, effectiveness and visibility of the EU framework adapted to local needs and circumstances through projects, programmes, technical assistance and sector-wide approach. The conclusion will highlight if the EU should be considered as a payer and/or a player, as well as its *modus vivendi* and *modus operandi* in terms of engagement with the partners from its neighbourhood.

¹ The profiles of the persons that have been interviewed are detailed within the guiding protocol interview at the end of the paper. As well, we agreed to keep their names anonymous and they will be mentioned as "subjects".



1. Preliminary considerations

The EU's foreign policy portrays a variety of fields, covering many geographical regions across the globe, where the EU has to deal both with its involvement, and its perception. However, while the EU is in search of its coherence, one of the biggest challenges will be to promote a new strategic approach vis-à-vis its neighbours and partners.

As we look on the EU's role across its neighbourhood, we can see that it is perceived differently depending on the region. It can be considered a payer if we refer to the development system concerning cross-cutting sectors, but it can also be considered a player if we take into account the political system with different development agendas². On the same note, the EU can be perceived in some regions as a payer, for instance in Eastern and Southern Africa, these countries tend to put the EU on the same ground with China and other partners in order to try to obtain the best out of each partner. In other regions like Sahel, Horn of Africa, Western Africa, the EU is considered more as a player, as well as in Northern Africa with a different degree because of the neighbourhood dimension³.

At the same time, the EU neighbourhood policy represents a “model of regional cooperation and advanced multilateralism” (Ratka and Spaier, 2012, p.42) that serves to safeguard the Union's interests (security related, economical or whatsoever strategic nature). Moreover, the ENP is a “step-by-step approach” (Lanon, 2012, p.63) designed to “concrete progress demonstrating shared values and effective implementation of political, economic and institutional reforms” (European Commission *et al.*, 2003, p.16). From this point of view, the ENP aims to strengthen multi-level development through the implementation of certain projects, programmes and instruments in a region concerned, an action carried out both at bilateral and multilateral level. Thus, the EU is trying to promote its soft security approach, through the neighbourhood policy, and to export its values, its model of integration and its standards.

While official aid is often the most recognised channel of assistance, the promotion of development can and should go much further. Some scholars consider that targeting specific issues through narrow programmes is not the type of investment that will truly help the people; instead, foreign policy itself should strive for long term comprehensive growth (Gerhardt, 2010). Development also encompasses aspects of classic foreign and security policy, as these can have decisive effects on the people and governments from developing countries (Ganzle *et al.*, 2012, pp. 2-5). Thus, the EU is also considered “as a major actor in the international arena, a significant provider of aid and development assistance to the

² Subject 1, representative of the World Vision International, interview held on February 23, 2017, Brussels, Belgium.

³ Subject 2, representative of the European External Action Service, Division of Development Cooperation Coordination, interview held on February 23, 2017, Brussels, Belgium.

countries of the developing world, and with a growing involvement in global development policymaking” (Ganzle *et al.*, 2012, p. 227).

This nuanced understanding has recently become recognised by many aid-giving countries and has brought into discussion a new approach such as the Policy Coherence for Development. This policy tool seeks to include the intricate realities of development by extending beyond economic considerations and incorporating social, political and environmental dimensions (Gavas, 2007, p. 187). The EU’s relevance and global standing on development depends on its ability to adopt such approaches, which is further complicated by the Union’s supranational nature.

The EU is acting both on short and long term, dealing with humanitarian aid for the immediate needs of the community, for example following conflicts, natural and/or man-made disasters: “civil preparedness is required in order to increase the local, regional and national resilience for natural catastrophes and/or man-made disasters. Strategic approaches and policy development, information and public campaigns, table top and field exercises, trainings, as well as the use of technology and digital applications, all of these are essential tools that bring added value in terms of risk perception among the population” (Manea, 2019, p. 52).

The EU’s development policy involves, in a large part of it, aid and technical assistance to both its neighbours and developing countries. It provides not only “the institutional, regulatory and normative anchors of the process of bringing the neighbours closer to the EU” (Ratka and Spaiser, 2012, p. 69), but also “coordinating development process, at different levels, such as economic, political and social” (Tindale, 2013, p.1). Moreover, “multi-lateral governance [and] preferences for soft development policies and pro-EU attitudes” (Baldersheim *et al.*, 2011, p. 2) put trade at the core of each negotiation process and regional integration.

Based on these preliminary considerations, the objective of this paper is to further develop the perception of the EU’s engagement on the ground (payer vs. player), by analysing its tools and channels, but also taking into account the opinion of the experts that have been interviewed.

2. Actorness as an Open Door for Development

The relationship between Europe and Africa is certainly evolving, remaining complex on all perspectives. Stability and security in Africa has also an effect on the stability and security of most of the European countries. For decades, the international community has sought to promote socio-economic development in an attempt to alleviate the incredibly salient problems of global poverty and inequality.

From its very early years, the EU has incorporated assistance into its core values – thereby making it a historically dependable participant for the cause of development. Because “development and security issues are interdependent” (Gabriel, 2016), Europeans have long accepted the principle that peace in under-developed and developing countries “also means peace for Europe” (Gabriel, 2016). Thus, investing in the improvement of the human condition throughout the world, while noble, also carries certain levels of self-interested security benefits, as societal



strength can counteract feelings of alienation conducive to conflict and instability (Gavas, 2007, pp. 186-187).

The new millennium carried additional opportunities for the EU to reassert its position. In 2000, the EU signed the Cotonou Agreement with the African, Caribbean and Pacific (ACP) countries, continuing its economic relations through trade and foreign aid with its former colonies. According to the article 34, point 2, of the agreement:

“Given the current level of development of the ACP countries, economic and trade cooperation shall be highlighted at enabling the ACP States to manage the challenges of globalization and to adapt progressively to new conditions of international trade thereby facilitating their transition to the liberalized global economy” (Official Journal of the European Communities, 2010).

The Cotonou Agreement managed to open economic doors for the ACP countries, especially in terms of international trade and global economy. Over time, the EU was a vehicle that through its aid managed “to restore broken infrastructure. Aid had brought political stability, restored hope and not only given a future to defeated peoples, to bankrupt nations and to broken lands” (Moyo, 2009, pp. 8-9). While it could be argued that this pushed the EU into a backseat in regards to its own policy decisions, the move in fact wisely allowed for global cohesion with development targets in a time when the EU had to prioritise and focus on post-enlargement integration (Tindale, 2013, p. 9).

The EU's involvement in development and its aspirations have raised millions of people out of extreme poverty – officially defined as subsisting on less than \$1.25 a day – and improved overall access to basic human needs. However, nearly one billion people in the world still live below the \$1.25 threshold, and close to half of the population receive less than \$2.50 a day (European Union, 2014, p. 5). While Africa still has the highest percentage of poverty and famine in the world, it also has fast-growing economies. However, along with poverty and unemployment comes corruption and lack of commitment from some African leaders that are using these aid efforts for other purposes.

Even if limited progress has certainly been made, involvement in development assistance continues to hold significant challenges. The EU and its 27 members have consistently devoted themselves to development. The EU is currently the largest donor of the Official Development Assistance (ODA), a common measure of formal aid used by the Organisation for Economic Cooperation and Development (OECD). Providing over half of the global ODA (see Annex no.1 and Annex no.2), the EU has proven itself to be among the leaders in its stance on the issue, and its presence in 140 countries throughout the world has undoubtedly made its position as a major actor known (OECD, 2015, pp. 199-201). The EU was very much at the forefront of the development process and the EU with its Member States, meaning the EU development cooperation as a whole, play a very important role in international



arena. The EU continues to be the biggest donor even after Brexit, and this explains the undeniable role played by the EU that nobody can contest⁴.

Nonetheless, uneven and occasionally insufficient results, as well as critiques on what development policy should mean, have led to questions of whether the Union is truly a force of necessary change or simply a founder of defunct ideals – a player or a payer. Has Europe been able to innovate in the face of challenges, as a real player would? Or are its investments wasted in stagnation? In order to find a possible answer to these questions, we will move next to the unit that deals with the perception on the EU's moves and its plans on medium and longer term.

3. Perception on the EU's Plans and Actions for Future

The EU's development policy has many social and economic objectives in third countries, starting with the help provided in order to fight poverty and to integrate these countries into the world economy. In 2011, Europe took the reins through its establishment and implementation of the Agenda for Change. This initiative refocused the Union's efforts to deliver development aid beyond the expiration of the original MDGs. The plan also reassessed the transformed global environment and changed the approach for development assistance in order to incorporate new challenges and opportunities.

In addition to traditional areas of focus like the economy and health sector, the Agenda for Change emphasises good governance, sustainable energy, and strategic sectors like agriculture (European Commission, 2014, pp. 4-5). This decision carries substantial tactical value, it sets Europe up to play an influential leading role in the negotiations on the framework for the United Nations Sustainable Development Goals (Sherriff and Gregersen, 2014). From this point of view, the EU seems to be both a payer based on its funds injection and budget support, but also a player through the provision of information and norms, training and organisational capacity building, thematic studies, and link with other development partners⁵.

Another reason confirming that the EU can be seen in both ways is when conditions are imposed, then the EU is a payer; when principles are brought into the game, then the EU is a player⁶. It can be said the EU is a player based on its weight in political message within the developing country and a payer when it comes to the financial contribution for the country's development⁷.

⁴ Subject 3, representative of DG DEVCO, Policy and Coherence Unit, European Commission, interview held on February 23, 2017, Brussels, Belgium.

⁵ Subject 4, representative of the Civil Society House in Cotonou, interview held on November 23, 2015, Cotonou, Benin.

⁶ Subject 5, member of the European Parliament, Committee on Development and Delegation to the ACP-EU Joint Parliamentary Assembly, interview held on March 9, 2017, Brussels, Belgium.

⁷ Subject 6, representative of DG DEVCO, Civil Society Organisations and Local Authorities Unit, European Commission, interview held on April 28, 2017, Brussels, Belgium.



Despite the seemingly glowing and formidable track record, the EU's development policy has faced its share of criticism. One of the problems relates to traditional and financial means of development assistance such as ODA. Aid impact is disproportionate to the amount of donations due to the lack of a "clear, effective system [for holding] aid recipients and their governments accountable for resources illegally taken from public sector coffers" (Keo, 2013). Furthermore, "aid can only be effective if there are real commitments on behalf of the receiving countries to reform for their own benefit and in the interest of their people" (Gabriel, 2016).

The EU can be situated on both sides of the table: payer – as they accompany the developing countries on various projects funded by them, and player – as an international organisation which should work in synergy with the other partners⁸. This brings us to a difficulty confronting the Union's influence as a player in development: finding a collective voice (Sherriff and Gregersen, 2014). The EU's multinational structure makes it difficult for individual countries to ignore their own domestic needs and stand together behind a joint development policy. First of all, an actor – considered to be a player – aims rather a political role, trying to get involved and influencing the decisions taken on the ground. On the other hand, an actor – seen as a payer – plays the role of a donor who takes care of the good management of the projects⁹. But, the general impression is that the EU is perceived as a payer primarily in the context of infrastructure and sanitation projects where a lot of money is allocated¹⁰.

It was argued that aid, as a tool or instrument, includes "knowledge management, cohesion, strategy formulation and methodology as well as issues related to implementation and cash disbursement" (Holden, 2009, p. 26). From this point of view, the EU seems to be "a political dwarf in the global air regime and a source of funds rather than an actor in its own right" (Satiso, 2002, p. 10). Currently, the 28 Member States are haphazardly coordinating separate policies, with the European Commission, as an executive body, acting as more of an additional donor than an overarching unifying figure.

Even though the EU is officially the top provider of ODA, only one fifth of that is administered by the Commission, with the other four fifth disbursed by its Member States through bilateral agreements. This method has been said to "result in a system of European development cooperation that is complex and in some areas rather Byzantine" (Ganzle *et al.*, 2012, pp. 10-11). In some cases, the EU action is fragmented, finding some local situations where the EU is being perceived more as a payer than a player: "we are already aware that we underperform as a player

⁸ Subject 7, representative of the European Development Fund – National Authorising Office Support Unit; Economic, Social and Public Finance Section; interview held on January 22, 2016, Libreville, Gabon.

⁹ Subject 8, representative of the United Nations Development Programme, interview held on February 22, 2016, Libreville, Gabon.

¹⁰ Subject 9, member of ROPAGA Network, interview held on January 29, 2016, Libreville, Gabon.



comparing to how much we pay. This is one of our limitations as EU pays a lot, but this is done in order to become a stronger player”¹¹.

The EU needs to work on its coordination and to find a united voice for its policies if it wants to maintain global prominence. This carries us into an ongoing debate on what development assistance entails, and what it should entail. The EU system is complex, and requires a lot of efforts to make sure that the action on the ground mirrors the political vision¹².

The ODA should target money for low-income countries that need access to capital and finance. On the other side, middle-income countries should be assisted to reach a graduated system of development, but this effort will be implemented with less money injection, and more training and capacity building¹³. In a more comprehensive way, there is an emphasis on using development cooperation in order to help countries raising more domestic resources through different initiatives such as: “collect more and spend better, blending (combining loans and grants to finance investment), technical assistance”¹⁴.

After extensive research and field experience, different types of tools and channels have been identified in development aid, implemented on the ground and monitored by the donors: projects, programmes, technical assistance and capacity building, and sector-wide approaches (SWAp). In my opinion, the relevance of these instruments opens a debate regarding the quality of aid and its impact on the ground: a deep engagement including a diversity of tools and variety of stakeholders will bring more advantages and integrated approaches (i.e.: results oriented monitoring), while isolated/temporary initiatives will solve the problem for the moment without representing a sustainable solution on the longer term (i.e.: budget constraints, lack of monitoring frameworks, delays in reporting, lack of human resources).

Projects

The project is the basic unit of development activities and refers to individual segments of a particular cross-cutting sector such as hospitals, schools, roads, airports, with a clear description of limits and management level. The needs of a developing country are complex, resources are limited, and as a consequence it is impossible to focus on everything. The criteria of choice vary and that involves certain risks linked to the donors’ motivation.

Local authorities could also be involved in the process of proposing the right project (based on the urgent needs identified on the ground). The lack of coordination between the actors might lead to an increased risk of project isolation, meaning no sustainability and consequently its end.

¹¹ Subject 10, representative of DG DEVCO, Financing and Effectiveness Unit, European Commission, interview held on February 23, 2017, Brussels, Belgium.

¹² Subject 3, *ibidem*.

¹³ Subject 1, *ibidem*.

¹⁴ Subject 10, *ibidem*.



Programme aid

Programme aid is represented through the integrated projects, being much more than an isolated project. For example, if the plan is to build a hospital, donors have understood that an integrated approach is needed. Building a hospital is not sufficient without having roads for access, training programmes for paramedics, local clinics, emergency rooms, medical university, or research department. This scheme should be integrated into a system with specialised institutions in order to reach the development target and to have positive outcomes that can help at the SDGs implementation.

Integrated programmes involve a number of projects, and all together increase the chances of effectiveness and impact. It is a smarter approach that reduces the risk of having unnecessary projects and proposes more funds for basic services.

Technical Assistance and Capacity Building

On one side, the notion of technical assistance is understood as “the provision of skills, knowledge, know-how and advice [that] continues to be a major component of official development assistance” (Riddell, 2007, p. 202). There is a differentiation in the way of cooperation and partnership with the countries, because more advanced countries are asking more for exchange and transfer of know-how, collaboration at different levels, but not necessarily a big amount of money; and for least developing countries the ODA still represents an important factor for development¹⁵.

Both funds and training are important in development, but additional items can be identified: partners, strategy and coordination. At the same time, it is also needed to have more transparency, governance, democracy, less corruption, in order to ensure a package deal for the future¹⁶. By moving across between aid and technical assistance at various levels of development, regarding the country concerned, this reflects the demand of many middle-income countries about technology and investment, and much less in ODA. However, in the case of least developing countries, there are both aid and technical assistance required, and the EU is ready to provide both¹⁷.

On the other side, capacity building is crucial taking into account that in some developing countries, even if funds are available, there are no means and capacities to absorb them. Institutional capacity and capacity building are at the centre of the EU's actions and activities, and the investment in human capacity remains absolutely necessary. The change of systems and institutions should not be done in isolation, it is important to empower the capacity of people, to make them understand the update of the institutional setting¹⁸. It is beneficial to support and strengthen the civil society

¹⁵ Subject 2, *ibidem*.

¹⁶ Subject 6, *ibidem*.

¹⁷ Subject 2, *ibidem*.

¹⁸ Subject 10, *ibidem*.

capacities, by using Non-Governmental Organisations (NGO) to build capacities at the local level. Supporting and working with platforms lead to greater impact in the field.

The 2030 Agenda for Sustainable Development and the Addis Ababa Action Agenda on financing for development are both inspired by the principle that financing is not enough, and capacity building is also a contributor to the final objectives of the SDG's framework. The EU remains committed to providing ODA, especially for the developing and fragile countries, including the commitment to provide 0.7% which has unfortunately not yet been reached, but has played an important role in pushing the EU and its Member States to make additional effort¹⁹. Over the last years, there have been some EU Member States that have considered increasing their ODA, as financing support remains essential in order to implement the new development goals.

Sector-Wide Approaches

It is increasingly being argued that the right way to do development is to tackle a much broader area (e.g.: public health issues throughout a region or across a developing country). A sector programme involves a multitude of activities, a strategy well framed and developed, and a focus on details coming from each actor involved. The local authorities and donors within that country define a strategy in a given cross-cutting sector, and cover all issues related to it, including governance: How does the Ministry of Health work? What is the quality level of trainings for health personnel? How is the transport of medicines organised? Is there a reimbursement system or not? These aspects involve political decisions, based on national debate and donors' support, as it is reflected below by the description of the SWAp approach.

“Strictly speaking, a SWAp is not in itself a form of aid. What characterizes a SWAp is the engagement of donor agencies in supporting a recipient-government-led, sector-wide strategy, as well as agreement between donors and the recipient government on the broad parameters for implementing and managing the sector strategy within a medium-term expenditure framework. In theory, most donors would wish to see a rising share of all aid which is channeled to a particular sector being pooled to enhance the overall sector budget. In practice, matters are often more complex. Although most SWAps entail agreed partnership arrangements, which include funding, not all SWAps include pooled funding. Furthermore, and confusingly, some donors have continued to fund projects in the given sector, remaining outside the SWAp mechanism entirely, while others have contributed to the funding pool whilst continuing to fund discrete projects” (Riddell, 2007, p.196).

¹⁹ Subject 3, *ibidem*.



Beside the wide range of projects implemented by various donors (including EU), both at bilateral and multilateral level, as well as the numerous instruments that can be operated in development, partners themselves have to make sure that they are serious about their development and to demonstrate that they invest in their own development, and not just waiting for the ODA to do it. This is a never ending discussion on how to stop the ODA dependency, as in some countries this is really huge. However, fragile states might still rely on the ODA as key financing sources are needed for basic services.

As a matter of progress, based on the typology of the projects and programmes implemented, things have changed positively on the ground: NGOs have been involved mostly in health and agriculture-related projects, based on their interest in food security. Education programmes were launched in schools, including training for teachers and courses for students. Water projects have been approved in order to provide communities and people with clean water, installed irrigation and housing (Riddell, 2007, p. 270). But, all these improvements require the involvement of local authorities and good local governance in order to turn ambition into reality.

Conclusions

Development is and will remain an important pillar of the EU foreign policy, while being a key tool in eradicating poverty, increasing security for developing countries, reducing vulnerabilities and strengthening stability, as well as regional and economic integration of its neighbourhood. Development also involves a multidisciplinary perspective, with a strong focus on implementing sectorial development strategies and policies, instead of focusing on countries and regions as a whole.

The EU's foreign policy in development is not perfect and needs to be revised and updated for each cross-cutting sector, according to its objectives, targets and goals. The European political architecture and the prospect of closer proximity through the European neighbourhood policies mirror the focal point of European foreign policy (Ratka and Spaier, 2012, p. 15). It is an open door for a "privileged relationship with neighbours" (European Commission *et al.*, 2004, p. 3) reflecting the EU's involvement in removing obstacles and barriers. The EU neighbourhood policies at both North and East highlight the *modus operandi* as well as the *modus vivendi* of the actors involved in region building.

As it was seen throughout this paper, we are in a better position now to affirm that the efficiency of the new development agenda is related to the EU's perception on the ground, either as a player, or as a payer. In the specialised literature, there is not so much said about the EU's status vis-à-vis to its position as payer or player. From the point of view of the role played in international arena, the EU can be easily considered a player based on its regional influence and legitimacy in proposing sustainable development strategies on the ground. From the point of view of its involvement in financing projects and programmes, the EU is usually considered a



payer taking into account its efforts are difficult to be quantified or sustainable on the long term.

However, the EU's role cannot be limited at payer and/or player as its external role involves multiple positions and functions such as “partner, trader, competitor, benefactor, investor and paradigm for countries and emerging regional groupings throughout the world” (Langenhove, 2011, p. 118), with the main purpose of addressing practical cooperation among states, to create common norms and contacts that can help in fostering good neighbourhood relations.

Last but not least, the EU continues to be an important donor in international arena, setting out development standards and norms, promoting resilience and strategic cooperation in order to anticipate risks at different levels. The EU also sets rules not only at the political level, but also in its relationship with civil society and local authorities, being a soft power that tries to impose its policies and stimulate local development in a sustainable way.

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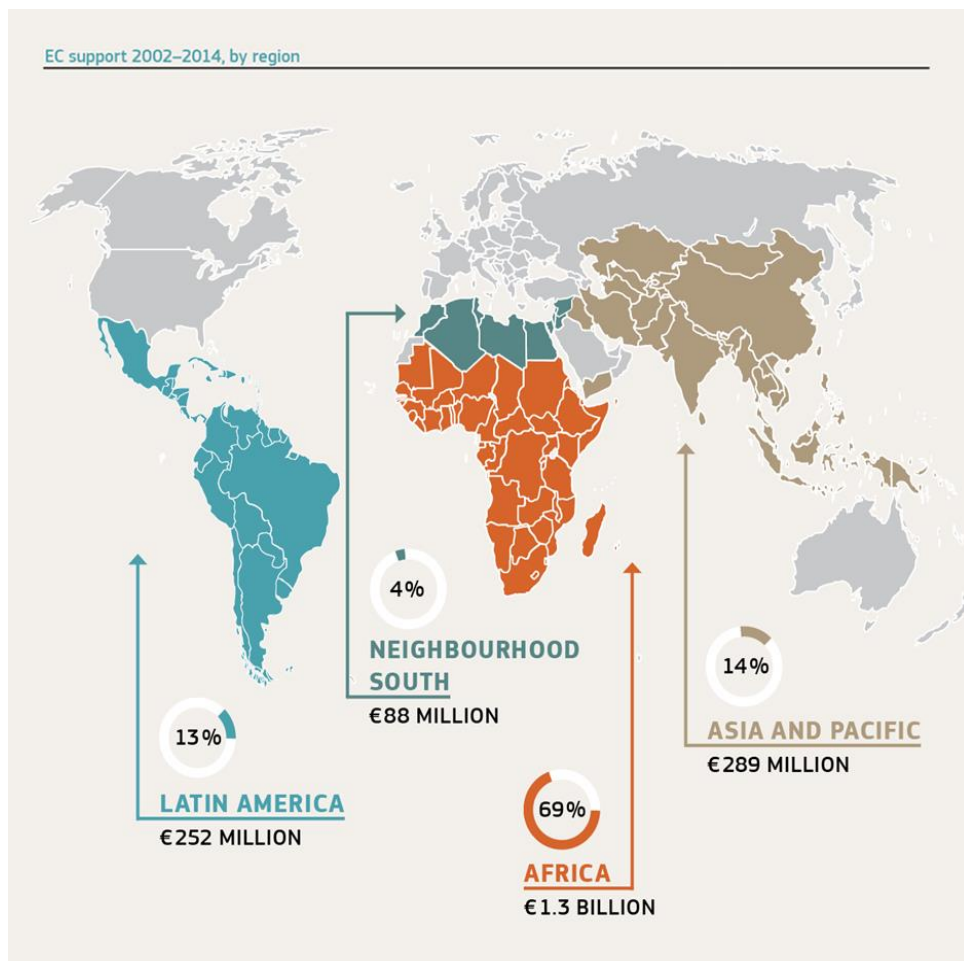
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Guiding interview protocol

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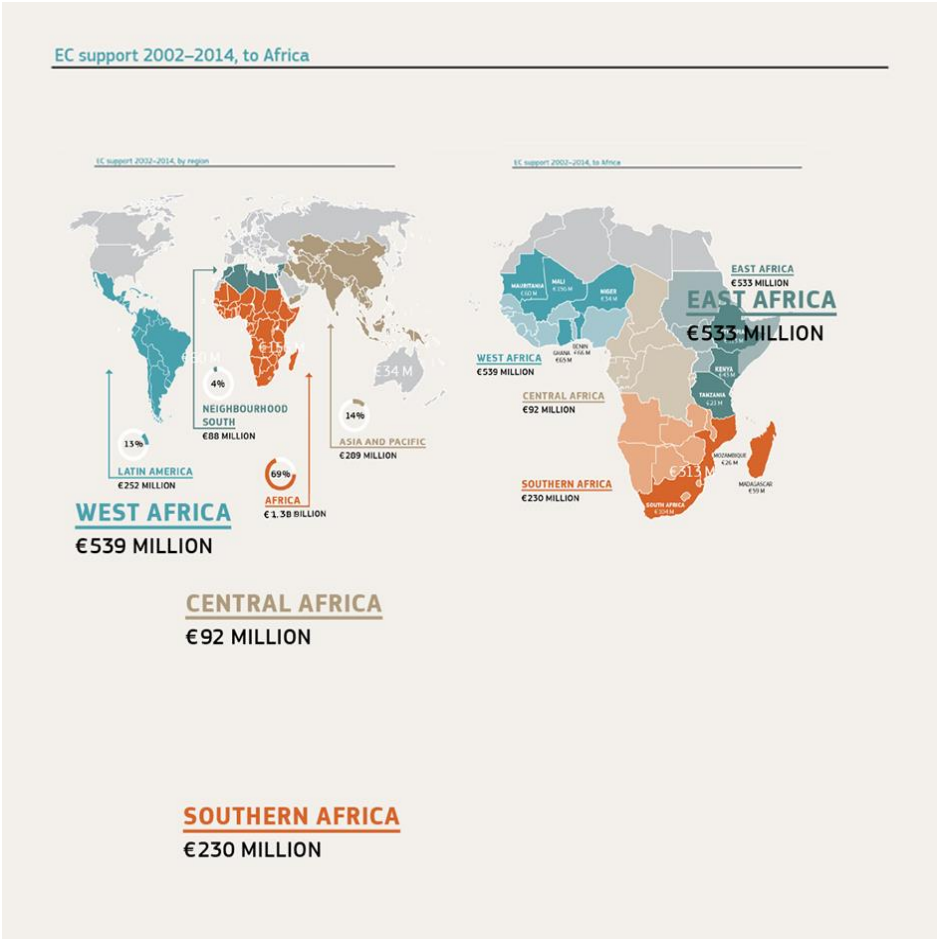


ANNEX 1. European Commission 2002-2014, by region



Source: European Commission, 2016, p. 11.

ANNEX 2. European Commission 2002 – 2014, to Africa



Source: European Commission, 2016, p. 12.



THE “CIRCLES OF SUSTAINABILITY” MODEL AS A TOOL IN ASSESSING THE RESILIENCE OF LOCAL DEVELOPMENT POLICIES IN THE BLACK SEA REGION

Mykola POPOV*, Ivan KOMAROVSKYI**

Abstract

It is proposed to put the concept of local economic development (LED) at the basis of the approach to solving the problem of ensuring resilience development of the territory. However, the insufficient theoretical basis of the concept limits its practical application. To determine the data characterizing the process, it is proposed to use the four domains of “Circles of Sustainability” interaction assessment methodology. The data obtained made it possible to prepare a forecast for the possible potential of the region’s territorial resilient.

Keywords: LED, domains of “Circles of Sustainability”, resilience development

Introduction

Ensuring the resilience of the territory in conditions of economic, military, and civilizational conflicts is an urgent task that has not received its final solution. For the countries of Eastern Europe, whose territory has become the object of military aggression with the participation of Russia, maintaining resilience is of particular importance.

Despite the participation of a number of EU countries, the USA and international organizations in resolving conflicts, the proposals that were received were insufficient and were not based on a deep analysis of the situation. Therefore, the results of considering the general provisions of the resilience of territories can become the basis for the subsequent development of plans to overcome the crisis.

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Resilience in the narrow sense should be understood as the possibility of maintaining equilibrium during a disturbance with the subsequent restoration of the state that was before. This approach characterizes the ability of the territory to remain resilience in the face of change and continue to develop in an ever-changing environment (Folke, 2016).

The region must not only withstand external influences but also have the ability to adapt, making the necessary changes in the regional structure to ensure territorial resilience. For this, when considering the regional context, it is necessary to proceed from the broader sense of the institutional environment that determines the dynamics of conflict development and the adaptability of the region (Hassink, 2010).

In characterizing the concept of resilience, (Davoudi *et al.*, 2012), propose to distinguish:

- resilience, that characterizes the ability to withstand negative external influences and react to them while maintaining the resilient and durability of the territorial system;
- resilience, that is characterized by the ability to adapt to constantly changing conditions, while making the choice of new ways of development.

The adaptability of the territorial system, its capacity for constant renewal, and self-improvement is the main characteristic of territorial resilience. In general, adaptability can be considered as the ability of a country, territory and nations to withstand and recover from shocks, transforming their structures and livelihoods in the face of change, and uncertainty (Mitchell, 2013).

The possibility of external influence is usually defined in terms of its “risk” (Bolis *et al.*, 2014). But one should take into account the difference that exists between the “risk of the appearance of external influence” and “the consequences of external influence.” Here risk implies probability, and the consequence is an event that happened (OECD, 2014).

It should also be noted such an important characteristic of resilience as its potential (resilience boosting), that characterizes the ability of a territorial system to respond to a negative external impact or provide for the risk of its occurrence, reduce the consequences of impacts or transform them in such a way so that they have less impact on the system (OECD, 2014, p. 13).

To counteract impacts, the resilience potential of a territory can be enhanced by three types of capabilities (OECD, 2014, p. 13):

- absorptive capacity: the ability of the system to prepare for, mitigate or prevent negative external influences using predetermined protective measures to preserve and restore the main basic structures and function;
- adaptive capacity: the ability of a system to regulate, modify, or change its characteristics and actions in order to mitigate potential damage. Adaptability allows avoiding qualitative changes in functional or structural identity;
- transformative capacity (ability to transform): the ability of the territorial system to move to a new quality in which negative external influences will not have an impact.



Thus, it is appropriate to use the term “territorial resilience” when it comes to the property, ability, potential of the structure, and not about its qualitative features and traits.

Empirical studies that are used to study the resilience of territorial systems are limited. An alternative approach is to conduct a study of the resilient of the territory through indicators of sustainable economic development.

This possibility was confirmed in the work presented by (Tanner *et al.*, 2017). This approach allows us to focus on issues such as structural, technical, and political challenges, which are significant for the analysis of processes in the conflict zone.

Considering the possibility of studying resilience based on the analysis of local economic development policies, one should dwell on the relationship between the concepts of “resilience” and “sustainable development”. They are characterized by such common features for them as concentration on the qualitative characteristics of the territorial system, its properties, ability, and development potential of the structure of the system.

The complexity of the term “LED concept” makes it possible to link the territorial dimension with the economic, social, environmental, and institutional aspects of the development of the territory, which are among the factors that determine the potential of territorial sustainability. This makes it possible to resilience the use of methods for studying the resilience of the territorial system that have found their application in the analysis of processes of sustainable LED (Swinburn, 2006; World Bank, 2006; Bates, 2011; Wiewel *et al.*, 2011; Ascani *et al.*, 2012).

The relationship between the LED concept and the resilience of the territorial system is also confirmed by the fact that in both cases, the involvement of residents, local politicians, and authorities is imperative. The well-known definitions of LED support this thesis. For example, Canzanelli G. proposes to consider LED as a process of interaction of all stakeholders, which encourages and facilitates cooperation between all stakeholders who jointly define and implement the adopted development strategy, using available local resources (Canzanelli, 2001).

Thus, the possibility of determining sustainability based on the analysis of balancing forces inherent in local territorial systems makes the LED concept attractive for researchers and practitioners of territorial resilience. At the same time, this approach can find its application in the practice of reconciliation of the parties to the conflict, for whom the problems of the economy and social sphere are always significant.

Methods

There are different approaches to studying and measuring resilience (Giacometti and Teräs, 2019). Their distinctive feature is the use of interdisciplinary experience, understanding of current trends in regional development, and binding to time and place.



“Guidelines for resilience systems analysis” (RSA), can serve as a basis for developing a methodology for empirical and case studies of territorial resilience (OECD, 2014). The universality of the research methodology proposed in the manual is determined by the fact that it sufficiently takes into account the risks associated with natural, climatic, economic, and/or geopolitical shocks. This allows the guidance to be used to analyse resilience in relation to various forms of conflict.

The methodology proposed in RSA places particular emphasis on “Good governance: of the resilience research process. Involving not only “Government actors”, parliamentarians, and Ministries in the analysis, but also all interested parties allows to develop a common vision of risks and opportunities to counter the impacts.

In the event that a crisis situation has already arisen, the research should be aimed at overcoming the crisis with the least losses. For this, it is necessary to consider and assess the degree of impact on the territorial system of external and internal negative factors, using the following sequence of actions: 1) context analysis; 2) forecast of scenarios of future changes; 3) assessment of the evidence of future changes (OECD, 2014, p. 16).

The study proposes to use the model of interaction four domains (“politics”, “economics”, “ecology” and “culture”) of “Circles of Sustainability” to establish a connection between negative factors of influence and data characterizing economic, social or environmental qualities territory (James, 2014; James, 2015; James *et al.*, 2015). According to this model, the territorial system will be considered sustainable provided that the balance between the domains of “Circles of Sustainability” is maintained in the process of their interaction. The influence of external and internal factors will be taken into account when determining the environment (functional fields) in which the domains interact in “Circles of Sustainability” (James *et al.*, 2015).

In order to link the territorial dimension with the factors that determine the potential for resilience, the proposed indicators should characterize its qualities such as economy, environment, social sphere, institutional environment, and politics. This will make it possible to establish causal relationships between the influence of external and internal negative factors on the local territory and the potential of its resilience, which is necessary to maintain resilient and adapt to external influences.

Conceptualization of the term of territorial systems resilience

The possibility of changes (in relation to the territorial system) that will lead to a violation of its resilience is determined by a number of factors, among which the following should be highlighted:

- a. the process of evolutionary development;
- b. cyclical development of socio-economic systems;
- c. political confrontation, the presence of a military conflict;
- d. natural disasters;
- e. the negative impact of the activities of the human community on the environment;



- f. the nature of market relations, which are based on a combination of competition and risk, potentially turning into a confrontation.

The definition of "territorial resilience" always represents the ability of a territorial system to maintain a dynamic balance, provided its security, resilient, reliability, and integrity are ensured (Hassink, 2009; Giannakis and Bruggeman, 2019). The possibility of its preservation is based on such a quality of the territorial system as an adaptation to changes in the external environment, which in the event of military or ethnic conflicts, natural disasters is the main condition for overcoming the crisis.

The overall resilience of the territorial system, its ability to recover, largely depends on the type of external impact, its nature, and intensity. The risk of exposure is determined by a combination of negative external and internal factors when:

- internal and external factors can act simultaneously;
- internal factors oppose the negative influence of external ones;
- external factors oppose negative internal changes in the territorial system.

To clarify the possible nature of the impact, the proposed OECD classification should be adopted: covariate impacts (episodic events that do not have a systemic nature); unique impacts (events that are specific to a given area); seasonal impacts (events of a systemic nature in their appearance) (OECD, 2014).

Taking into account social, economic, political and geopolitical, as well as natural and environmental factors, will determine the degree of resilience of the territorial system (Campbell-Lendrum *et al.*, 2005; Martin, 2012).

Based on the foregoing, it should be concluded that the combination of resilience, security, and adaptability forms the specific qualities of any territorial system. The development of the concept of territorial resilience should be considered dynamic resilience, which should be understood as the ability to operatively self-regulate under the influence of external and internal destructive factors. This includes the ability of the system and its elements to heal itself. The level of dynamic resilience is determined by the aggregate adequate response of both individual elements and the entire territorial system to any changes in internal and external factors.

The dynamic resilience of the territorial system is relative; the result of overcoming crisis situations can be various options for subsequent development. The system can react to ongoing changes by restructuring its structure, using its available adaptive capabilities. At the same time, its integrity remains original. In the case when the available opportunities are not enough to adapt to new conditions, the system moves to a completely different path of development, to a new quality, which requires the search and replacement of its characteristics with new ones (Bonß, 2016; Muštra, 2016).

A possible example of the transition of the territorial system to a new quality is the development of conflicts in Georgia, Moldova, and Ukraine. When the integrity of the territory changed as a result of external military aggression, the system passed into a state of dynamic inresilient. At the same time, the crisis itself



will persist in the long term. But the end result (when the conflict is over) will be the transition of the territorial system to a new quality.

While maintaining the original integrity, the territorial system after the crisis passes to the evolutionary path of development. But for this, it must have the ability to self-organize and self-regulation.

Considering this option, a number of researchers note that even if the territorial system retains its functions, structure, and identity, its ability to withstand external factors requires a certain degree of reorganization and changes (Muštra *et al.*, 2016). It should be borne in mind that the resilience of the territorial system is complex and multifaceted (Martin and Sunley, 2015; Sensier *et al.*, 2016).

The definition of how to assess the nature of the development of the territory after overcoming the crisis can also be different. For example, the collapse of the Soviet Union, as a territorial system, is assessed by some as a geopolitical catastrophe (Russia), by others as an opportunity to move to an evolutionary path of development (the Baltic countries, Eastern Europe).

Only the attitude of residents of the territory to the problem of overcoming the crisis and the choice (or acceptance) of the direction of its subsequent development can be of decisive importance here. As the experience of the countries of Eastern Europe has shown, many factors that are essential for a stable system (economy, politics, or the environment) can acquire a secondary character.

Thus, the determination of the level of resilience of the territorial system should be based on an assessment of those factors that are key for the target group of residents of the territory.

An integral indicator of territorial resilience is its potential. In general, the potential for resilience can be represented by functional dependence, including factors that characterize: economy, policy, and institutional environment, ecology and environment, cultural and social environment:

$$R_D = f(\sum F, D_{politics}, D_{economics}, D_{ecology}, D_{culture}); \quad (1)$$

where:

- R_D – factor of sustainable development of the territory;
- f – function;
- $\sum F$ – external and internal factors of influence;
- D – domain “politics”, “economics”, “ecology” and “culture”.

A practical determination of the potential for resilience is possible at any stage of development of external influence, including the study of the possibility of overcoming the crisis and restoring the territorial system.

An assessment of individual indicators of the potential of territorial resilience, according to the research methodology under consideration, can be obtained on the basis of an analysis of the values of indicators characterizing the domains “politics”, “economics”, “ecology” and “culture” of “Circles of Sustainability”. Further, the results obtained should be reduced to one integral indicator of resilience. The need for a preliminary determination of the resilience of individual domains is debatable



since the unstable of an individual domain does not allow us to conclude that the entire territorial system is also unstable.

When defining and analysing the values of the domains of "Circles of Sustainability" indicators, it is important to systematize the indicators, since different indicators should characterize the processes occurring in three different systems (man, economy, nature) with different spatial and temporal scales of measurement. Additionally, the indicators should reflect not only the dynamics of the interaction of domains of "Circles of Sustainability", but also the causal relationship between them and the factors that determine the resilience of the territory.

Determining the potential for resilience using the concept of interaction domains of "Circles of Sustainability"

According to the above, to determine the resilience potential of the territorial system in the study it is proposed to use the model of interaction of domains of "Circles of Sustainability" (James, 2014; James *et al.*, 2015). The current values of indicators characterizing the state of domains will be used as initial data: "politics", "economics", "ecology" and "culture". The influence of internal and destructive factors will be considered at the level of interaction of domains in the environment of "functional fields" of "Circles of Sustainability"- F_s^r (Komarovskiy, 2019).

The first step in developing a methodology for determining the level of resilience of the territorial system based on the concept of interaction domains of "Circles of Sustainability" should be to define the concept of "domain" and indicators that characterize its current state and properties (Komarovskiy, 2019).

According to the general approach, the term "domain" in the study is proposed to mean the center of influence of the territorial system, the subjects of which have common properties. To assess the current state of the domain of "Circles of Sustainability" D in the study, it is proposed to use the indicator of the state of the domain $x_{n,m}$. Their values are calculated on the basis of quantitative or qualitative assessment of individual characteristics of the current state of the territorial system. Each indicator has a normal distribution of its values in the coordinate system (n, m) . A limited set of evaluation indicators $x_{n,m}$, that related to a specific "domain" - D , is defined in the paper as the potential of the domain $D(x_{n,m})$.

Definition 1.

The potential of the "domain", - $D(x_{n,m})$ is determined by a limited set of its indicators $\{x_{n,m}\}$

$$D(x_{n,m}) = \{x_{n,m} \neq \emptyset\} \in D, \quad (2)$$

whose value $\{x_{n,m}\}$ is determined by its current state.

Definition 2.

A limited set of indicators related to $(x_{n,m}) \in \mathbf{D}$ is determined by properties that are characteristic only for a given “domain” \mathbf{D} .

According to “Definition 2”, when analysing the process of overcoming the crisis, individual indicators $x_{n,m}^r \in D(x_{n,m}^r)$, where r – is the domain number that has common properties, should be grouped in relevant groups. These groups must be assigned to a specific domain.

Generalization of the results of a qualitative and quantitative assessment of the values of indicators $\{x_{n,m}\}$ allows, taking into account the conditions of the interaction of individual “domains” with each other, to analyse the preconditions for the crisis and determine the beginning of the crisis. Renewal of the territorial system.

The interaction of domains of “Circles of Sustainability” is regulated by the institutional environment, traditions, social practice, private interests, etc., which is reflected by the corresponding “functional fields” of “Circles of Sustainability” - F_s^r , where s – is the type of functional field, r is the domain number.

The functional fields of the interaction of the domains of “Circles of Sustainability” in the context of the study of the resilient of the territorial system have the following characteristics (James, 2015; Komarovskiy, 2019).

1. The field of identification of the subjects of interaction. Each participant in the interaction process identifies himself in the partnership according to his expectations, needs, and available resources. The parameters according to which the participants of the interaction are identified are:

- strategic vision of approaches to overcoming the crisis;
- mission - the purpose of the subjects of interaction on a local and global scale, their socially significant role;
- system of values in the territorial dimension;
- attitude to the sources of the conflict, the conditions for overcoming it, and the type of further development, evolutionary or adaptive.

2. Field of mutual expectations. When overcoming a conflict, there is usually a problem of mutual expectations on the part of the parties involved in the process.

3. An important prerequisite here is the nature of the conflict and how local residents perceive it. It depends on how the territorial system will transition to a state of dynamic resilient, according to which it will adopt a new quality or the crisis will persist in the long run.

4. The field of resources and opportunities includes the whole set of tangible and intangible resources of the parties to the interaction needed to overcome the crisis.

5. The field of mechanisms of interaction reflects the ways of influence of the domain “institution” on the state of resilient of the territorial system.

6. The communication field includes the representing information space necessary for the application of mechanisms of interaction of domains of “Circles of Sustainability”.

The management of the crisis exit process by the government or local authorities is reflected in the domain of the “politics”. The relationship between the



control mechanisms, the values of the indicators $x_{n,m}^r \in D(x_{n,m}^r)$, which characterize the state of the domains of "Circles of Sustainability" and $\sum F$ is realized in the environment of functional fields - F_s^r . In their multidimensional variation, one or another variant of the process of dynamic resilient of the territory is formed and realized.

Thus, the representation of the dynamic resilient of the territorial system by a limited set of indicators $x_{n,m}^r \in D(x_{n,m}^r)$, is essentially a qualitative characteristic of the process of overcoming the crisis, given the constraints imposed by the conditions of interaction between domains in the environment of functional fields F_s^r (Komarovskiy, 2019).

Each process of beginning, overcoming, and exit from the state of crisis has its initial - $\mathcal{V}_{n,m}$ and final - $\mathcal{W}_{n,m}$, variants of the current state. In the general case, the set of variants of dynamic resilience $\{\mathcal{W}_{n,m}\}$ can be characterized by the distribution of the conditional probability $p(\mathcal{W}_{n,m} / \alpha, \tau, \varphi, \theta)$, where the possibility of obtaining $\mathcal{W}_{n,m}$ is determined by the functional dependence on a number of indirect external and internal factors $\alpha, \tau, \varphi, \theta$ that affect the process of emergence and overcoming the crisis:

α - the main factors of influence. The set of conditions that characterize the preconditions for the crisis;

τ - is the adaptation potential. These should first include the adaptive capabilities of the system necessary for the transition to the evolutionary direction of development;

φ - destructive factors. Systemic or non-periodic events that led to the crisis and are able to largely determine the directions of further development of the crisis overcoming process, evolutionary or state of dynamic resilient;

θ - random factors. Events that occur by chance and have a normal distribution.

If $\mathcal{W}_{n,m}$ is a function of the listed influencing factors

$$\mathcal{W}_{n,m} = f(\alpha, \tau, \varphi, \theta), \quad (3)$$

then to reduce the dependence of $\mathcal{W}_{n,m}$ on θ it should be assumed that the influence of the random factor θ on the process $\mathcal{W}_{n,m}$ should be much weaker than the influence of factors such as α, τ and φ , the variance of the random factor $\sigma\theta \cong 0$

Under such conditions (3) can be reduced to the form

$$\mathcal{W}_{n,m} = \Phi_{n,m}(\alpha, \tau, \varphi) + \theta, \quad (4)$$

where:

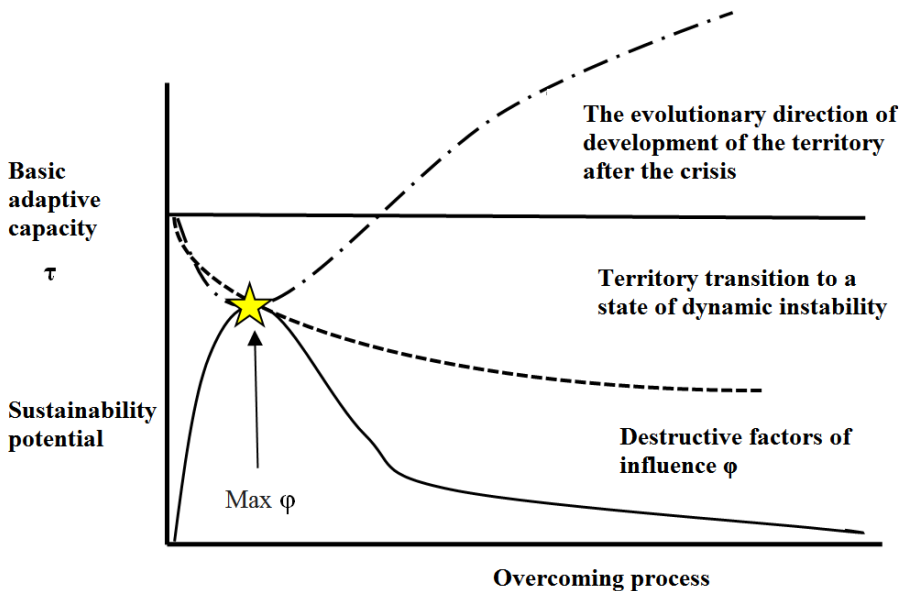
- $\phi_{n,m}(\alpha, \tau, \varphi)$ multidimensional function, which describes the process of transition from the initial state of crisis $\mathcal{V}_{n,m}$ to a specific variant of development of the territory (evolutionary or dynamic inresilient) $\mathcal{W}_{n,m}$;
- θ event, the probability of which is determined by the law of normal distribution $p(\theta)$.

Knowledge of the type of distribution of factors influencing α , τ , φ , and θ will allow to draw a conclusion about the degree of their influence on the process of emergence and overcoming the crisis and to classify them (see Figure 1).

Determination of conditions that affect the course of the process of overcoming the crisis and the final state of the territorial system $\mathcal{W}_{n,m} \in \{\mathcal{W}_{n,m}\}$, according to the type of distribution $p(\mathcal{W}_{n,m}/\alpha, \tau, \varphi, \theta)$, which characterizes the functional dependence $\phi_{n,m}(\alpha, \tau, \varphi)$ of the implementation $\mathcal{W}_{n,m}$, is possible only on the basis of quantitative and qualitative research not only $\mathcal{V}_{n,m}$, but also the factors of influence α, τ, φ . Their result should be to determine the type of function $\phi_{n,m}(\alpha, \tau, \varphi)$, which represents the process of transition from the initial conditions $\mathcal{V}_{n,m}$ to a specific state $\mathcal{W}_{n,m}$:

$$\phi_{n,m}(\alpha, \tau, \varphi): \mathcal{V}_{n,m} \Rightarrow \mathcal{W}_{n,m} \in \{\mathcal{W}_{n,m}\}. \quad (5)$$

Figure 1. Interaction between size and heterogeneity of clusters over the life cycle.



Source: authors' representation



As noted, the system will either respond to change by restructuring its structure, using its existing adaptive capabilities, or the existing capabilities will be insufficient to adapt to new conditions, which will lead to a transition to a state of dynamic inresilient.

In practice, determining the distribution $\left(\mathcal{W}_{n,m}/\alpha, \tau, \varphi, \theta\right)$, as a factor in obtaining a specific implementation of $\mathcal{W}_{n,m}$ and preparing on its basis a forecast of the way out of the crisis is a rather difficult task. Its solution is due to the need to simultaneously take into account numerous and independent factors influencing $(\alpha, \tau, \varphi, \theta)$ on quantitative or qualitative indicators $x_{n,m}^r \in D(x_{n,m}^r)$, where r is a separate domain.

Under such conditions, a possible approach may be to present the crisis exit process in separate stages, which will significantly reduce the dimension of the distribution $\left(\mathcal{W}_{n,m}/\alpha, \tau, \varphi, \theta\right)$ and the number of influencing factors that need to be investigated (Komarovskiy, 2019).

In the process of interaction of domains of "Circles of Sustainability" in the environment of functional fields F_s^r is a limited set of indicators domains $x_{n,m} \in \{x_{n,m}^v\}$ in the set of new values of these indicators, which are characteristic for the final version of the process of overcoming the crisis $\{x_{n,m}^w\}$. This mapping, which is the result of the interaction of indicators representing the corresponding domains of "Circles of Sustainability" in the environment of functional fields $F_s^r \in D(x_{n,m}^r)$, can be described as the result of applying the interaction operator \mathcal{H}_f to multidimensional functions $\phi_{n,m}(\alpha, \tau, \varphi)$. It should also be borne in mind that the values of each of the indicators will be functionally determined by the initial conditions of response to the crisis.

According to this approach, the process of overcoming the crisis $\mathcal{W}_{n,m}$ can be described as the result of applying the interaction operator \mathcal{H}_f to an array of values $\{x_{n,m}^v\}$:

$$\{x_{n,m}^w\} \in \{\mathcal{W}_{n,m}\} = \mathcal{H}_f(\{x_{n,m}^v\} \in \{V_{n,m}\}) \quad (6)$$

Each of the implementations $\{\mathcal{W}_{n,m}\}$, is characterized by its unique multidimensional k - distribution of indicators (quantitative and qualitative values of indicators), the set of which ultimately determines the resulting version of the process $\mathcal{W}_{n,m}^k$.

According to (6), the methodology of analysis of the process of formation of dynamic resilience of the territory is proposed to represent the process of crisis development as a sequence of two main stages determined by the respective operators: generating or initiating crisis - $\mathcal{H}_{f_{\text{ген}}}$ and overcoming it - $\mathcal{H}_{f_{\text{под}}}$:

$$\mathcal{H}_f = \mathcal{H}_{f_{\text{ген}}} + \mathcal{H}_{f_{\text{под}}} \quad (7)$$

A practical determination of the crisis is possible based on the results of a qualitative or quantitative assessment of indicators of domains of “Circles of Sustainability”, presented in the space $D(x_{n,m}^r)$, functional fields F_s^r and taking into account the factors α and τ .

In turn, the stage of overcoming is characterized by the process of crisis development and its end result $\mathcal{W}_{n,m}$. Accordingly, it will be determined:

1. direct process of interaction of domains of “Circles of Sustainability $D(x_{n,m}^r)$ in the environment of functional fields;
2. directions of territory development (evolutionary or dynamic inresilient), - $\mathcal{W}_{n,m}$, which is characterized by a limited set of indicators $\{x_{n,m}^{\mathcal{W}}\} \in \{\mathcal{W}_{n,m}\}$;
3. conditions and current state of development of the crisis process, characterized by the factors of influence τ , φ , and θ ;
4. the influence of management mechanisms by state and local authorities.

Both of the considered stages of the analysis of the process of beginning and overcoming the crisis can be presented as a common functionality from a set of indicators representing domains. Accordingly, (7) can be reduced to the functional (8), where to a limited set of indicators representing the initial state $\{x_{n,m}^{\mathcal{V}}\}$, the generation operator $\mathcal{H}_{f_{\text{ген}}}$, is applied, and to the indicators that determine the process interaction domains of “Circles of Sustainability” operator $\mathcal{H}_{f_{\text{под}}}$:

$$\mathcal{H}_f \{x_{n,m}^{\mathcal{V}}\} = \mathcal{H}_{f_{\text{под}}} [\mathcal{H}_{f_{\text{ген}}} (\{x_{n,m}^{\mathcal{V}}\}, (\alpha, \tau)) + \varphi + \theta] \quad (8)$$

Qualitative values of indicators can be obtained as a result of expert assessments of their significance and level of influence on the studied process in the form of qualitative indicators characterizing domain - $D(x_{n,m}^r)$.

Any result of the process of overcoming the crisis can be represented by its implementation $\mathcal{W}_{n,m} \in \{\mathcal{W}_{n,m}\}$, which is characterized by a multidimensional function $\phi_{n,m}(\alpha, \tau, \varphi)$ depending on external and internal factors impact. Thus, (8) can be reduced to the form (9):

$$\mathcal{W}_{n,m} \in \{\mathcal{W}_{n,m}\} \equiv \phi_{n,m}(\alpha, \tau, \varphi) (\{x_{n,m}^{\mathcal{V}}\}) \quad (9)$$

In its content, the functional (9) is an indicator that can consider (which characterizes) the resilience potential of the territorial system.

Indirect qualitative assessment of influencing factors is reflected in the definition of indicators representing the potential of individual domains $D(x_{n,m}^r)$. The difference between the initial values $\{x_{n,m}^{\mathcal{V}}\}$ and the indicators of the achieved level of development $\{x_{n,m}^{\mathcal{W}}\} \in \{\mathcal{W}_{n,m}\}$ is a characteristic of the achieved level of development. It is clear that uncoordinated interaction of functional fields F_s^r , the



conditions of which are determined by current factors of influence ($\alpha, \tau, \varphi, \theta$) and influence on the process of overcoming the crisis of random factors can lead to a mismatch of the obtained state of the predicted variant (evolutionary or dynamic inresilient) . This deviation can be estimated through the value of the deviation $\mathfrak{S}_{\text{реал}}$.

According to (9), if after the transition from $\{\mathcal{V}_{n,m}\}$ to $\{\mathcal{W}_{n,m}\}$ the value of the decisive function $\Phi_{n,m}(\alpha, \tau, \varphi)$ is preserved

$$\Phi_{n,m}(\alpha, \tau, \varphi) (\{x_{n,m}^{\mathcal{V}}\}) \Rightarrow (\mathcal{W}_{n,m}^{\text{пор}}), \quad \text{to } \mathfrak{S}_{\text{реал}} = 0 \quad (10)$$

Under such conditions, the influence of existing factors will not disrupt the process of overcoming the crisis. Otherwise, when there is a discrepancy between the result of applying the decisive function $F_p \{\mathcal{W}_{n,m}\}$ and the actual implementation $\mathcal{W}_{n,m}$,

$$(\mathcal{W}_{n,m}^k) \notin (\mathcal{W}_{n,m}^{\text{пор}}) \text{ та } \mathfrak{S}_{\text{реал}} > 0, \quad (11)$$

then it can be concluded that the process of overcoming the crisis has moved to a state of dynamic inresilient.

The calculation of the values of the indicators for substitution in (10) is a problem that may not always have a complete solution. In this regard, the study proposes an approach in which $\min \mathfrak{S}_p$ is carried out by reducing the dimensionality of the space of indicators $\{x_{n,m}^{\mathcal{V}}\}$, (measures to overcome the crisis). Such operations can be carried out in two ways: at the stage of developing plans to overcome the crisis (formation of $\mathcal{W}_{n,m}$) or by imposing restrictions on the potential of individual domains of influence $D(x_{n,m}^r)$. This approach will reduce the number of possible options for overcoming the crisis at the stage of transition from $\mathcal{V}_{n,m}$ to the implementation $\mathcal{W}_{n,m}$.

An additional measure to reduce the dimension of the space of indicators $\{x_{n,m}^{\mathcal{V}}\}$ may also be to reduce the number of development options by reducing or even eliminating indicators that may lead to conflict in the interaction of domains of "Circles of Sustainability".

The results of the generalization of the above, taking into account the proposed OECD sequence of actions: context analysis; forecast of scenarios of future changes; evaluation of evidence of future changes, allows us to propose a block diagram of the analysis of the process of emergence and overcoming the crisis (OECD, 2014), (see Figure 2).

indicators $\{x_{n,m}^{\mathcal{V}}\}$ (crisis generation). Such operations can be carried out in two ways: at the stage of establishing the fact of the crisis and developing plans to overcome the crisis (formation of $\mathcal{W}_{n,m}$) and by imposing restrictions on the potential of individual domains of influence $D(x_{n,m}^r)$. This approach will reduce the number of possible options at the stage of transition from $\mathcal{V}_{n,m}$ to its implementation $\mathcal{W}_{n,m}$.

An additional measure may be to forecast the highest probability of the option, which will also reduce the number of indicators that characterize the crisis. Adoption of such an option provided that $(\mathcal{W}_{n,m}^k) \notin (\mathcal{W}_{n,m}^{\text{npor}})$, allows you to optimize plans to overcome the crisis in this way

$$\text{Arg}(\mathcal{W}_{n,m}^{\text{npor}}) = \min_{k \rightarrow 1} (\mathcal{W}_{n,m}^1, \mathcal{W}_{n,m}^2 \dots, \mathcal{W}_{n,m}^k) \quad (12)$$

Implementation (12) will minimize the risk of the crisis management process and its effectiveness.

Data. Assessment of territorial resilience of the Black Sea region of Ukraine (Odessa region)

A number of countries in the Black Sea region in recent decades have become territories of conflict and military confrontation. Particularly significant in this regard are Russia's aggressive actions against Ukraine, military actions in the Donbas, and attempts to destabilize in the south, which pose a threat to the adjacent territories of Moldova and Romania.

To determine the level of resilience of the Black Sea region of Ukraine (Odessa region), it is proposed to use the previously considered concept of interaction domains of "Circles of Sustainability". Its practical application will be based on the recommendations of the OECD, which suggest the following order of research on territorial resilience, Step 1-3 (OECD, 2014):

Step 1. Analysis of the context.

The basis of the study of territorial resilience is the data characterizing the domains of "Circles of Sustainability". The list of domains that will adequately meet the objectives of the study was obtained on the recommendation of a group of experts. It includes:

- Domain 1 "Economic Aspects of Resilience".
- Domain 2 "Social Aspects of Resilience".
- Domain 3 "Environmental Aspects of Resilience".
- Domain 4 "Institutional Aspects of Resilience".

The optimal list of domain indicators was established based on the results of a survey of residents of the Odesa region. Examples of questionnaires presented in (James *et al.*, 2015), "Table 3: Questionnaire designed to collect existing and lacking assets/capital that are relevant for the regional resilience analysis", "Table 4" were

also taken into account: Questionnaire designed for collecting information about regions' 'capacities'», (Giacometti and Teräs, 2019, pp. 22-23).

Expert assessment methods, rating assessment of statistical data, and sociological survey data were used for data collection. For a preliminary assessment of the data obtained in the context of the study of territorial resilient, there were involved experts as representatives of domains, whose activities are related to ensuring the resilience of the region and its sustainable development:

- Domain 1: representatives of business, investors, and international experts, financial institutions.
- Domain 2: representatives of public organizations working in these areas.
- Domain 3: representatives of public organizations operating in these areas).
- Domain 4: officials of PU bodies, state organizations, whose activities are related to territorial development programs.

The generalization of the results of processing the obtained data and their reduction to specific domains allowed to establish the relative value for each of the indicators in balls (1-100), (see Table 1).

Table 1. Indicators domains of “Circles of Sustainability” in the study of the resilient of the territory

| Domain | Indicator (question of the questionnaire) | Score in balls |
|--|---|----------------|
| Domain 1 “Economic Aspects of Resilience” | 1. availability of business development infrastructure; | 65 |
| | 2. in the region there are branches of production attractive for investments | 80 |
| | 3. there is an opportunity to sell assets in which financial resources are invested; | 40 |
| | 4. the strategy of economic development corresponds to its competitive potential | 65 |
| | 5. the possibility of integration into foreign markets is provided by the existing economic potential | 70 |
| Domain 2 “Social Aspects of Resilience” | 1. the presence of a familiar social and cultural environment; | 80 |
| | 2. the general level of education of the population and the possibility of training; | 60 |
| | 3. availability of affordable housing and the level of development of the service sector | 85 |
| | 4. the ability to promptly receive qualified medical care; | 70 |
| | 5. lack of discrimination based on religious beliefs, cultural traditions | 90 |
| Domain 3 “Environmental Aspects of Resilience” | 1. environmental pollution; | 55 |
| | 2. natural and environment corresponds to the usual habitat; | 70 |



| | | |
|--|---|----|
| Domain 4 "Institutional Aspects of Resilience" | 3. flora and fauna have retained their natural originality; | 60 |
| | 4. minerals and energy resources; | 75 |
| | 5. infrastructure and industrial facilities harmonize with the environment; | 80 |
| | 1. participation of public administration bodies in the creation of infrastructure necessary for the implementation of development projects; | 80 |
| | 2. guarantees of preservation of conditions of financial activity, irrespective of change of the political and economic legislation; | 65 |
| | 3. the level of corruption in local public administration bodies that provide administrative services; | 60 |
| | 4. respectful attitude and non-interference in doing business by civil servants (officials, customs officers, tax inspectors, fire inspectorate, etc.); | 60 |
| | 5. participation of public administration bodies in the creation of infrastructure necessary for the implementation of development projects; | 75 |

Source: authors' representation

As it has been established that the risk of an impact is determined by a combination of external and internal impact on the territorial system. With the involvement of experts, a list of the most significant factors that could lead to a crisis in the Black Sea region was established. Qualitative assessment was performed using to clarify the value of the indicator coefficients, the choice of which was carried out in accordance with the conditions: constant resilient (0.9); dynamic resilient (0.8); good (0.7); very satisfactory (0.6); satisfactory (0.5); unsatisfactory (0.4); extremely unsatisfactory (0.3); bad (0.2); critical condition (0,1), (see Table 2).

Table 2. Factors influencing the territorial system of the Black Sea region

| Factor type | Determination of the factor | Score in balls |
|---------------------------|---|----------------|
| The main factor | 1. low level of competitiveness of local production, goods, and services; | 0,2 |
| | 2. restrictions on entering foreign markets; | 0,4 |
| | 3. isolated cases of confrontation on a linguistic and ethnic basis; | 0,9 |
| | 6. labor outflow | 0,4 |
| | 7.crisis of the public administration system | 0,7 |
| | 8 permanent political crisis | 0,6 |
| Adaptive potential | 1. natural resources; | 0,8 |
| | 2. developed infrastructure; | 0,8 |
| | 3.acceptance of European integration priorities | 0,9 |

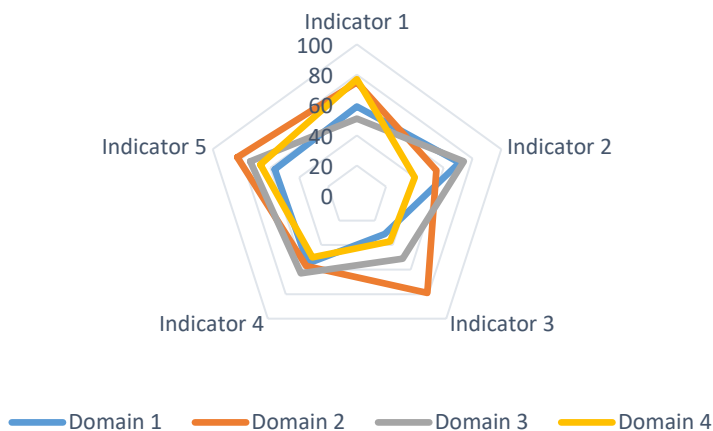
| | | |
|----------------------------|--|-----|
| Destructive factors | 4. availability of a sales market for technological products; | 0,3 |
| | 5. Visibility of discrimination for religious changes, cultural traditions | 0,9 |
| | 1. military conflict in the east of Ukraine; | 0,1 |
| | 2. political and institutional crisis; | 0,3 |
| | 3. economic crisis; | 0,4 |
| | 4. hybrid policy of Russia; | 0,3 |
| | <i>Source: authors' representation</i> | |
| | | |

Step 2. Forecast of scenarios of future changes.

The set of data presented in Table 1 and Table 2, representing the territorial dimension, in the study is considered as a basis for assessing the resilience potential of the study area. According to the model of balance between domains of “Circles of Sustainability”, the criterion of a sufficient level of resilience is the balance between the values of the indicators of each of the domains.

To determine this equilibrium, the data obtained are presented in the form of a petal diagram, (see Figure 3).

Figure 3. Resilience analysis for the Black Sea region of Ukraine (Odessa region)



Source: authors' representation

From the diagram presented in Figure 4, it is seen that the positioning of the circles representing the individual domains is not in a single plane. Thus, it is possible to draw a reasonable conclusion that the region is in dynamic inresilient.



3) Step 3. Assessing evidence of future changes.

The survey established not only the list of evaluation indicators but also the level of their significance for ensuring the sustainability of the region, according to which it is evaluated by experts.

The data correction made it possible to determine the range of values characterizing the territorial resilient of the Black Sea region of Ukraine (Odessa region), depending on the possible variants of external influences.

Using the example of the development of military conflicts in Ukraine, Georgia, and Moldova, one can show how their nature changes over time. The beginning of the conflict is a unique event that has a specific form due to the participation of Russia and the place of its beginning. Its development is a sequence and combination of covariant and seasonal influences.

Extending the main provisions of territorial resilient to the situation in the conflict zones in Georgia, Moldova and Ukraine, it should be noted that in the event of external military aggression, their potential for territorial resilience has the following features:

- the emergence, development, and spread of the conflict led to significant changes in the ecology, economy, social sphere, not only in the region where it arose but also in the deep crisis of the conflict countries;
- the existing ability of the countries of conflict to adapt, allowed them to implement the necessary qualitative changes in the regional structure;
- in the event of a military conflict, there is no potential for territorial resilience that can maintain the resilient and durability of the territorial system;
- in conditions of long-term preservation of the state of conflict, the possibility of increasing the potential for the resilience of the territory should be based on the following provisions: a military conflict excludes absorptive capacity; the use of adaptive capacity is a real opportunity for the territorial system to mitigate potential damage; transformative capacity, due to the local nature of the conflict, has a limited character.

Conclusions

The possibility of studying the resilient of the territorial system in some cases is limited by situations that have arisen in the crisis zone. Natural disasters, epidemics, or military conflicts often make it impossible to conduct any empirical research. A possible way out is to obtain an indirect assessment, which will be based on the degree of influence of the crisis situation on adjacent territories.

A reliable study of the resilience of the territorial system is possible on the basis of a comparative analysis of quantitative and qualitative data linking the territorial dimension with external and internal factors of influence. But the nature of these data is different, which in some cases does not allow obtaining a final integral estimate of the resilient potential.



The study shows that the inconsistency arising from the combination of qualitative and quantitative data of a different nature can be solved by applying the domains of the “Circles of Sustainability” interaction model.

Wherein:

- the use of the model of interaction and balance of domains of “Circles of Sustainability” corresponds to the accepted definition of the concept of “territorial resilience”, according to which the dynamic balance of the characteristics of the territorial system is a condition for ensuring its security, resilience, reliability and integrity;
- using the LED concept to establish cause-and-effect relationships between the influence of external and internal negative factors on a local territory and the potential of its resilient, to allow determining the level of its resilience and the possibility of adaptation to external influences;
- involvement of “Government actors”, parliamentarians, and Ministries, as well as all stakeholders in the process of analyzing the characteristics of territorial resilience, is a prerequisite in order to develop a common vision of risks, resilience and development priorities for the territory for the future;
- the condition of balance between domains reduces the contradiction between their interests, priorities, and goals, which is a potential source of conflict, destructive forms of interaction and may ultimately lead to a decrease in the level of territorial resilience;
- qualitative and quantitative data characterizing domain indicators allow for a detailed examination and determination of the degree of impact on the territorial system of external and internal negative factors of influence, to obtain an objective assessment of the crisis situation and to prepare a forecast of its development for the future;
- evaluation indicators representing the relevant “domains” have different significance from the point of view of the participants in the process of implementation of development programs and in each case should be evaluated separately using the appropriate significance factors.

Of course, the possible approach presented in the article to solving the problem of resilience of spatial development of a territory is not a complete study. The urgency of the problem of regional development remains.

Acknowledgement: The authors are grateful to colleagues of the Chair of Public Administration and Regional Studies, Odessa Regional Institute for Public Administration of National Academy for Public Administration, the President of Ukraine, who took part in the discussion for the main theses of this article and preparation of recommendations for conducting a study of the resilience of the Odessa region.



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ANALYSIS OF INCOME AND HUMAN DEVELOPMENT IN THE EU COUNTRIES

Daniela Gabriela COZMA^{*}, Margareta BOCANCIA^{}**

Abstract

For the past three decades there has been an increase in the inequality of the income of different countries, as a consequence of unequal progress. Starting from this issue, the objective of this study is an analysis of the tendency to inequality of income and human development, conducted by grouping the EU member countries in former communist countries and countries that did not have a communist regime between 1945 and 1990. The initial hypothesis is that there are significant disparities in the distribution of income between the former communist countries and non-communist countries during the above-mentioned time range, these states currently being members of the European Union. In our scientific endeavour, we used EUROSTAT and UNDP (United Nations Development Programme) databases, with the analysed period being 2009-2018. To process the data, we used the multivariate hierarchy building technique (dendogram), followed by clustering, considering the GINI and HDI values, based on measuring dissimilarity, to identify the existence of one of the two alternatives (dispersion or uniformity) for the distribution of the values of the two indexes. In the last part of the article we analyse the influence of the European geographical space and HDI on the COVID phenomenon, between 31.03.2020-30.08.2020.

Keywords: GINI index, HDI index, COVID phenomenon

Introduction

The measurement of the economic-social development is achieved with the help of some compound indices, the compounds attribute coming from the fact that these reunite in their formula variables selected based on the decision of the researcher by weighting. Their main meaning is that of quantitative variable, but there may also be a qualitative meaning (possibly of interpretation on the ordering scale) when the quantitative interpretation is not significant.

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Certain indices measure different distributions of variables in different geographical areas (countries), but relatively few such indices capture the distributions over time. Despite all their limitations noticed in the literature, these indices cannot be reduced only to the expression of an ideological or social attitude. However, they remain a quick way to simplify a complicated economic reality. According to Todaro (1989), these indices are large-scale assessments of economic development under the effect of social, political or economic influences.

According to Sainz (1989), the socially motivated contradictory economic aspects in the countries of the world assume a deeply heterogeneous character, which, in the interpretation of the economic realities, forces the combination of both synthetic and analytical indicators. This justifies the opinions of some researchers who see only the usefulness of indices that independently measure the social situation, while other researchers see indices as contrasts between different economic realities Booysen (2002). In order to compare the well-being between different states, it is necessary to agree on a universal meaning of its components, but also to highlight some intercultural aspects. A certain standard of social development cannot ignore the perception at the level of a geographical region of the economic realities, universally valid, but perceived differently according to the customs, traditions, ethical and behavioural norms established in a certain area.

1. Literature review

A review of the specialized literature on inequality reveals divergent views of researchers. Thus, there are researchers who claim that there has been an increase in inequality over time (Wade, 2004), and researchers who report a reversal of the trend of inequality over time (Milanovic, 2005; Sala-i-Martin, 2006). The presence of inequality hinders the development of human capital, contributing to lower levels of confidence, skills, social mobility and physical health (Seery and Caistor, 2014) and represents a possible barrier to achieving a higher standard of living (Carsrud and Brännback, 2011). McCall and Percheski (2010) consider that social policy models the distribution of income in the form of tax structures, income transfer programmes and wage-setting institutions, Pathak and Muralidharan (2018) finds that income inequality increases the likelihood of individual involvement in social entrepreneurship, on the part of the affected persons, while, on the contrary, the income mobility decreases this likelihood of involvement.

In what regards the measurement of inequalities, the GINI coefficient remains the dominant choice (Sala-i-Martin, 2006), as this highlights the interval between a perfectly equal distribution (a GINI coefficient equal to 0) up to the maximum inequality in which case a person owns all the wealth (a GINI coefficient equal to 1), but makes interpretation difficult when engaging in transnational comparisons (Ravallion, 2003).

The HDI index is a composite index, which refers to the factors that monitor life expectancy, education and per capita income, indicators that shape the development of society, the extent to which we can speak of a progress of humanity.



The HDI concept has its origins in the documents developed in the context of the Human Development Report of United Nations Development Programme (UNDP). These were designed and launched by Pakistani economist Mahbub ul Haq in 1990 and were explicitly intended to “shift the focus of the development economy from national revenue accounting to people-centred policies.” Among the leading economists whom Mahbub ul Haq turned to, important name in the economic literature can be cited, such as Paul Streeten, Frances Stewart, Gustav Ranis, Keith Griffin, Sudhir Anand and Meghnad Desai.

A shortcoming reported by several authors refers to the errors that accompany the data in health, education and income statistics, used to substantiate HDI. Thus, the following were identified as sources of error: (i) the timeliness of the data, (ii) the substantiation of the related formulas and (iii) the establishment of thresholds for assigning a certain degree of development that a country has.

It is suggested that the usual practice of the United Nations to rank countries according to the so-called “development basket” is incorrect, as it uses arbitrary limit values, turning the official statistics thus constructed into an indisputably deliberate benchmark which politicians, investors, charity providers and also the general public should refer to (Wolff *et al.*, 2011).

2. Research methodology

The objectives we set ourselves were:

- identification of disparities in the distribution of income between European countries that were/were not communist based on the values of the GINI and HDI index, from 2009-2018, registered in 31 European countries;
- identification of the influence of the European geographical area and HDI values on the evolution of deaths registered between 31.03.2020-31.08.2020 in the 31 European countries subject to our study.

In our approach, we conventionally divided the 31 states into two large zones, depending on the recent historical past of each country.

The two zones were represented, on the one hand, by the “former communist” countries (symbolized in fig. 1 by the abbreviation “yes”), members of the Warsaw Pact between 1955 and 1990, under the political influence of the former USSR, and on the other hand, by the countries that did not belong to this politico-military group, conventionally called “former non-communists”. The initial hypothesis was that there are significant disparities in the distribution of income between the group of countries that were/were not communist in the mentioned interval, currently these states being members of the European Union. The databases, processed with SPSS software, belong to EUROSTAT, UNDP (United Nations Development Program) and World Bank Open Data. The multivariate technique of constructing a hierarchy in the form of a dendrogram, as well as the establishment of clusters based on GINI and HDI values, allowed us to measure the dissimilarity in order to identify the dispersion or uniformity for the distribution of the two indices.



3. Results

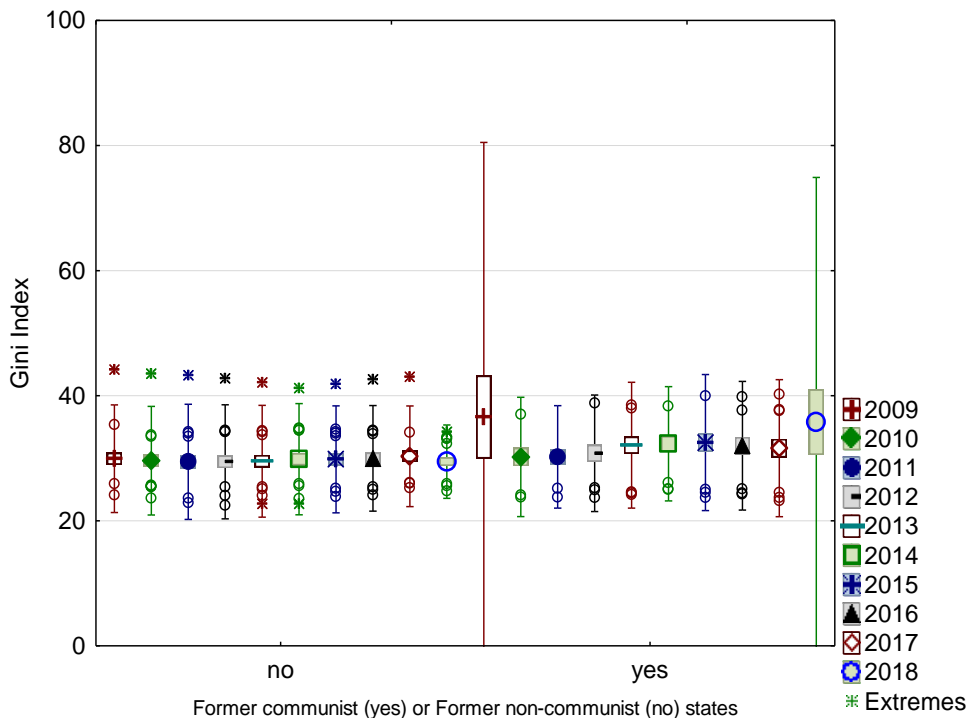
3.1. The uniformity of the distributions of the GINI index values for the years 2009-2018, in the EU countries

The GINI coefficient is considered for the following reasons:

- a) the perception of the population at the level of Romania is that of income inequality;
- b) taking into account, according to EUROSTAT, only the monetary incomes, ignoring the incomes in kind. The consumption of agri-food products from the own resources of the rural household represents an important component of the consumption of the Romanian households, and therefore the failure to consider this component leads to an overestimation of the inequality in Romania.

The values of the Gini index for the years 2009-2018. Based on these Eurostat data, the data in Figure 1 result.

Figure 1. Distribution of the national mean values of the GINI index, by years, according to the recent historical past of the respective country.



Source: authors' representation

Figure 1 shows the distribution of the GINI index on an approximate segment between 20 and 40 percent, for each year, between 2009 and 2018, for the group of



European countries considered, conventionally divided into two large zones, depending on the recent historical past of each country, the two areas being represented, on the one hand, by the “former communist” countries (symbolized in figure 1 by the abbreviation “yes”), members of the Warsaw Pact between 1955 and 1990, under political influence of the former USSR, and on the other hand, by the countries that did not belong to this politico-military group, conventionally called “former non-communists” (symbolized in figure 1 by the abbreviation “no”). The “no” group massively records extreme values for all the years in the considered interval, while the “yes” group is not in this situation. In the “yes” group, the years 2009 and 2018 bring considerable extensions of the value ranges, exceeding the limit represented by the relation $\text{mean} \pm 2 * \text{standard deviation}$. In other words, the mentioned years include relatively high values of GINI indices in this group, an aspect that no longer appears in the years 2010-2017.

3.2. Comparing the multiannual means of the GINI index in case of ad-hoc designated groups in European countries

Keeping the same grouping described in the previous section, the existence of possible significant differences of means is checked by tests *t* (Student) between independent samples (represented by the “yes” group compared to the “no” group), for the years 2009-2018. This inferential approach will determine whether there are differences between the GINI means of the countries in one group as compared to the similar means of the countries in the other group.

Table 1. T-tests mean of Gini index; Group 1: no Group 2: yes, Former communist (yes) or Former non-communist (no) states

| Year | Mean - no | Mean - yes | t-value | df | p | Valid N - no | Valid N - yes | Std.Dev. - no | Std.Dev. - yes |
|------|--------------|---------------|---------|----|-------|-----------------|------------------|------------------|-------------------|
| 2009 | 29.919 | 36.582 | -1.361 | 30 | 0.184 | 21 | 11 | 4.302 | 21.963 |
| 2010 | 29.605 | 30.209 | -0.362 | 30 | 0.720 | 21 | 11 | 4.344 | 4.768 |
| 2011 | 29.419 | 30.218 | -0.484 | 30 | 0.632 | 21 | 11 | 4.603 | 4.094 |
| 2012 | 29.429 | 30.792 | -0.820 | 31 | 0.419 | 21 | 12 | 4.558 | 4.660 |
| 2013 | 29.529 | 32.093 | -1.581 | 33 | 0.123 | 21 | 14 | 4.470 | 5.032 |
| 2014 | 29.843 | 32.307 | -1.589 | 33 | 0.122 | 21 | 14 | 4.446 | 4.568 |
| 2015 | 29.824 | 32.507 | -1.630 | 33 | 0.113 | 21 | 14 | 4.279 | 5.442 |
| 2016 | 29.981 | 32.007 | -1.275 | 33 | 0.211 | 21 | 14 | 4.221 | 5.144 |
| 2017 | 30.315 | 31.607 | -0.794 | 32 | 0.433 | 20 | 14 | 4.024 | 5.477 |
| 2018 | 29.458 | 35.771 | -1.393 | 31 | 0.173 | 19 | 14 | 2.935 | 19.565 |

Source: authors' representation

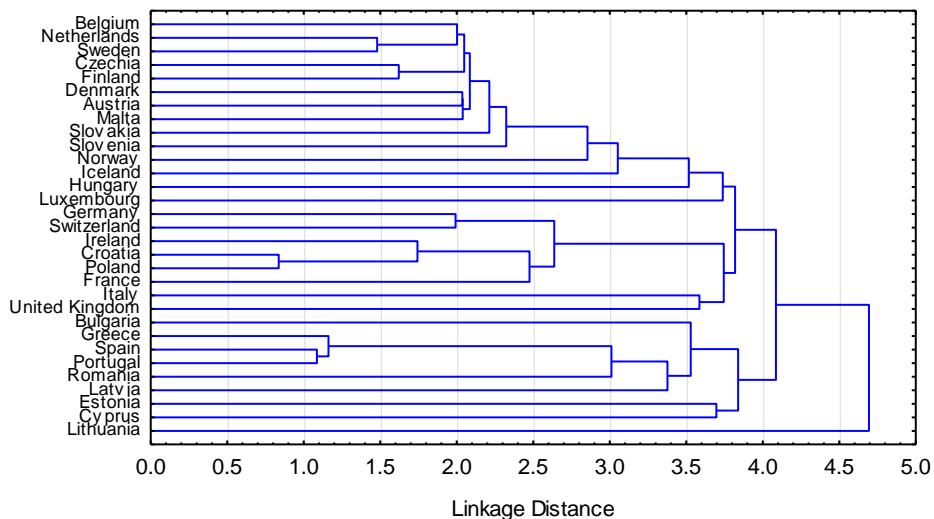
In none of the years in case of which comparisons were made, was there a statistically significant difference between the means of the GINI indices between the “yes” and “no” groups. As such, although there are differences in the distribution

of the values studied between the countries in the two reference groups, these are not statistically significant, so for none of the years indicated in table 1 we can see any difference due to the former political regime taken as reference ($p < 0.05$)

3.3. Creating clusters by agglomerating the variables “GINI Index” and HDI indices

Cluster analysis is a multivariate analysis technique based on the interpretation of numerical variables, mainly their grouping into entities called clusters, established based on hierarchical classification and the distance between cluster environments. Eurostat data are used for the 2 categories of data. Euclidean distance is the hierarchical classification criterion used in the following considerations.

Figure 2 Gini Index-Tree Diagram for all 31 Variables, Single Linkage, Euclidean distances.



Source: authors' representation

The GINI values of Croatia and Poland (fig.2) show the greatest “similarity”, as these combine in the first cluster at a short connection distance of about 1 conventional unit, while the GINI values of Lithuania enter the last cluster created, at the longest connection distance, of over 4.5 conventional units. The values in case of Lithuania show the most accentuated “dissimilarity”, a size that is the opposite of “similarity”. The similarity of Poland and Croatia is also given by the fact that both countries have a high level of human development, with Poland being the only country that did not enter the recession, while Croatia is classified by the World Bank as a country with a high-income economy. We structure the clusters (tab.2) according to the values of the means and standard deviations of the GINI index.



Tabel 2. Values of the means and standard deviations for GINI indices at the level of each country

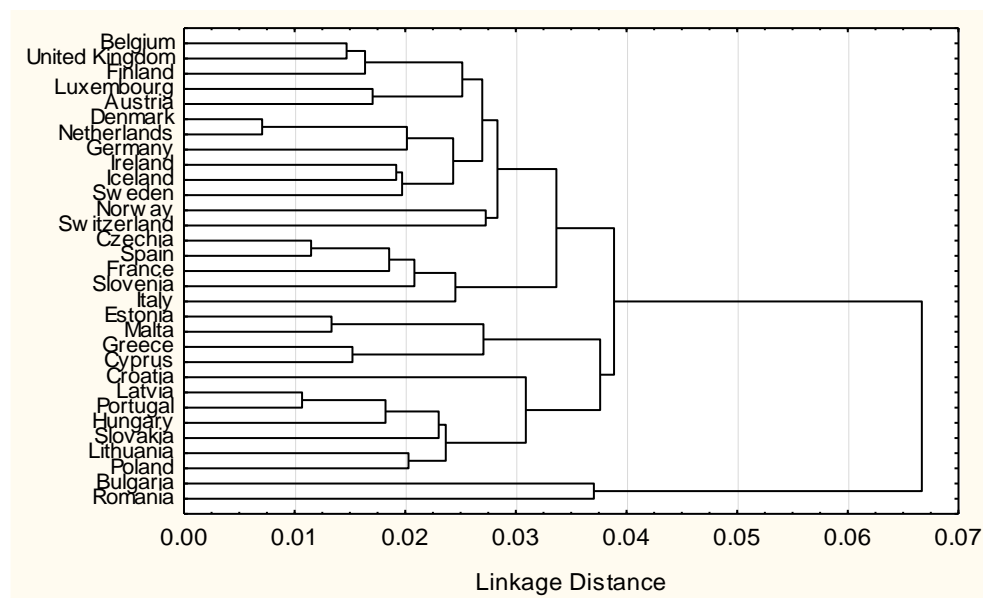
| Case | Mean | Std.Dev. | Case | Mean | Std.Dev. |
|-------------------|--------|----------|-----------------------|--------|----------|
| Belgium | 26.243 | 0.270 | Hungary | 27.357 | 1.565 |
| Bulgaria | 35.329 | 1.636 | Malta | 27.900 | 0.606 |
| Czechia | 24.971 | 0.198 | Netherlands | 25.943 | 0.680 |
| Denmark | 27.086 | 0.508 | Austria | 27.471 | 0.427 |
| Germany | 29.514 | 0.771 | Poland | 30.714 | 0.445 |
| Estonia | 33.100 | 1.548 | Portugal | 34.143 | 0.299 |
| Ireland | 30.286 | 0.587 | Romania | 34.671 | 1.339 |
| Greece | 34.014 | 0.590 | Slovenia | 24.229 | 0.479 |
| Spain | 34.171 | 0.461 | Slovakia | 25.029 | 0.950 |
| France | 29.843 | 0.650 | Finland | 25.529 | 0.250 |
| Croatia | 30.714 | 0.618 | Sweden | 26.386 | 0.715 |
| Italy | 32.471 | 0.431 | United Kingdom | 31.843 | 0.995 |
| Cyprus | 31.886 | 1.955 | Iceland | 24.114 | 0.926 |
| Latvia | 35.329 | 0.457 | Norway | 23.443 | 0.856 |
| Lithuania | 35.214 | 2.208 | Switzerland | 29.300 | 0.462 |
| Luxembourg | 28.814 | 1.385 | | | |

Source: authors' representation

Countries with relatively high GINI values may have different values of the standard deviation. For example, Bulgaria, Romania, with a GINI mean of over 34, but with standard deviations of over 1.3, on the one hand and on the other Latvia or Spain with high values of the Gini index also, still over 34, but with standard deviations below 0.5, mark two distinct situations. The relatively high value of the Gini index leads to the idea of an inequality in income distribution, but the closer the standard deviation is to zero, the more frequent the mean value in the sample. Therefore, a situation would be in Spain, where the mean of 34.17 reinforces the assumption of a somewhat unequal distribution of income with a relatively high weight in the population, while in Romania the mean of 34.67 does not have the same weight as the value of 34.17 in Spain, due to the higher dispersion (standard deviation) in Romania, as compared to Spain.

Regarding the HDI index, we can find large differences in the order of entry into clusters (fig.3) as compared to the GINI index, the obvious proof that they measure different realities, but, to some extent, comparable. Moreover, the Romania and Bulgaria group enters the clustering at the latest, remaining distinct from the rest of European countries up to the connection distance of around 0.04. The much smaller values of the connection distances are noticeable, given the sizes (sub-humid here, as compared to values between 30-40 in the case of the GINI index).

Figure 3. HDI Index-Tree Diagram for all 31 Variables, Single Linkage, Euclidean distances.



Source: authors' representation

Tabel 3. Distribution on 2 clusters, of European countries, according to HDI values

| Cluster.1.HDI | Distance |
|------------------|----------|
| Bulgaria | 0.051 |
| Czechia | 0.028 |
| Estonia | 0.017 |
| Greece | 0.017 |
| Spain | 0.032 |
| Croatia | 0.023 |
| Italy | 0.030 |
| Cyprus | 0.014 |
| Latvia | 0.012 |
| Lithuania | 0.006 |
| Hungary | 0.014 |
| Malta | 0.019 |
| Poland | 0.006 |
| Portugal | 0.011 |
| Romania | 0.043 |
| Slovakia | 0.004 |

| Cluster.2.HDI | Distance |
|-----------------------|----------|
| Belgium | 0.006 |
| Denmark | 0.010 |
| Germany | 0.015 |
| Ireland | 0.011 |
| France | 0.032 |
| Luxembourg | 0.018 |
| Netherlands | 0.009 |
| Austria | 0.013 |
| Slovenia | 0.028 |
| Finland | 0.001 |
| Sweden | 0.009 |
| United Kingdom | 0.005 |
| Iceland | 0.008 |
| Norway | 0.032 |
| Switzerland | 0.024 |

Source: authors' representation



From the point of view of the HDI index (tab.3), Romania belongs to cluster 1, which includes only two economically strong countries in Europe, where there is also a massive community of Romanians (Spain and Italy) or Baltic countries, or from the east and centre of the continent, and between which there are, in economic and social terms, certain connections and affinities.

The other cluster, the one conventionally denoted by 2, includes either traditional Western European countries, or Great Britain, which, although in a post-Brexit period, remains a redoubtable economy, so the hierarchies produced by means of the conventional cluster analysis, as well as the dendrogram-like hierarchy produce results that complement each other well, each providing economic information, but with a strong social touch.

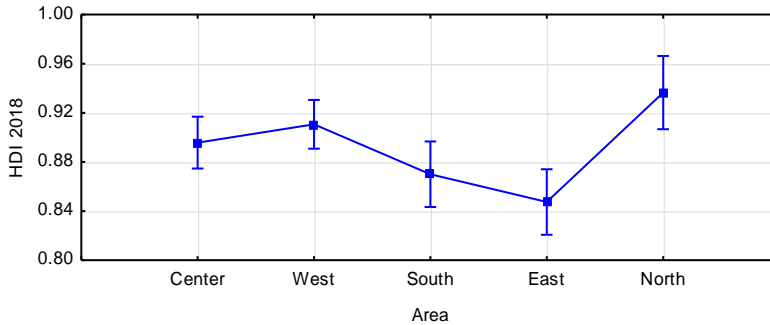
3.4. Research of the influences exerted by the HDI variable on the effects produced by the COVID variable

We chose the database consisting of the 31 states in the European geographical area, the same states the HDI values of which have already been discussed. These states are grouped into 5 geographical regions in Europe (East, West, South, North, Centre), assuming that the geographical specificity and socio-economic realities differ depending on the area. With regard to the COVID variable, the following quantitative aspects were taken into account for March 31, 2020 and August 31, 2020, respectively:

- a) total number of people who have the infection with the new coronavirus, Sars Cov 2;
- b) the number of deceased persons, due to the complications suffered as a result of the infection with the mentioned virus;
- c) the percentage of deceased persons calculated from the total number of persons infected with this virus.

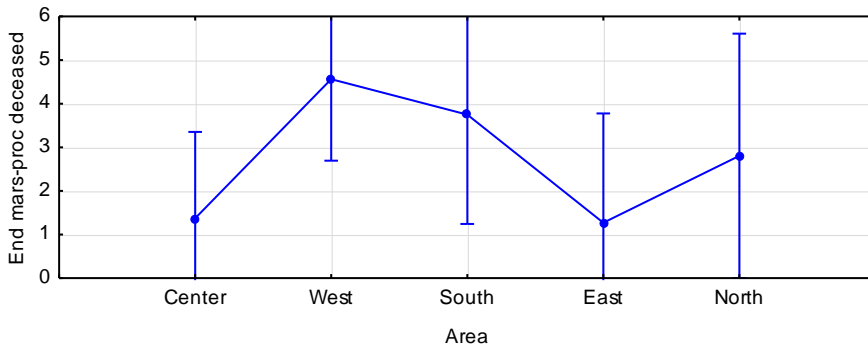
The influence of zoning (geographical area of the country) on HDI, respectively, of the percentage of deaths due to COVID, separately for March 31, 2020 and August 31, 2020, respectively.

We applied a one-way ANOVA test, in which the quantitative variable is represented by the HDI values /the percentage of deaths due to COVID (Figure .4), and the factor-variable is given by the geographical area of the respective country.

Figure 4. The influence of the area on HDI.

Source: authors' representation

The ANOVA test is statistically significant, $F(4,26) = 6.9678$, $p = 0.0006$, so between the means of the HDI values of the countries in the considered areas, the highest HDI is registered in Northern Europe, and the lowest in Eastern Europe.

Figure 5. The influence of the zone on the values of the percentage of deaths due to COVID on March 31, 2020.

Source: authors' representation

Regarding the influence of the zone on the deaths due to COVID (figure 5) on 31.03.2020, the ANOVA test is statistically insignificant, $F(4, 26) = 2.0310$, $p = 0.11943$. It can therefore be stated that no legitimacy can be established between the means of the death rate values due to COVID, as was the case with the influence on HDI in the previous figure.

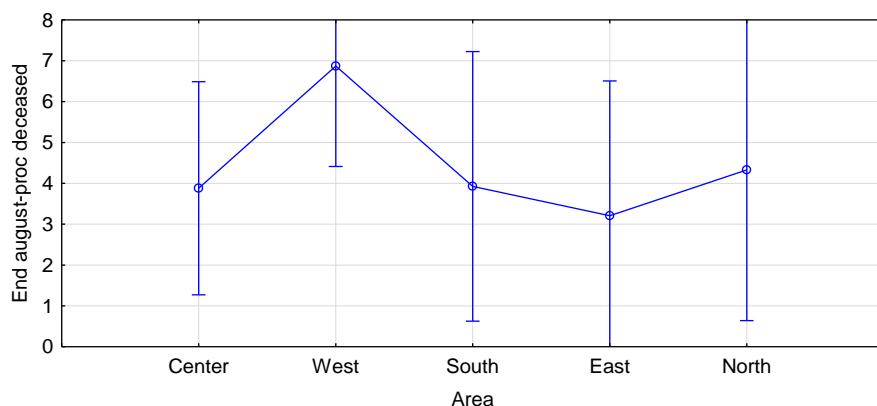
Even in this case, the undesirable mortality record in the southern and western countries of the continent can be observed, while in the eastern countries, this percentage is low, comparable to that of the central European countries.

Western and southern European countries, with well-developed medical systems, should have stopped the virus from spreading without problems, but, paradoxically, they were surprised by the scale of the phenomenon. Apparently, part of the population of these countries with a high HDI is more vulnerable than the



population of countries with a lower HDI. An explanation of this paradox would be the fact that the authorities of the respective states realized relatively late the gravity of the COVID phenomenon, which explains the peaks found in the chart from figure 5, valid on 31.03.2020. 5 months later we find the existence of a peak of growth attributed to Western European countries (Figure 6) which could be due to the large number of tests performed in these countries, as compared to other European countries. In addition, the health systems in these countries serve a significant percentage of the elderly, people with severe chronic diseases and overweight people.

Figure 6. The influence of the zone on the values of the percentage of deaths due to COVID on August 31, 2020.



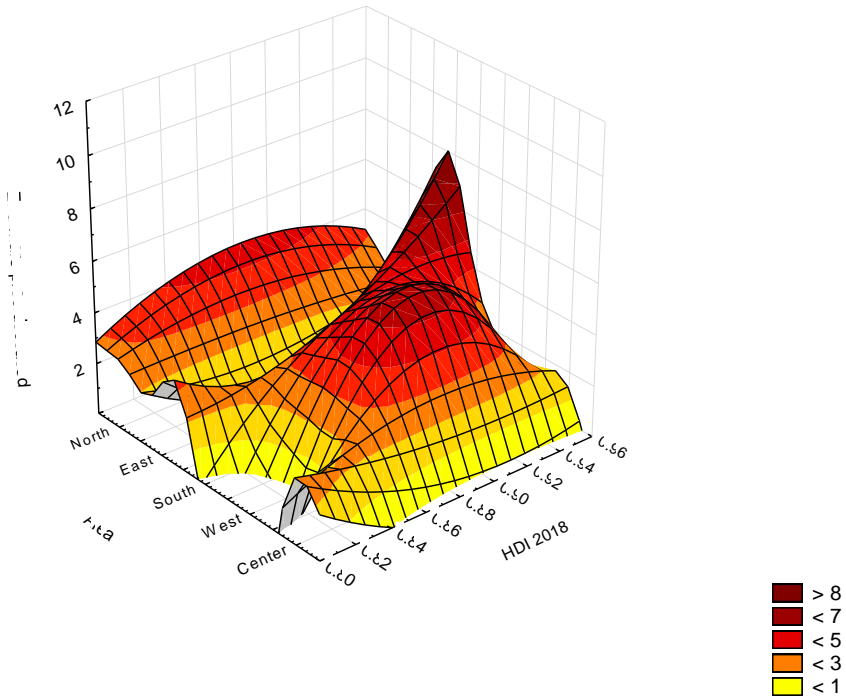
Source: own representation

As concerns the influence of the area on the deaths due to COVID (fig.6) on 31.08.2020, the ANOVA test is statistically insignificant, $F(4, 26) = 1.2124$, $p = 0.32946$. We state that no legitimacy can be established between the means of values of death rates due to COVID, as was the case of the influence on HDI in Figure 4. In conclusion, the effects measured by Test F (one-way ANOVA) are obviously distinct, namely incomparable, between HDI and COVID.

The simultaneous influence of zoning (geographical area of the country) on HDI and the percentage of deaths due to COVID, separately for March 31, 2020 and August 31, 2020, respectively

Three-dimensional Figure 7 shows the 5 conventional areas of affiliation of the countries in question, the death rates due to COVID and the latest HDI values. The combination of HDI and of the zone influence results in the finding of higher percentages for COVID mortality, on March 31, 2020, in Eastern and Southern European countries, a situation somewhat different from that reported in Figure 5.

Figure 7. Simultaneous influence of zoning (geographical area of the respective country) on HDI and the percentage of deaths due to COVID, for March 31, 2020.



Source: authors' representation

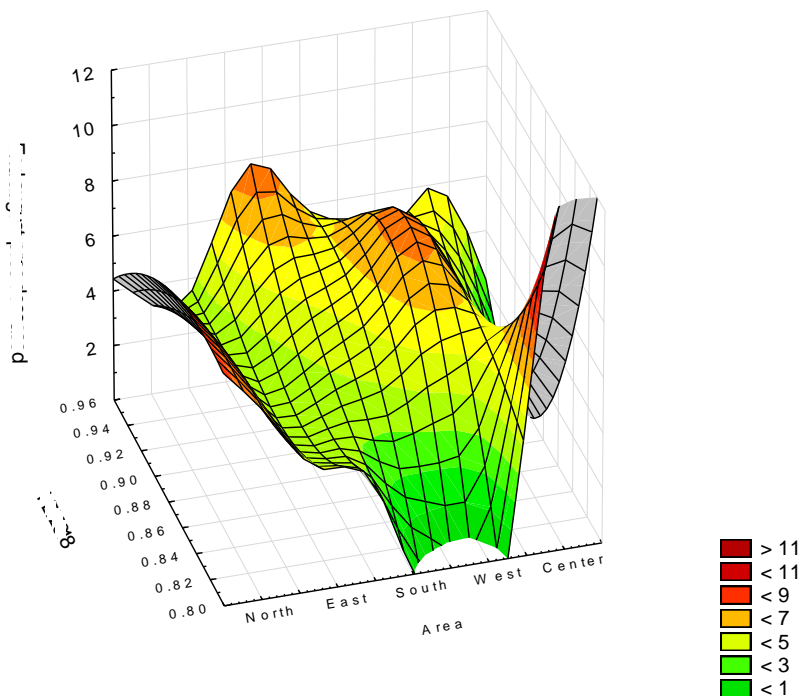
In addition to the higher values of this time (end of August 2020), compared to the end of March 2020, one can see a certain balance between conventionally delimited geographical areas, while maintaining a decrease in death rates for the North area, which, according to Figure 4, recorded in 2018, a mean of over 0.90 of the HDI index.

The following is an illustration by means of the cluster analysis (dendrogram) corresponding to the death rate assigned to COVID on March 31, 2020, the first notable moment of the pandemic spread, Figures 9 and 10.

We opted for the cluster analysis in order to identify a set of homogeneous countries, to detect similarities between the countries belonging to the same cluster. The formation of the groups of countries was based on the calculation of the Euclidean distance, the final form of representation of the groups being the dendrogram.



Figure 8. The influence exerted simultaneously by the zoning (the geographical area of the respective country) on HDI and the percentage of deaths due to COVID, on August 31, 2020.



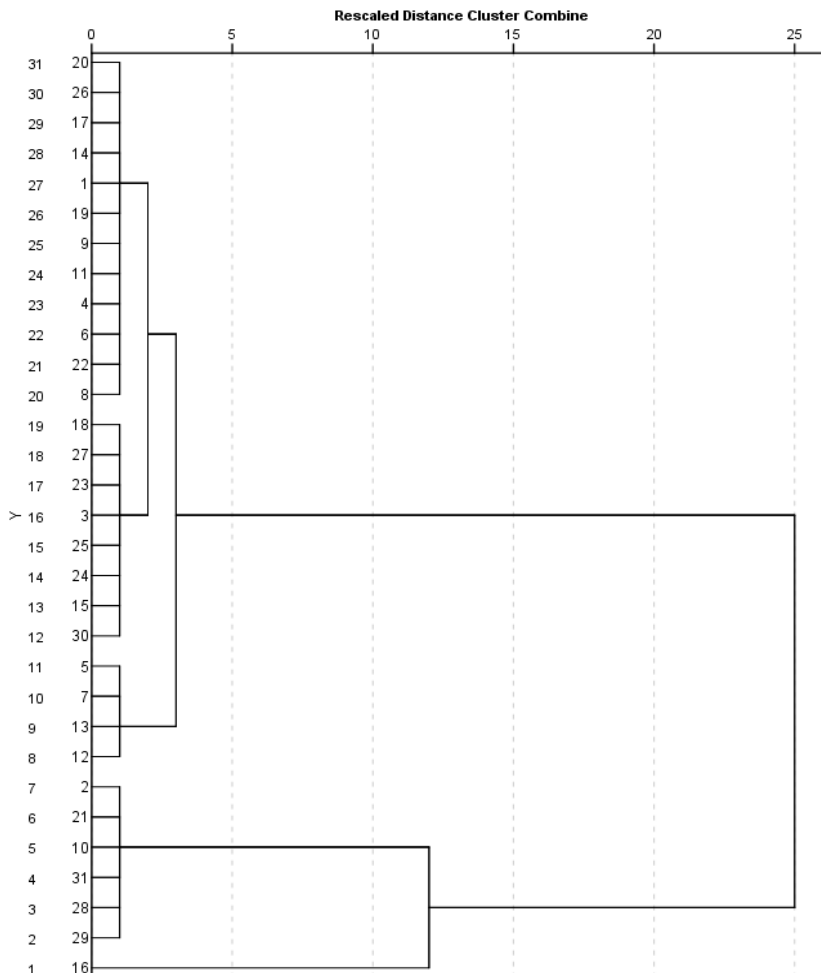
Source: authors' representation

The small Euclidean distance between the death rate values of a group of countries allowed us to combine them into a cluster.

States marked with codes 2, 10, 21, 28, 29, 31 (are the ones with the highest death rates due to SARS Cov 2): Belgium, France, the Netherlands, Spain, Sweden, UK. These enter the clustering process at the latest, together with 16, Italy, combining, finally, with a cluster formed in stages of 3 groups, these including initially 8, 12, respectively 4 countries. Romania (code 25) has a more favourable evolution, being part of the group of 8 countries from an already cited cluster. Because the distances between the distant branches of the dendrograms in Figures 9 and 10 are high, as compared to the close branches, we interpret the grouping of countries with caution. However, as principles of grouping the previously mentioned states, we notice the temporal moment of the onset of the COVID 19 pandemic and the triggering cause. Thus, Belgium confirmed at the beginning of February 2020 the spread of the virus, and the authorities link this spread to the return of some tourists coming from northern Italy. France confirms the existence of the virus in early February 2020 and considers the annual meeting of the Christian Open Door

Church to be the key event that triggered the spread of the virus. The Netherlands confirms the virus at the end of February 2020, the triggering cause being considered a Dutch citizen returned from Italy, and Spain confirmed the spread of the virus in early February 2020. Sweden and the UK confirm the virus in late February 2020 and early March 2020. In Italy, the virus was first confirmed in early February 2020, when two Chinese tourists tested positive. Regarding Romania, the confirmation of the virus was made at the end of February and, as a peculiarity, the triggering cause was given by the people coming from Italy.

Figure 9. Dendrogram corresponding to the death rate assigned to COVID, on March 31, 2020.

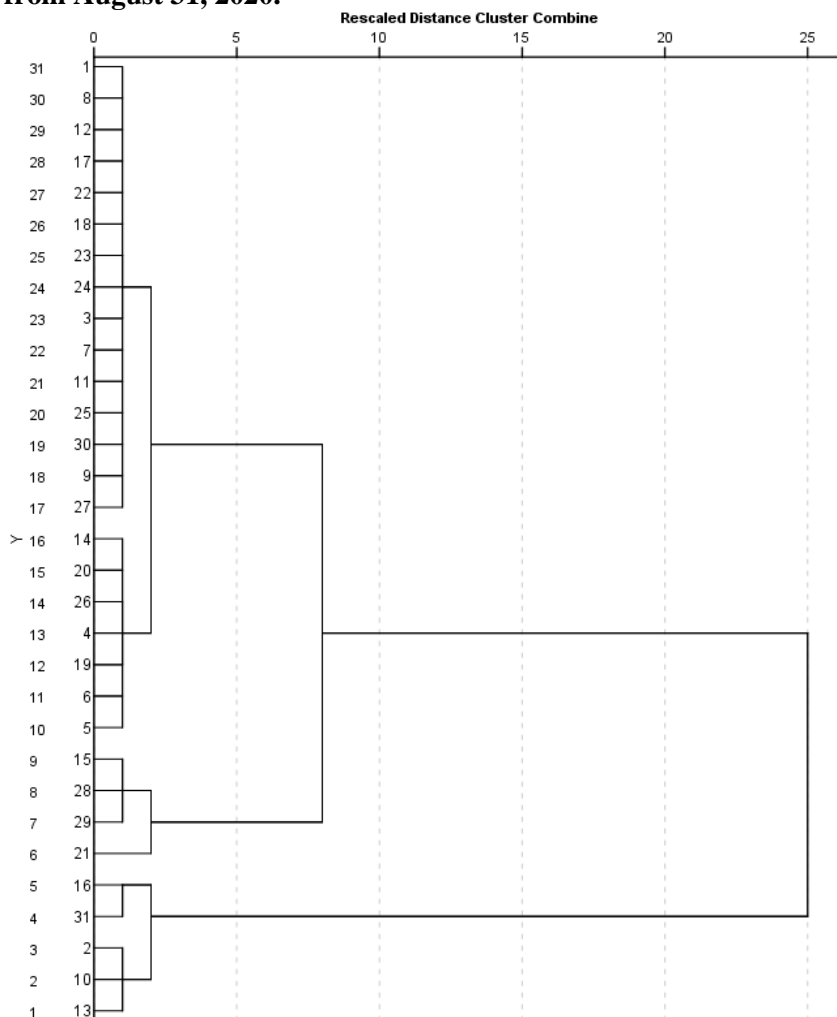


Source: authors' representation



We show you the dendrogram corresponding to the death rate, assigned to COVID at the most recent time, August 31, 2020.

Figure. 10 Dendrogram corresponding to the death rate assigned to COVID, from August 31, 2020.



Source: authors' representation

Romania maintains its position from March 31, to be included in the first cluster, based on the Euclidean distance from its centre. Finally, the group of countries entering the clustering process at the latest consists of the countries marked with codes 2, 10, 13, 16, 31: Belgium, France, Hungary, Italy and the UK. As of August 31, 2020, the group of states with the highest death rate (latest in clustering) no longer has the same component as on March 31, 2020. In the group of “latest

clustered” states there are only three of the countries that had the same position at the beginning of the pandemic: Belgium, France and the UK. A possible explanation could be that the respective countries are countries with a high individual freedom in relation to the state authorities, and the authorities have delayed the introduction of pandemic restriction measures.

Conclusions

In countries where there is a large income inequality, a multifaceted phenomenon, there is a significant influence on the economic and social environment, as there is a negative impact on economic growth, on the opportunities enjoyed by citizens of those countries and on the access to jobs and decent health services. In our study we tried to identify if there are significant disparities in terms of the distribution of income between the group of countries that were/were not communist, starting from the GINI and HDI indices, in the period 2009-2018.

The result was that, although there is a relatively widespread perception that income inequality in Eastern European countries with post-communist economies has a greater influence on socio-economic and political development as compared to non-communist countries in Europe, we did not identify significant differences between the two categories of states (noted in our study “yes” and “no”) at the level of Gini indices means, in the period 2009-2018. This result is not accidental, as those years were the years of the pronounced economic crisis at the turn of the first two decades of the current century. Also, the “yes” group comes from countries that have had, for a long time, centralized economies, relatively uniform incomes and, in the years after the economic changes subsequent to the change of political regime, these countries have not yet registered the dispersion of incomes displayed by the countries in the “no” group.

As compared to non-communist countries, countries in the socialist system have recorded lower levels of income inequality, but have seen some increase in inequality after the fall of communism (Bandelj and Muhutga, 2010). The limits of our conclusion may result from the fact that the GINI index is a relative measure, which measures absolute wealth and not relative wealth, the use and interpretation thereof being controversial, because in a country with a developing economy the GINI index may increase (due to income inequality increase), while the number of people in absolute poverty may decrease (Mellor, 1989). Another limitation of the GINI index is that it is not an adequate measure of egalitarianism, because it only captures the dispersion of income in a country, as it only reflects the distribution of income independent of the GDP of that country.

Regarding the human development index (HDI) which is a composite statistical index of life expectancy, education and per capita income indicators, we found that the highest HDI is recorded in the countries of northern Europe, and the lowest index is in Eastern European countries.

Since COVID-19 triggered a crisis in human development, disrupting income, health and education system, we tried to capture in our study whether there is an



influence of the European geographical area and the HDI index on the evolution of deaths recorded between 31.03.2020-31.08.2020 in the 31 European countries subject to our study.

The conclusions were:

- Regarding the influence of the zone on the deaths due to COVID on 31.03.2020, we did not find a positive correlation between the geographical area and the number of deaths;
- The combination between HDI influence and geographical area allowed us to identify higher percentages for COVID mortality, as of March 31, 2020, in Eastern and Southern European countries;
- On 31.08.2020, compared to 31.03.2020, we noticed a certain balance between the conventionally delimited geographical areas, with the maintenance of a decrease in the death rates for the North area.

We believe that this crisis brings many challenges to all countries that will cause them to balance public health policies with economic and social activities and force them to promote the inclusive human development in the coming years. Improving access to social protection for vulnerable low-income groups could reduce inequalities in human development and the efficient mobilization of economic resources will potentiate effective responses destined to counteract the effects of the COVID 19 pandemic.

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MEASURING FINANCIAL PERFORMANCE: FINANCIAL RATIOS VS. ECONOMIC VALUE ADDED

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Silvia AVASILCĂI***

Abstract

The study presents a model of comparative analysis of financial performance based on two categories of instruments and evaluates the interdependencies between different performance measures. Based on the information gathered from secondary sources, we determined, interpreted and dynamically analysed the following indicators: return on assets, return on equity, degree of global indebtedness, current and quick liquidity and economic added value. The obtained results allowed the shaping of two performance profiles on the basis of which the ranking of the analysed companies was made. In order to identify the interdependencies between the different performance measures, we performed a first regression analysis which indicated that the company's ability to create added economic value depends on achieving high rates of economic profitability. Because in the analysed period there were major variations of the macroeconomic indicators, we performed a second regression analysis which indicated that the economic growth rate positively influences the two rates of return.

Keywords: financial performance, ratios, economic value added, companies

Introduction

The study is based on the premise that the success of a business depends both on the quality of methods, techniques and tools for measuring performance, and on the skills of managers to implement the most appropriate methods. Summarizing the results of previous research, we have identified evidence that a fair assessment of organizational performance (reflecting the interests of all interested parties) depends on the quality and usefulness of the system of indicators used. Rajnoha *et al.* (2016)

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pointed out that the use of certain methods, techniques and measuring instruments allows to achieve superior performance. Afonina (2015) showed that there is a significant positive relationship between the quality of the tools and techniques of management used and organizational performance. Other studies have found that the use of different business valuation methods depends on management structure (Suriyankietkaew and Avery, 2016; Dobija and Kravchenko, 2017), shareholder structure (Liu *et al.*, 2019) and business size (Lee, 2009).

From a practical point of view, one of the challenges of performance management is the selection of the system of indicator that underlie the measurement and evaluation of performance. The use of simple indicators does not provide a complete picture of performance, which requires the use of more complex indicators. Due to changes in the business environment, as well as changes in organizational objectives, some indicators have limited “validity”. Last but not least, the indicators can be interpreted differently by the interested parties. For example, an indicator that measures a company’s indebtedness (used to assess the impact of the financing structure on financial performance) may be considered valuable by managers, but less valuable by shareholders, who see it as a measure of the risk of sharing profits with external financiers.

This article represents a starting point of a broader research that aims to assess the usefulness and significance of the various indicators used to measure corporate performance. Specifically, we consider two categories of indicators for assessing financial performance - ROA and ROE, respectively, economic added value. The element of originality assumed by the authors is the analysis of the extent to which the variations of the first two performance indicators have an impact on the variations of the third performance indicator. From what is known by the authors, such a research direction has not been addressed so far (at least at the level of performance analysis of Romanian companies).

To complete the knowledge framework, the analysis of the interdependencies between the selected performance indicators also includes the use of three complementary variables (global indebtedness, current ratio and quick ratio) and a control variable (firm size). Then, to transcend beyond the analysis at corporate level, the performance analysis is extended by taking into account the real impact of GDP growth rate on the targeted performance indicators. Therefore, this study presents the peculiarities of measuring financial performance based on financial ratios and added value and assesses the interdependencies between different performance measures. In developing the study, we aimed for research to have a dual use: scientific (by providing an overview of the state of knowledge in the field) and practical (by providing practical clues to facilitate the selection and use of various measures to assess performance).



1. Review of the literature on measuring financial performance

The first performance measurement systems were based on financial rates, defined as the expression of the ratios between two quantities (Kieso *et al.*, 2013). Through the easy way of determining (but also due to the ease of interpretation), financial rates have been and are considered valuable tools that allow measuring and monitoring the performance of a company (Babalola and Abiola, 2013). At the same time, the rates were considered useful tools underlying the adoption of investment decisions. The argument on which this idea was built was that rates “offer investors a more complete measure of performance” (Demmer, 2015).

Summarizing the incipient research, Salmi *et al.* (1990) identified three approaches to the classification of financial ratios:

a) a *pragmatic* approach in which the classification was based on established practices and personal opinions of financial analysts;

b) a *deductive* approach, focused on the technical relations between the different financial rates (later applied in the Du Pont model) and on the observed statistical behaviour;

c) an *inductive* approach, which classifies rates from the perspective of statistical techniques (such as factor analysis) and of empirical utility; the purpose of this approach was threefold: to eliminate mutually exclusive financial rates from the analysis; ensuring the spatial and temporal representativeness of the results; increasing the degree of coverage, respectively, evaluating the extent to which the selected rates can characterize all the activities of the organization.

In the literature but also in financial practice have been identified and used a series of rates (tables 1) that can be grouped as follows: *rates of return*, which describe the extent to which the use of resources (means) of a company generates profit; *financial leverage ratios*, which show the extent to which the use of borrowed funds has led to an increase in the return on equity; *liquidity rates*, which show whether a company has enough assets to pay off short-term debt; *efficiency rates*, which allow the assessment of the company’s ability to manage its assets. There are relationships of mutual interdependence between the categories of rates listed. For example, rates of return on assets (ROA), equity (ROE) and investments (ROI) are dependent on liquidity rates (current and immediate) (Pal, 2015). On the other hand, holding liquid assets can improve profitability for a certain period of time.

Due to the generous possibilities for determining the rates, the researchers resorted to factor analyses following the correlation between the variables (Ugurlu and Aksoy, 2006; De *et al.*, 2011; Chen, 2011); the aim was to select the most representative rates starting from the most representative determinants of financial performance. There are other research directions aimed at: a) financial rates that satisfy the condition of proportionality with the size of the company (Sudarsanam and Taffler, 1995); b) the possibilities of adjusting financial rates (Gallizo and Salvador, 2003); c) the longitudinal properties of financial rates (McLeay and Stevenson, 2009).



The use of rates for measuring and evaluating financial performance has been criticized because: a) it evaluates performance at a given time (using historical information); b) promotes short-term decision to the detriment of strategic orientation (Bourne *et al.*, 2003); c) treats with priority the consequences and not the causes that determined a certain performance (Kiseliáková *et al.*, 2016). Subsequent research has shown that if the analysis based on rates is doubled by an analysis of trends, some imputable aspects can be overcome, creating a foundation for the strategic orientation of the business (Tudose and Avasilcai, 2019). Analysing the research on the measure of financial performance, some authors (Pavelkova and Knapkova, 2005) delimited four stages in the development of financial performance indicators (table 2).

Table 1. Financial rates and possibilities of determination

| Categories | Numerator | Denominator |
|--|--|---|
| Profitability rates (ROA, ROE, ROI) | Gross profit, net profit, operating result, turnover | Total assets, total liabilities, permanent capital, equity, share capital, total shares |
| Financial leverage rates | Total debts, long-term debts | Equity, permanent capital, total assets, committed capital |
| Liquidity rates | Current assets, stocks, receivables, cash | Short-term debt (banks also use current assets, and current liabilities) |
| Cash flow rates | Dividend, reinvested earnings, reported earnings | Profit (net, normal, economic) |
| Efficiency rates (asset management) | Stocks, debts, fixed assets, working capital, total income (cost structures) | Turnover, total assets (total costs) |

Source: authors' representation

Table 2. Generations of financial indicators used in performance evaluation

| Stages and indicators | | | |
|---|---|---|--|
| <i>The first generation</i> Profit margin | <i>The second generation</i> Profit growth rate | <i>The third generation</i> Return on assets, capital, investments (ROA, ROE, ROI) | <i>The fourth generation</i> Value for shareholders (EVA, CFROI, FCF) |

Source: Pavelkova and Knapkova, 2005

The fourth generation includes: economic value added (EVA), cash-flow return on investment (CFROI) and free cash flow (FCF). In this study we will focus on economic added value. In its original form - as founded by Alfred Marshall in the late 1800s - the added economic value indicates the extent to which an organization creates real economic profits greater than the remuneration expected of financiers.



One hundred years later, the concept was developed (by the consulting firm Stern Value Management) from the perspective of the ability to generate value for shareholders. Currently, EVA is recognized as a method of measuring performance, being used by many organizations (such as Coca Cola, DuPont, Eli Lilly, Polaroid, Pharmacia and Whirlpool) (Annamalah *et al.*, 2018).

As an indicator of measuring financial performance, EVA is determined as the difference between net operating profit after tax and the opportunity cost of invested capital. If the result of this difference is positive, it is admitted that the organization creates value. Otherwise, it is admitted that the organization (through its management) loses value.

Although the determination of EVA seems relatively simple, from a practical point of view it is more complex because it involves making several adjustments to remove the influence of different accounting practices. Research shows that of the 160 possible adjustments, only 10 have a more significant influence on net operating profit after tax and on the opportunity cost of invested capital (Brad and Munteanu, 2012; Almeida *et al.*, 2016). These adjustments refer to: depreciation; research, development and training expenses; advertising costs; deferred taxes; intangible assets (such as goodwill); non-interest-bearing debts (such as advances received from customers, salaries and associated expenses), etc. When the analyses aim at evaluating a sample of firms that apply different accounting rules, in order to ensure the representativeness of the results, the achievement of adjustments must also be doubled by the harmonization of the methodologies for determining the variables according to which the performance is assessed.

According to specialists (Daraban, 2017), EVA differs from other performance indicators (such as earnings per share, gross operating surplus and profitability of sales) in that it measures all the costs of running a business (operating costs and financing costs) and focuses on the control of production time, operating costs and capital. At the same time, it has been shown that this method neutralizes the differences in the level of risk that underlie each strategic business unit (Mocciaro Li Destri *et al.*, 2012). Moreover, some authors (although they initially opined that there is no convergence of results that unequivocally support the superiority of EVA over traditional performance measurement tools) have concluded that EVA translates the *financial performance indicator into corporate language from recent times* (Bhusan and Pramanik, 2016).

EVA is considered one of the most appreciated performance measurement indicators because it involves all resources and allows decision decentralization (Morard and Balu, 2010). Although the decision centre responsible for monitoring and evaluating performance is placed in the area of financial management (similar to traditional methods that use rates to measure financial performance), this placement does not neglect the overall performance of the company.

Beyond the appreciations received, EVA was considered a vulnerable indicator from an application point of view due to lack of synchronization in traditional accounting systems (due to multiple adjustments to both net operating



profit and invested capital), which generate difficulties of transposition/determination. Bhusan Sahoo and Kumar Pramanik (2016) showed that EVA analysis: a) does not include elements such as brand capital or human resources; b) does not provide information on the financial performance of companies affected by changes in the business cycle; c) does not stimulate the development of a business's assets (because the acquisition of fixed assets has a negative impact on the performance assessed by EVA).

2. Research methodology

Kijewska (2016) pointed out that the results of EVA studies differ significantly from country to country, from sector to sector and even from company to company. For this reason, we opted for a comparative analysis of financial performance for three companies selected according to the following criteria: they operate in the same field of activity (automotive), they are joint stock companies and they are the most important operators on the Romanian market. The analysis period was 2010-2019.

To assess financial performance based on rates, we considered two rates of return (ROA and ROE), a global debt ratio (GI) and two liquidity rates (current ratio - CR and quick ratio - QR). To measure performance using EVA we made three preliminary determinations (see table 3):

- net operation profit after tax (NOPat) adjusted for current depreciation, research and development expenses and advertising expenses;
- invested capital (Ic), including only debt that involves costs (including financial leasing); as part of the invested capital were also considered research, development and advertising expenses, as they produce effects over several years and contribute to the development of the business; from the total invested capital were deducted the amounts that are not related to the management period (advance expenses) and the assets not related to the operational activities (securities held and loans granted); this last adjustment is justified by the fact that both the investments in securities and the loans granted represent cash outflows from the company, reducing the possibilities of financing current activities;
- weighted average cost of capital (WACC) determined according to the cost and share of different financing resources; the determination methodology took into account the particularities of the different sources of financing (own and borrowed); the cost of equity (representing the expected remuneration of shareholders) was determined by reporting the net result to equity; the cost of external capital was determined by relating the expenses related to the debts (after operating the tax deductions) to the value of these cost-bearing financing.

Based on the information collected from secondary sources (annual financial statements, reports of directors / boards of directors), the indicators for assessing financial performance were determined, interpreted and analysed in dynamics. The



results obtained in the rate-based analysis were compared with the results of the EVA-based analysis.

Table 3. Indicators used in analysis

| Indicators | Computation method |
|--------------|---|
| ROA | Gross profit / total assets |
| ROE | Net profits / own equity |
| GI | Total debt / total financing |
| CR | Current assets / current liabilities |
| QR | Liquid assets / current liabilities |
| NOPat | Sales – operational expenses + current depreciation + advertising costs + R&D costs – corporate income tax |
| IC | Ic = own capital (Oc) + external capital (financial debts + financial leasing) (Ec) + advertising costs + R&D costs – advance expenses – shares held – loans granted Financial structure: 100% = weight of Oc + weight of Ec |
| WACC | Cost of Oc • weight Oc + cost of Ec • weight of Ec • (1 – tax rate) |
| EVA | EVA = NOPat – WACC • Ic |

Source: authors' representation according to the existing literature

In order to identify the interdependent relations between EVA and the performance indicators determined on the basis of the rates, we performed correlation and regression analyses. Eviews 9 software was used to perform statistical analyses for the identified econometric models. The analyses were based on the panel data method (OLS adapted to panel data). Because the data in our sample consider a set of 7 indicators, for 3 companies, over a period of ten years, the regression analysis was adapted to panel data. In the first regression analysis we treated EVA as a dependent variable and the rates of return, indebtedness and liquidity were considered independent variables. The size of the company (appreciated by total assets) was considered as control variable. The general equation of the regression model applied is as follows:

$$y_{it} = X_{it} \beta_1 + Z_{it} \beta_2 + u_{it} \quad (1)$$

where: i represents the companies included in the analysis (A, B or C), t is time (2010...2019); y_{it} is the dependent variable (in our case EVA); X_{it} is the independent variables; Z_{it} is the control variables (in our case the size of the company); β_1 and β_2 represent the coefficients; u_{it} is the error term.

Because in the analysed period there were major variations of the macroeconomic indicators, we considered it opportune to complete the performance profile from the perspective of the sensitivity of the different performance measures to the variation of the economic growth. In the second regression analysis, three models were defined that link performance (assessed by ROA, ROE and EVA) to the variation of economic growth (assessed by real GDP growth rate).

The equations of the tested models are:

$$ROA_{it} = GDP_{it} \beta_1 + u_{it} \quad (2),$$

$$ROE_{it} = GDP_{it} \beta_1 + u_{it} \quad (3)$$

$$EVA_{it} = GDP_{it} \beta_1 + u_{it} \quad (4)$$

where: i represents the companies included in the analysis (A, B or C), t is time (2010...2019); ROA_{it} , ROE_{it} and EVA_{it} are the dependent variables; GDP_{it} is the independent variable; β_1 represent the coefficient; u_{it} is the error term.

3. Results and discussions

To identify the performance profile, two steps were taken: measurement and evaluation. From a management perspective, measuring performance involves collecting information and determining a set of indicators in order to provide useful information for analysis. The measurement was completed by attaching a value for the measured aspect. In the second stage, the evaluation stage, a preference order was established and opinions were issued on the measured aspect.

For building the performance profile we measured the variables associated with performance. Profitability, liquidity and indebtedness rates were determined for each company (Table 4); then EVA was determined, corresponding to the methodology presented in the previous section (Table 5).

Table 4. Dynamics of performance measures determined on the basis of reports

| | Rates | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Company A | ROA | 6.03 | 6.03 | 5.22 | 4.56 | 5.62 | 6.73 | 6.37 | 3.86 | 8.14 | 7.02 |
| | ROE | 9.05 | 7.78 | 7.80 | 9.29 | 10.08 | 11.78 | 11.73 | 12.38 | 14.73 | 11.97 |
| | CR | 1.39 | 1.40 | 1.02 | 1.08 | 1.11 | 1.22 | 1.12 | 1.04 | 1.23 | 1.20 |
| | QR | 1.15 | 1.20 | 0.89 | 1.01 | 0.95 | 1.06 | 0.97 | 0.90 | 1.09 | 1.07 |
| | GI | 38.19 | 40.55 | 44.83 | 48.83 | 47.24 | 47.31 | 50.06 | 51.36 | 47.85 | 45.56 |
| Company B | ROA | 3.04 | 4.71 | 5.31 | 5.79 | 6.29 | 5.43 | 9.42 | 7.14 | 5.75 | 4.63 |
| | ROE | 3.46 | 5.81 | 7.55 | 6.56 | 7.37 | 8.54 | 8.64 | 9.13 | 8.05 | 6.86 |
| | CR | 1.49 | 1.64 | 1.57 | 1.97 | 1.84 | 1.81 | 1.64 | 1.88 | 2.02 | 2.24 |
| | QR | 0.95 | 1.09 | 1.42 | 1.35 | 1.05 | 1.05 | 0.90 | 1.05 | 1.23 | 1.35 |
| | GI | 40.93 | 37.14 | 39.60 | 31.19 | 29.39 | 43.72 | 35.42 | 32.29 | 34.77 | 34.37 |
| Company C | ROA | 0.48 | 0.80 | 2.99 | 8.17 | 5.18 | 3.83 | 4.97 | 4.47 | 1.47 | 1.18 |
| | ROE | 0.67 | 1.17 | 4.88 | 13.28 | 6.86 | 5.00 | 6.58 | 5.87 | 1.97 | 1.61 |
| | CR | 1.17 | 1.08 | 1.41 | 1.46 | 1.45 | 1.65 | 1.83 | 1.70 | 1.78 | 2.09 |
| | QR | 0.37 | 0.54 | 0.93 | 1.07 | 1.02 | 1.24 | 1.45 | 1.14 | 1.15 | 1.32 |
| | GI | 52.29 | 51.87 | 45.00 | 43.33 | 35.83 | 34.95 | 35.63 | 37.77 | 33.69 | 34.17 |

Source: authors' representation



During the 10 years period, company A records the highest rates of return. With a degree of indebtedness that varies between 38.19% and 51.36% and with ROE greater than ROA, company A proves a superior capitalization of borrowed capital (the cost of interest being lower than the internal profitability of the business). The framing of the two liquidity rates in the accepted reference ranges - [1-2] for current liquidity and [0.65-1] for quick liquidity - completes the profile of a superior performance. Company B has lower rates of return; the degree of indebtedness varies between 29.39% and 43.72%, and the ROE is higher than the ROA; liquidity rates exceed the reference limits, which indicates the existence of excess current assets; the accelerated growth of receivables was the main cause of the lack of fit for the liquidity indicators. Company C has lower rates of return, but with the specification that - even in this case - ROE is higher than ROA (in terms of a degree of indebtedness between 33.69% and 52.29%).

The dynamics of the added economic value is presented in table 5. All three companies register increases in performance (appreciated in terms of real gains generated by the business). Because EVA is determined as an absolute value, comparability at the company level loses its significance. To ensure comparability we started from the following premise: EVA is a performance measurement indicator that involves all resources and measures all the costs of running a business. Based on this premise, we reported EVA to total assets (an indicator frequently used to assess the size of a company).

Table 5. Dynamics of EVA

| Compa -nies | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Average |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| EVA (million euros) | | | | | | | | | | | |
| A | 103.18 | 109.76 | 111.35 | 110.73 | 152.39 | 134.82 | 145.44 | 136.40 | 172.36 | 202.16 | 137.86 |
| B | 8.28 | 7.66 | 7.43 | 7.17 | 5.90 | 5.42 | 8.19 | 8.51 | 8.68 | 8.52 | 7.58 |
| C | 0.54 | 1.06 | 0.01 | 1.65 | 2.46 | 2.12 | 1.56 | 12.94 | 1.79 | 0.81 | 2.49 |
| EVA adjusted = EVA / Total assets | | | | | | | | | | | |
| A | 0.09 | 0.09 | 0.08 | 0.07 | 0.10 | 0.09 | 0.09 | 0.07 | 0.08 | 0.09 | 0.09 |
| B | 0.09 | 0.08 | 0.08 | 0.08 | 0.06 | 0.05 | 0.07 | 0.07 | 0.06 | 0.06 | 0.07 |
| C | 0.03 | 0.05 | 0.00 | 0.06 | 0.10 | 0.08 | 0.06 | 0.40 | 0.05 | 0.03 | 0.09 |

Source: authors' representation

The analysis at the level of added economic value adjusted according to the value of the assets employed by the company reveals that for each monetary unit of resource used, on average, 0.09 monetary units of economic value are created (at the level of companies A and C) and 0.07 monetary units at the level company B.

To go through the second stage (performance evaluation) we performed a comparative analysis to establish a ranking of companies and to issue opinions on the measured aspect (performance). The analysis from the perspective of rates and

EVA (as an absolute measure, expressed in monetary units) allows a clear hierarchy of the three companies: A is more efficient than B, and B more efficient than C. Instead, when EVA (as an absolute measure) is replaced by EVA adjusted (according to total assets), the performance ranking changes. Compared to the size of the business, companies A and C have the same ability to create added value. These results confirm that EVA (in the version adjusted according to the size of the company) takes into account all resources (Morard and Balu, 2010), measures all the costs of running a business (Daraban, 2017) and neutralizes the differences in risk level that lie at the basis of each strategic business unit (Mocciaro Li Destri *et al.*, 2012). Moreover, EVA adjusted according to the size of the invested resources allows comparative analysis between companies.

As described in the methodology section, for identifying the interdependent relationships between EVA and performance indicators determined on the basis of rates, we performed a correlation and regression analysis. Before performing the regression analysis, we analysed the results obtained for descriptive statistics (see table 6). The results highlight the fact that the indicators considered in the analysis varied significantly during the analysed period, registering also important differences depending on the company. Thus, the highest value of EVA was recorded by company A in 2019. While the lowest value of this indicator was recorded by company C in 2012. Due to the fact that EVA is an indicator calculated in absolute terms, to obtain correct results in future analyses we calculated natural logarithm from EVA (LEVA). We did the same for the enterprise size indicator.

Table 6. Descriptive statistics of the variables

| | Mean | Median | Maximum | Minimum | Std. Dev. |
|--------------|---------|---------|----------|---------|-----------|
| EVA | 49.309 | 8.235 | 202.160 | 0.010 | 66.154 |
| LEVA | 2.318 | 2.108 | 5.309 | -4.605 | 2.280 |
| ROA | 5.021 | 5.265 | 9.420 | 0.480 | 2.157 |
| ROE | 7.548 | 7.665 | 14.730 | 0.670 | 3.585 |
| CR | 1.517 | 1.475 | 2.240 | 1.020 | 0.347 |
| QR | 1.065 | 1.065 | 1.450 | 0.370 | 0.227 |
| GI | 40.837 | 40.075 | 52.290 | 29.390 | 6.782 |
| SIZE | 580.108 | 109.290 | 2146.130 | 19.940 | 757.792 |
| LSIZE | 5.120 | 4.691 | 7.671 | 2.992 | 1.724 |

Source: authors' representation

The correlation matrix of the variables indicates that some of the variables considered in the analysis are strongly correlated with each other, with a correlation coefficient higher than 0.8 (see table 7). Thus, we observe that ROA and ROE are strongly correlated with each other. CR is also strongly correlated with GI.

In order to eliminate the problem of the existence of multicollinearity and to obtain the most accurate results, we formulated regression models that exclude by



rotation the strongly correlated variables. Thus, the equations of the regression models tested are:

$$\text{LEVA}_{it} = \text{ROA}_{it} \beta_1 + \text{CR}_{it} \beta_2 + \text{QR}_{it} \beta_3 + \text{LSIZE}_{it} \beta_4 + u_{it} \quad (5)$$

$$\text{LEVA}_{it} = \text{ROA}_{it} \beta_1 + \text{QR}_{it} \beta_2 + \text{GI}_{it} \beta_3 + \text{LSIZE}_{it} \beta_4 + u_{it} \quad (6)$$

$$\text{LEVA}_{it} = \text{ROE}_{it} \beta_1 + \text{CR}_{it} \beta_2 + \text{QR}_{it} \beta_3 + \text{LSIZE}_{it} \beta_4 + u_{it} \quad (7)$$

$$\text{LEVA}_{it} = \text{ROE}_{it} \beta_1 + \text{QR}_{it} \beta_2 + \text{GI}_{it} \beta_3 + \text{LSIZE}_{it} \beta_4 + u_{it} \quad (8)$$

Table 7. The correlation matrix of the variables

| | EVA | LEVA | ROA | ROE | CR | QR | GI | SIZE | LSIZE |
|--------------|-------------------|-------------------|-------------------------|-------------------|--------------------------|-------------------|------------------|------------------|-------|
| EVA | 1.000 | | | | | | | | |
| LEVA | 0.819 (0.000) | 1.000 | | | | | | | |
| ROA | 0.367 (0.045) | 0.504 (0.004) | 1.000 | | | | | | |
| ROE | 0.680 (0.000) | 0.667 (0.000) | 0.828 (0.000) | 1.000 | | | | | |
| CR | -0.665 (0.000) | -0.404 (0.026) | -0.002 (0.987) | -0.313 (0.092) | 1.000 | | | | |
| QR | -0.101 (0.593) | 0.084 (0.655) | 0.291 (0.117) | 0.175 (0.354) | 0.637 (0.000) | 1.000 | | | |
| GI | 0.565 (0.001) | 0.264 (0.158) | -0.149 (0.430) | 0.254 (0.174) | -0.859 (0.000) | -0.652 (0.000) | 1.000 | | |
| SIZE | 0.991 (0.000) | 0.818 (0.000) | 0.351 (0.056) | 0.690 (0.000) | -0.671 (0.000) | -0.109 (0.565) | 0.583 (0.000) | 1.000 | |
| LSIZE | 0.926 (0.000) | 0.896 (0.000) | 0.469 (0.000) | 0.712 (0.000) | -0.514 (0.003) | 0.006 (0.973) | 0.418 (0.021) | 0.937 (0.000) | 1.000 |

Note: In parentheses are presented the values for the probability. With bold are marked the highly correlated variables.

Source: authors' representation

The results of the regression analysis adapted to the panel data are centralized in Table 8. The values obtained for the regression coefficients indicate that the ROA exerts a positive and statistically significant influence on the ability to create economic value by the analysed companies. Therefore, increasing the return on assets can be considered a precondition for increasing added value. The regression analysis also indicated that the indebtedness rate exerts a statistically negative and significant influence on the ability of companies to create real economic profits, showing that an increase in companies' indebtedness will lead to a reduction in EVA. These results are relevant because, in the formula for determining the EVA, the opportunity cost of the invested capital is deducted from the net operating profit (after tax). Therefore, it is expected that with the increase of the invested capital (respectively, the cost of this capital) the EVA will decrease.

The coefficients obtained for the control variable are positive and statistically significant in all 4 models, which shows that the size of the company determines in an increased proportion its ability to create added economic value. In this study, the size of the company was assessed by the total volume of assets. Therefore, the statistical models formulated confirm that the performance of a company (assessed by EVA) can increase as the volume of resources invested increases. Our results are in line with previous research that has shown that financial performance reflects the ability of companies to efficiently manage and use the resources at their disposal (Mahrani and Soewarno, 2018, Orozco *et al.*, 2018), respectively, the effectiveness and efficiency of management in use of company resources (Egbunike and Okerekeoti, 2018).

Table 8. Regression analysis

| Dependent variable LEVA | Model 1 | Model 2 | Model 3 | Model 4 |
|--------------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| ROA | 0.091** (0.039) | 0.062* (0.035) | - | - |
| ROE | - | - | 0.022 (0.029) | 0.080 (0.058) |
| CR | 0.031 (0.707) | - | 0.166 (0.711) | - |
| QR | 0.511 (0.498) | -0.205 (0.520) | 0.568 (0.428) | -0.670 (0.565) |
| GI | - | -0.093** (0.041) | - | -0.119*** (0.041) |
| LSIZE | 1.134*** (0.173) | 1.219*** (0.161) | 1.168*** (0.197) | 0.002*** (0.004) |
| Constant | -4.545** (1.879) | -2.284** (1.017) | -4.698** (1.920) | 5.672*** (1.706) |
| Observations | 30 | 30 | 30 | 30 |
| R-squared | 0.815 | 0.821 | 0.810 | 0.747 |
| Adjusted R-squared | 0.785 | 0.792 | 0.780 | 0.706 |
| F-statistic | 27.604*** | 28.689*** | 26.782*** | 18.473*** |

Note: *, ** and *** show that the coefficients are statistically significant with a probability of 1%, 5% or 10%

Source: authors' representation

The other variables, ROE, CR and QR, did not resulted in having a statistically significant effect on the added value created by the companies considered in the analysis.

The Adjusted R Square result indicates that about 78% of the EVA variation is explained by the independent variables included in the regression model. The values of the significance test F provided non-zero values, indicating that there is at least a non-zero coefficient. This test covers all independent variables and verifies



the significance of the entire regression. The results in Table 8 indicate that the model validation condition is met (P-value <0.05). Therefore, regression models are statistically significant, for which it can be admitted that the ability to create economic value depends on the achievement of high rates of economic profitability.

Macroeconomic factors, which are not under the control of management, also make their mark on corporate performance (Barakat *et al.*, 2016; Akinyomi, 2013). Given the fact that the analysed period was characterized by major variations of macroeconomic indicators, we considered it appropriate to analyse the sensitivity of different performance measures to changes in macroeconomic variables. To test these interdependencies, we defined three models that link performance (assessed by profitability rates, respectively by EVA) to the variation of economic growth (assessed by real GDP growth rate). The results are summarized in Table 9.

Table 9. Interdependencies: performance – real GDP growth rate

| Variables | Dependent variable ROA | Dependent variable ROE | Dependent variable LEVA |
|-----------------------------|----------------------------|----------------------------|----------------------------|
| Real GDP growth rate | 0.254*** (0.063) | 0.495*** (0.052) | 0.114* (0.058) |
| Constant | 4.093*** (0.213) | 5.744*** (0.402) | 1.902*** (0.330) |
| Observations | 30 | 30 | 30 |
| R-squared | 0.106 | 0.145 | 0.019 |
| Adjusted R-squared | 0.074 | 0.115 | -0.015 |
| F-statistic | 3.334*** | 4.774*** | 0.465 |

Note: *, ** and *** show that the coefficients are statistically significant with a probability of 1%, 5% or 10%

Source: authors' representation

The data in Table 9 show that 10.6% of the ROA variation, respectively 14.5% of the ROE variation can be explained by the real GDP growth rate variation. The regression analysis at the level of the three models revealed that only two models are statistically significant, models for which the P-value was less than 0.05 (for ROA and ROE as dependent variables). The model that tests the influence of real GDP growth rate on the added economic value of companies is not statistically significant. The coefficients obtained show that a 10% increase in the real GDP growth rate can lead to an increase in ROA for the analysed companies of 2.5%, and an increase of 4.9% in ROE. Our results confirm the results of previous research which showed that macroeconomic indicators, such as inflation rate and growth rate, have a significant impact on financial performance (Egbunike and Okerekeoti, 2018).

Conclusions

The option for analysing the financial performance profile built on the basis of rates and economic value added is justified by the fact that both analyses are placed in the area of financial management. The importance of the researched topic flows from the fact that, in order to be sustainable, companies must take care of their financial performance. In choosing the performance indicators we started from the consideration that financial performance shows “how effective and efficient an organization is in achieving its goals” (Suhadak *et al.*, 2019), highlights “the company’s ability to manage and control its resources” (Mahrani and Soewarno, 2018) and reflects “the ability to create economic value” (Orozco *et al.*, 2018).

The study begins with the theoretical substantiation of the particularities of measuring financial performance based on financial reports and economic value added. In this context, the advantages and disadvantages of using different performance measures are pointed out. Empirical research is carried out on the example of three companies in the automotive industry. To assess the financial performance based on the rates, we considered two rates of return (ROA and ROE), a global debt ratio and two liquidity rates (current ratio and quick ratio). To measure performance using EVA, we performed three preliminary determinations: net operation profit after tax (NOPat), invested capital (Ic) and weighted average cost of capital (WACC). Based on these indicators, two performance profiles were built. The first performance profile allowed the ranking of companies according to the size and dynamics of the determined financial rates. This first preliminary analysis indicated that the highest rates of return are obtained in terms of a degree of indebtedness of over 45% and liquidity rates within the recommended reference ranges. The second performance profile was built based on EVA dynamics. To ensure comparability, we proposed adjusting the EVA according to the size of the total assets held by the company. This adjustment changed the performance hierarchy based on financial rates (pointing out that the size of assets is more important than indebtedness and liquidity when performance is assessed in terms of added value).

In order to identify the interdependence relations between EVA and the performance indicators determined on the basis of the rates, we performed correlation and regression analyses. In the first regression analysis we treated EVA as a dependent variable and the rates of return, indebtedness and liquidity were considered independent variables. The size of the company (appreciated by total assets) was considered a control variable. The results of this first regression analysis indicated that:

- 1) ROA has a positive and statistically significant influence on the ability to create the economic value of the analysed companies;
- 2) the indebtedness rate exerts a negative and statistically significant influence on the capacity to create the real economic profits of the companies;
- 3) the size of the company (appreciated by the value of the assets) positively influences the ability to create added economic value.



Given the fact that the analysed period was characterized by major variations of macroeconomic indicators, we considered it appropriate to analyse the sensitivity of different performance measures to the variation of economic growth. To test these interdependencies, we defined three models that focus on identifying the link between performance (assessed by ROA, ROE and EVA) and the variation of economic growth (assessed by real GDP growth rate). The regression analysis at the level of the three models revealed that only two models are statistically significant. The coefficients obtained show that an increase in real GDP growth rate can lead to an increase in ROA and ROE.

The study is useful to both researchers (because it presents an original review of the literature on measuring financial performance and provides evidence of the interdependence between different measures of performance) and practitioners (because empirical research can serve as a guide for a correct measurement and evaluation of financial performance of companies).

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THE CONTRIBUTION OF COHESION POLICY IN THE „LOWER DANUBE” EUROREGION: THE MAPPING OF THE IMPLEMENTED PROJECTS’ OUTPUTS AND THEIR IMPLICATION TO TRANSITION FOR SUSTAINABILITY

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Abstract

Through its programmes, the European Union supports Euroregions so as to help develop joint projects, meant to enforce the economic and social cohesion. Do these programmes of the Cohesion Policy also support the transition processes towards sustainability? This study examines this aspect, by achieving an overall image of the results of the projects implemented in the “Lower Danube” Euro-region. This work uses the method of mapping the results in order to understand the way in which the cohesion policy supports the Euroregions in terms of territorial cohesion and durable development. Therefore, there are roughly analysed the types of results which prevail and their implications in ensuring the sustainability. This method can be adapted for other territorial structures (towns, regions etc) so as to appreciate the transition towards sustainability of the studied territory. The financial support for ensuring the territorial and social cohesion needs to be rethought depending on the potential and social-economical characteristics of the region.

Keywords: cohesion, instruments, projects, outputs, Euroregion, sustainability

Introduction

Important for the economical and social development in many European countries, the cohesion policy is the main politics of investments of the EU. Without a clear definition (Podarera Rivera, Calderón Vázquez, 2019, p. 41), this was associated to an increasing number of ample objectives of the EU, (Allen, 2005, p. 203), including sustainable development. Similar to other policies of the EU aiming for the European integration, the cohesion policy produces ambiguous effects on the capacity of the cross-border institutions (Popescu, 2008) affecting their role as „defender” of the standards and patterns of the European order from a „sub-European” order (Bădescu, 2011, p. 279). Contrary to expectations, the studies note

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that the financial support of the policy did not generate a significant political help in terms of support for the European integration (Bachtler *et al.*, 2016, p. 15; Krieger-Boden, 2018, pp. 12-13). For more than two years, the Commission has performed a study and has undergone a consulting process known as „The Analysis regarding the Cross-Border Cooperation”. On this occasion, it was shown that the border regions are less developed than the rest of the regions in a member state. 29.2 % of the EU-27 citizens, (without including the United Kingdom) lived in underdeveloped regions in 2013. It is estimated that this number will decrease to 25.2% by 2020 and to 22.3% by 2027 (Darvas *et al.*, 2019, p. 8). The European Parliament noted that the 6th Report concerning the cohesion paid insufficient attention to the cross-border cooperation, when this represented per se an objective of the cohesion policy ever since the 2007-2013 period of programming (Report, 2016) and finds that the Commission did not fully undertake a role of general coordination for the performed actions and requires an effective strategy and a mechanism for monitoring and evaluation as concerns the achievement of the Sustainable Development Goals (SDG) (EP Resolution, 2019). Other research in the field outlined the limited result of the INTERREG III community initiative as concerns the strength of the structure of cross-border governance and sustainable development (Leibenath *et al.*, 2008).

In most cases for the evaluation of the cross-border cooperation and the development of the Euroregions certain indicators were taken into account – the creating of jobs, expenses for research-innovation, or GDP increase, which is a useful indicator, but incomplete and biased (Kuhlman and Farrington, 2010). The respective indicators can be the cumulative result of the interventions sustained by European, national or local financing, whereas the comparison to sustainability is briefly analyzed. The results of the projects are „accounted for” by each financing body, and for each programme in turn. But this thing does not give an overall image of the way in which the Euroregion responds to the measures of financial support by various projects. The final effects of these European influences are presented especially as the results of a complex interaction of actors, institutions and discourses at European, national and local level (Leibenath *et al.*, 2008). The studies concerning the triad of problems aiming for sustainability – environment, society, economy in the cross-border context are limited. Mostly, the works that refer to the cross-border effects present especially an ecological approach (a social-ecological one), whereas the intergenerational aspects are tackled in the studies on the future welfare (Miola *et al.*, 2019). For these reasons study develops a tool for mapping the results of the implemented projects via the programmes of the Cohesion Policy.

Using the results map, the impact on the development of the Euroregion is not followed, but the extent to which these results increase the possibility of the impact on the development and support the processes of transition to sustainability. The endeavour is developed in three sections. First, the conceptual framework of cohesion policy and its intervention tools is briefly presented. Secondly, it will resort to a deconstruction of the Euro-regional discourse, insisting on the role of the Euro-regions in the cohesion scenario. Recourse to deconstruction is necessary, given the



multitude of ideologies, visions, motives, economic and geostrategic theories that support the re-territorialization approach of the euroregions. Third, the outputs of the financially supported projects under cohesion policy in the „Lower Danube” Euroregion are examined through an empirical analysis. The analysis in the current work refers only to outputs, which are different from outcomes (Robichau, 2009). When we say outputs, we take into account the first level of results associated to a project, without considering them indicators of the effectiveness. An output is the product, what actually offers the project – a software system, a new action framework, a standard, modified law, methodologies, tools etc. Mainly, but not exclusively technical and conceived in a pragmatic sense, the outputs produce specific independent effects and they are also structuring the public action according to its own logic. In this sense they are important not only as concerns the application of the community policies, but also of those related to the functioning mode of the public scope (Bachtler *et al.*, 2016). Organising a forum concerning the sustainable agriculture represents an example of outputs. It is only a space creating ideas and representations on that policy, which can be interpreted according to the rules of the game specific for the forum, by the actors, interests that make it up and the force relations between these actors (Boussaguet, 2010, p. 284). It would be hazardously to say that organising a forum would solve the problems in agriculture. Eve Foilleux, who analysed the changing of the reference system of the Joint Agricultural Policy notes that a forum of farmers wants to put forward their own view on agriculture, in their circle and before the public authorities. Thus, the forum becomes a space of reusing, of institutionalizing ideas by transforming them into instruments of policies, which are to generate and activate new cognitive and normative matrices in the field (Boussaguet, 2010, pp. 283-289) and an element which can support the innovative and sustainable development (Blatter, 2000).

The analysis is summarized in a single Euroregion (a common and accepted fact for such studies) – the „Lower Danube” Euroregion, taking into account that the potential of cross-border cooperation and promotion of the contribution to the development of the Euroregion can be affected by a variety of contextual characteristics of the subnational territorial collectivities which come into its composition (Jessop, 2002; de Sousa, 2012; Durand and Decoville, 2019). This thing means that there are possible different models of achieving sustainability, depending on the specific situation of a region and the needs and interests of the actors involved.

1. The conceptual framework of the cohesion policy and its instruments of intervention

Starting with the end of the ‘80s in the 20th century, the cohesion policy was a main mean to fight economical, social and territorial inequalities throughout EU, currently focusing also on the poor countries and regions in the Central Europe, Eastern and Southern Europe (Bachteler and Begg, 2017). The implementation of the cohesion policy is ensured by three main financial instruments: 1) The European Regional Development Fund (ERDF), 2) The European Social Fund (ESF), 3) The



Cohesion Fund, by which there are supported the durable development and connectivity in member states with a GDP below 90% of the EU-27 average.

The cross-border cooperation in the European Union is incorporated in the cohesion policy, the euro-regions serving as preferred instruments for the territoriality of social life (Popescu, 2006; Sum, 2002; de Sousa, 2012). Thus, setting up the Euroregions has become a geopolitical enterprise (Popescu, 2008), the national governments being forced to carefully analyse the pros and cons of these „small pieces, but interesting theoretically, of the European governing mosaic on several levels” (Svensson, 2015).

The strategic community trends for the 2007 - 2013 period focussed on the consolidation of the synergies between the environment protection and the economical development so as to ensure the long-term sustainability of the economic growth. However, researches show that the operational programmes were stronger aligned to the Lisbon Strategy for Economic Growth and Jobs and weaker to the EU Strategy of Sustainable Development (Hjerp *et al.*, 2011). Authors concerned with projecting transitions towards sustainability consider that sustainability requires more than the development of markets, institutions and of correct values. Painful, but pragmatic (O’Riordan and Voisey, 1998, p. 8) the transition to sustainability requires also risk analysis (Ionescu *et al.*, 2018) and social impulse (Mancebo and Sachs, 2016, p. 2).

A complementary elements to obtain an effective governance of the cross-border cooperation is represented by the territorial strategies of durable development (Cots, 2017), policy orientation towards results (namely to approach real problems for which it was conceived an intervention) and not oriented towards indicators (such as measuring the lengths of the built roads), a series of principles, implicit or explicit, norms, rules and procedures for taking decisions as concerns the common problems, especially for problems that exceed the local level (Thierstein *et al.*, 2018, Avendaño 2013; Kurowska-Pysz, 2018).

Ranjula Bali Swain and F. Yang-Wallentinb (Swain *et al.*, 2019) examine the inconsistencies of the Goals of Sustainable Development (SGN) and argue which of the basic social, economic or environmental pillars of SGN are the most effective ones for achieving durable development. The data show that developed countries must stay focussed on their social and environmental policies. On the other hand, developing countries are more focussed on the short-term economy and social policies, even if the environmental policies remain significant for durable development. Criticised for its ambiguity (Swain, 2018; Hove, 2004; Merle, 1994) the concept of sustainable development still remains a process of social construction which implies major changes in the day-to-day life of the citizens.

2. The role of the Euroregions in the cohesion scenario

What is the role of Euroregions in the „cohesion scenario”, of which John Peterson claims it is written by the member states, even when the European



Commission and a variety of regional and local actors create their own roles and their own interpretation of the sense and the purpose of these scenario (*apud* Allen 2005, 2005)? The role of Euroregions in the cohesion script gets outlined due to the fact that the arrangements of structural intervention have always favoured a philosophy of regionalism as being the best means to achieve cohesion (Allen, 2005, p. 205; de Sousa, 2012, p. 670). In this philosophy of regionalism, the Euroregions are seen as soft space – feasible governing arrangements, which are meant to increase the institutional borders and rooted practices, by inserting new ways to do things. A distinct characteristic of soft spaces is that they allow to introduce new and innovative ways of thinking, especially in the fields where there exists a significant resistance towards trans-sectorial approaches and of the multilevel governance. It is considered that these characteristics help Euroregions adapt to the structures of stimulation for quick change (Telle, 2017, p. 94). Moreover, the Euro-regional political way encourages the making of joint platforms of cooperation and governance and of equipping the Euroregions from several areas with the institutional capacity necessary to elaborate strategies and policies (Haselsberger and Benneworth, 2010; Kurowska-Pysz *et al.*, 2018; Wróblewski and Kasperek, 2019; Perkmann, 1999).

Also, the Euroregions are usually considered as an easier way for accessing European funds. With the joining of 10 new member states, the weight of the border regions in the total area of the EU increased from 22% in the EU-15 to over 35% in EU-25, while the percentage of the population living in border regions increased from 15% to almost 25% (Niebuhr, 2008). Today in EU there are 185 Euro-regions.

The Euroregions made up at the EU borders have a special role in the integration process due to their vicinity to the new member states (Smallbone *et al.*, 2007). Plus, the Euroregions seem to play the role of „incubators” for third-party organisations, especially public agencies, such as information centres’, investor centres or agencies of territorial marketing (Perkmann, 1999). The way in which the Euro-regions asserted themselves throughout time led to different appreciations: from „integration laboratories” (Kessler, 1999), to „opportunistic strategy for obtaining public subventions” (Scott, 1999). The Euro-regions are used as instruments in international politics to promote the interests of the European Union states and of the sub-national actors. Under these circumstances, the cross-border re-territorialisation in the Eastern Europe remains an enterprise from up to down which does not enter deep enough in civil society so as to allow the breakthrough of some durable cross-border life spaces. Up to now, the significance of the Euroregions resides more in their territorial potential than in their achievements (Popescu, 2016).

3. Materials and methods

In this study there are synthesized the results of the implemented projects and their implications in the transition towards sustainability of the „Lower Danube” Euroregion. The territorial collectivities in the composition of the „Lower Danube” Euroregion were eligible in 6 of the 12 programmes of territorial cooperation of EU,



sustained by ERDF and ENI/ENPI. In the analysis, there are included 3 programmes of territorial cooperation implemented in the 2007-2013 period. The period is significant, taking into account that during such time, the objectives in the cohesion field were extended and aimed at the cross-border territorial cooperation.

Table 1. Sample distribution of the projects in the euroregion „Low Danube”

| Programs | Nr. of the projects | Total |
|---------------------------------------|---------------------|-------|
| JOP RO-UA-MD 2007-2013 | 22 | 75 |
| JOP Black Sea 2007-2013 | 34 | |
| South-East Europe programme 2007-2013 | 19 | |

Source: author's representation

Fundamentul teoretic al studiului îl reprezintă teoria rețelelor. Din perspectiva acestei teorii sunt analizate relațiile dintre stakeholderii implicați în implementarea proiectelor transfrontaliere și rolurile acestora. Informațiile privind actorii transfrontalieri (noduri în rețelele sociale) și relațiile dintre aceștia (legături în rețele sociale) s-au colectat din analiza documentelor de management ale proiectelor.

The fundamental source of collecting data is represented by the website keep.eu, an aggregated database regarding projects and beneficiaries of European Union cross-border, transnational and interregional cooperation programmes among the member States, and between member States and neighbouring countries. As complementary sources we used the official websites of the Association of Cross-border Cooperation „Lower Danube Euroregion” (in Romanian original ACTDJ) and of the entities comprised in the Euroregion. This fact allowed the identification of all the implemented projects in the Euroregion. The projects in which at least one entity in the euroregion is declared leader or partner are analyzed. The collected data set refers to the number and geographical distribution of the projects, priorities and themed areas where it fits into, the involved actors, the results of the projects. In order to map the results, a matrix was drawn up, including 7 categories of results and their specific types (see Table 2). The seven categories resulted from the analysis of the management documents of projects.

Table 2. Categories of results and their specific types

| Category | Types |
|--|--|
| Practical & reusable resources for the practitioners | Guide, Software, New methodologies and techniques, spin-of activities, toolkit |
| Organizational and working documents | Reports, maps, statistics, strategies, agreements, plans |
| Partnerships and cooperations | Network, seminar/networking/exchange of best practices |

| | |
|---|---|
| Community building tools | Online platform, Educational programme, Thematic or multifunctional centers |
| Research material bringing forward the reflection in the sector | Studies, Online database, Research publications, Industry Think Tank |
| Dissemination material | Website, Conference, Seminar, Exhibition, Printed brochure, Leaflets |
| Infrastructure | Equipment, facilities |

Source: author's representation

The identified types of results are related to the six transformation of the SGD listed for the European Union: Well-educated workforce and innovative economy, Health and wellbeing for all, A climate neutral and circular economy, Sustainable food systems, land use, and oceans, Sustainable cities and communities, Digital and other modern technologies for sustainable development (SDSN & IEEP, 2019).

4. Lower Danube Euro-region: context overview

The key-actors behind the setting up of the „Lower Danube” Euro-region (besides of all the Euro-regions in the South-East Europe) (Popescu, 2008) were institutions of the EU at supranational scale and the central governments at national scale. By the 1990s of the 20th century, the border area between Romania, Republic of Moldova and Ukraine had a low priority on the EU agenda. This area comes into the attention of the European Union as Romania advanced towards adhesion. An important factor that stays at the base of this cooperation is the EU desire to take on a stabilizing role, but also a transformative role of post-Soviet countries (Scott, 2014). For this purpose, the EU promoted and actively sustained the setting up of Euro-regions in the border areas of Romania, Ukraine and Moldova, by creating financial programmes for the support of cross-border cooperation (Popescu, 2008).

The collaboration relations between the border regions of the Republic of Moldova, Romania and Ukraine were set ever since the mid '80s, yet this had a more formal nature. After 1989 it is reported a revival, but it is still quite limited due to the lack of clarity in the intrastate relations between parties. The experience on the matter of cross-border cooperation among the Ukrainian, Moldavian and Romanian territories was difficult, since the practice of the Socialist period was hard to apply under the new circumstances (Șoitu and Șoitu, 2010). Moreover, the Euro-regional cooperation at the mouths of Danube is marked by the Romanian-Ukrainian litigation on the Bystroe canal, as well as to that referring to the belonging of the Snake Island and the delineation of the continental plateau around Chilia area (Săgeată, 2006; Șofineți and Dobrotă, 2004). The initiative regarding the promotion of the cross-border cooperation between the Republic of Moldova, Romania and Ukraine was launched by the president of Romania at the beginning of the year 1997. By the basic Romanian-Ukrainian treaty on 2nd June 1997, there were laid the foundations of a close cooperation in various fields, including the cross-border cooperation. In accordance with art. 8 of the Treaty, the countries vowed to support the cooperation between the



administrative-territorial units in the border regions and it was also envisioned the creation of the „Upper Prut” and „Lower Danube” Euroregions where the local territorial collectivities in the Republic of Moldova could participate. Thus, in the South-East Europe, there appears a Euroregion, which according to the typology drafted by R. Săgeată (Săgeată, 2004) it is a region made up by the borders of three states, based on the unitary ethnical structure, symmetrical (with a relatively similar degree of economical-social and technical-urbanistic development). According to the criteria drafted by Kramsch and Hooper (*apud* Häkli, 2008) it can be qualified under the category of the less-advantageous Euroregions, occurred in the buffer border areas, after the Cold War.

All the three countries had their own interests in creating the Euroregion. For Romania, it represented the theoretical and practical acceptance of regionalism (Roşcovanu, 2003) Also, the „solution” of the Euroregion satisfied the Romanian government because it offered the chance of getting closer to the Romanian ethnic people in the territories occupied by the former Union of Soviet Socialist Republics (USSR) at the end of the Second World War and inherited by Ukraine when it became independent in 1991. In turn, Ukraine (with a certain dose of caution as concerns the Romanian intentions) is interested in the Euroregion, considering it a device of integration into Europe. As regards Moldova, a state without a sea outlet, the Euroregion might seem a necessity, given the access granted to it by Danube and the Black Sea (Popescu, 2016).

For ten years, the Euroregion worked without an actual legal form, being rather a regulated forum, where representatives from the local public authorities of the three countries would gather. The new European context, respectively the acquiring by Romania of the status of member state in the European Union and the necessity to capitalize the opportunities created by the new structures of external financing represented catalyst factors in creating new leverage of viability of the Euroregion.

Thus, in March 2009, it is created the Association of Cross-border Cooperation of the „Lower Danube” Euro-region (ACTEDJ) – a structure of executive management of the Euroregion, organised as Romanian legal entity, headquartered in Galaţi. The main motivation was the necessity of a joint structure of management with direct duties in the application and administration of the financial programmes of EU available for the border regions.

5. Projects and outputs

The first projects by which the bases of cooperation in the „Lower Danube” Euroregion are laid out are mainly cultural, followed by environmental projects and economic development. The effort is acknowledged by the fact that after just four years since its founding, it receives the „Sail of Papenburg” award, being the first Euro-region to open the annual granting of this prize by the European Association of Border Regions (EABR). The cross-border award of EABR was offered for



intense social-cultural cooperation, which was set despite the extremely difficult situation at the border between Ukraine, Moldova and Romania.

During the ten years of activity within the Euroregion, there were implemented over 50 projects of cross-border cooperation. A new dimension in the cross-border cooperation is given starting from 2003. By the European Neighbourhood and Partnership Instrument (ENPI), EU doubles its efforts to promote the cooperation with its immediate neighbours.

The Joint Operational Programme Romania-Ukraine-Republic of Moldova 2007-2013 was financed by the European Union by means of the European Neighbourhood and Partnership Instrument, being granted a budget of EUR 126.7 million. At the end of the RO-MD-UA Programme, there were reported 148 contracted projects, of which 8 major investment projects. Of the 8 major investment projects, in four cases, the project leaders are institutions in Romania, while two of them are from the Republic of Moldova and two from Ukraine. The Republic of Moldova is part in 7 projects, whereas in Ukraine is in 5 of the 8 major projects of investments. The Republic of Moldova is the main beneficiary of these investments. An important factor, which contributed to this positioning was the privileged relation with Romania, plus the financial aid given by the Romanian state for implementing these projects (Bărbulescu, 2016).

The actual benefits for the Euroregion following the implementation of major investment projects financed within the JOP Romania-Ukraine-Republic of Moldova 2007-2013 are given by four projects, these actually resulting in:

- Infrastructure investments in the field of citizen safety (equipping a SMURD regional centre at Cahul as a solution for integrating the system of medical emergencies, resuscitation and extrication at the border area between Romania and the Republic of Moldova;
- Joint infrastructure of telecommunications (optical fibre and radio relays for data and voice. The target-groups are represented by the services for emergency situations, police, local public authorities, populations, railway stations, but also other institutions and entities of the state;
- Improved capacity of the customs personnel at the common points for crossing the border Romania – Republic of Moldova, equipping with mobile customs laboratory as an efficient instrument in the activity of ensuring the economic security of the state, proper cashing-in of the import rights, as well as fighting off the illicit trafficking of goods;
- Modern monitoring system for the prevention and protection against the floods in the basin of Prut river;
- Maps, charts and studies from the Lower Danube region regarding the risks caused by the sources of the pollution of soil and water for human and environmental health.

The majority of the projects for supporting the communities in the Lower Danube of the twenty-one contracted by the organisations in the Euroregion were trilateral, simple, partially or entirely implemented in the geographic area where the project leader came from. The most had as project leader organisations from Galați,



Romania. At the opposite pole is the town of Cahul (Republic of Moldova) with only one project. The most targeted was Priority 3 „People to people” – 47% of the projects. The projects within the Priority 1 „Competitive Economy in the border area” represent 38%, and the smallest weight that of 14% is represented by the projects in Priority 2 „Environment and preparation for emergency situations”.

The financed projects cover various themed areas. The projects that have as priority the development of a competitive economy in the border area were developed especially by institutions from Odessa. However, it is noted that in many projects, the partners come from other towns, different from those in the region, especially from the towns of Bălți, Yassy and Chișinău. The institutions from Romania and the Republic of Moldova preferred the involvement in „People to people” activities (see Table 2).

Table 3. Roles and themed areas covered by the cross-border cooperation projects within the JOP RO-UA-MD 2007-2013

| Tematics | RO | UA | MD |
|--|-----|-------|----|
| SME and entrepreneurship | xxo | xxxxo | oo |
| Health and social services | x | x | o |
| Tourism | xo | xo | o |
| Agriculture, fisheries and forestry | x | x | o |
| Water management | x | | o |
| Climate change and biodiversity | x | o | o |
| Managing natural and man-made threats | x | o | |
| Social inclusion and equal opportunities | xx | o | o |
| Institutional cooperation and cooperation networks | xo | | xo |
| Cultural heritage and arts | xo | x | o |
| Education and training | | x | |

Note: x / o – number of projects; x- project leader; o – partner

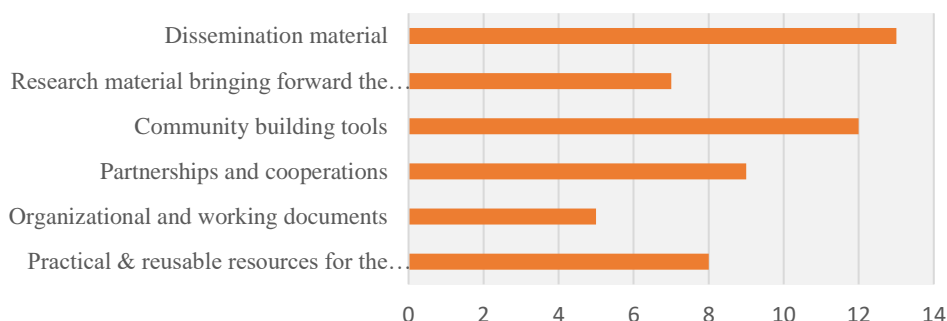
Source: author's representation

The outputs analysis of the projects reveals a certain degree of their homogeneity. When we say homogeneity, we bear in mind the fact that for specific goals, for specific problems, similar solutions were thought for.

Outputs in the category „Dissemination material and Community building tools” are dominant. The types of outputs from these categories with the highest occurrence are developing new structures, such as centres for information, mediation or recreation, and the equipping of the existing ones. The character of novelty is brief, being preferred by study visits, the change of experience or activities with the participation of all the partners such as: round tables, conferences, festivals, exhibitions. In the category „Partnerships and cooperation”, it prevails the creation of networks and the exchange of good practices. A high enough occurrence is representative for market studies, feasibility studies, followed by informative and

instructive guides, technical documents – set of maps for landslides and process of erosion, polluting points, industrial park project technical materials for territory planning.

Figure 1. The outputs of the projects from the JOP RO-UA-MD 2007-2013



Source: author's representation

With a lower occurrence, but with relevance for the communities where the projects were implemented are the outputs aiming for the development of infrastructure. It is about an aquatic base with entertainment facilities in Galați, cross-border tourist route, two networks of water supply and sewage created in a rural community, three centres for processing fruits, modernized laboratory for medical care in Galați, setting up a Reservation of the Biosphere (Lower Prut – the first Reservation of the Biosphere in the Republic of Moldova).

Generally, the social-economic added value generated by the programmes was determined to a great extent by the major investment projects (LIP) (Bulat *et al.*, 2018) being the only projects with visible cross-border relevance.

The number of cross-border projects financed by the Joint operational programme Black Sea Basin 2007-2013 is significantly larger – 34 projects. However, one should notice that in these projects the eligible institutions in the Euro-region have more the capacity of partner, than that of leader of project. In only five projects, the capacity of project leader is ensured by four institutions in Romania and one institution from Odessa. The themed areas are diverse, the highest level of cooperation being maintained in the field of sustainable management of the natural resources, environment and institutional cooperation.

At the level of outputs, there prevail outputs from the category „Practical & reusable resources for the practitioners” and „Organizational and working documents”. Types of outputs, such as the drawing up of studies, reports, drafting of danger map for earthquakes, landslides and floods at regional and local scales are found in 41% of the projects. In 25% of the projects, the results target activities of training, transfer of knowledge, change of experience. The creation of networks,



common platforms are the results to be found in 14%. The tangible outputs, such as the creation of a platform of organic waste, are in a more reduced number.

Table 4. Roles and tematics areas covered by cross-border cooperation projects within the JOP Black Sea 2007-2013

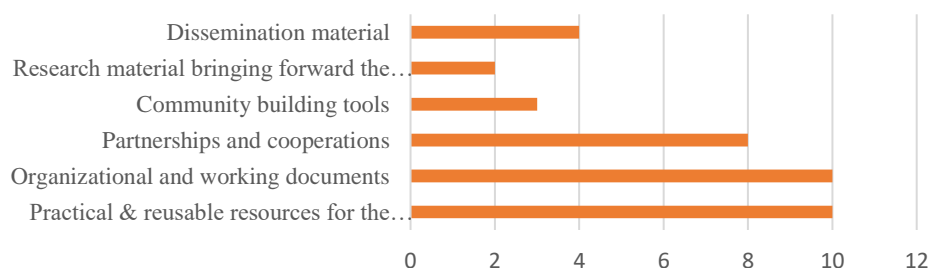
| Tematics | RO | UA | MD |
|--|------|------|----|
| Costal mg & maritime issue | | xo | o |
| Agriculture, fisheries and forestry | oo | oo | |
| Waste and pollution | xoo | o | o |
| Knowledge and technology transfer | o | o | |
| Sustainable management of natural resources | xooo | oo | oo |
| Cultural heritage and arts | x | ooo | |
| Energy efficiency | o | o | o |
| Institutional cooperation and cooperation networks | xo | oooo | |
| Logistics and freight transport | | o | |
| Tourism | o | ooo | |
| Improving transport connections | | o | o |
| Clustering and economic cooperation | | o | |
| SME and entrepreneurship | o | o | |
| Managing natural and man-made threats | | oo | |
| Education and training | | oo | |
| Water management | o | o | |

Note: x / o – number of projects; x- project leader; o – partner

Source: author's representation

The South-East Europe Programme is one of the 13 programmes of active cross-border cooperation during the programming period 2007-2013. It was the programme with the largest geographical area of cooperation – 16 participant countries. With four priority axes, it is considered a „sole instrument” of European Territorial Cooperation. Covering geographically six candidate countries and potential candidates and two countries which participate at the European neighbouring policy (Ukraine and the Republic of Moldova), it is launched under the slogan of a „moral obligation to continue cooperation” (southeast-europe.net).

The participation of institutions in the „Lower Danube” Euroregion in this programme is just as partners or observers. With actual benefits for the Euro-region, there were 19 projects implemented. The objectives of the projects targeted especially the river Danube and the protected areas. Social innovation, regenerable energy, the countryside and the periphery were fields less exploited within the South-East Europe 2007-2013 Programme.

Figure 2. The outputs of the projects from the JOP Black Sea 2007-2013

Source: author's representation

Table 5. Roles and themed areas covered by the cross-border cooperation projects within the South-East Europe programme 2007-2013

| Tematics | RO | UA | MD |
|---|-----|----|----|
| Agriculture, fisheries and forestry | o | o | |
| Waste and pollution | o | | |
| Climate change and biodiversity | | o | |
| Sustainable management of natural resources | ooo | | |
| Tourism | o | | |
| Improving transport connections | o | | |
| Managing natural and man-made threats | o | | |
| Education and training | o | oo | |
| Water management | | o | |
| Infrastructure | o | | |
| Transport and mobility | oo | o | |
| Waterways, lakes and rivers | | o | |
| Rural and peripheral development | o | | |
| Social inclusion and equal opportunities | o | | |
| Renewable energy | o | | |

Note: x / o – number of projects; x- project leader; o – partner.

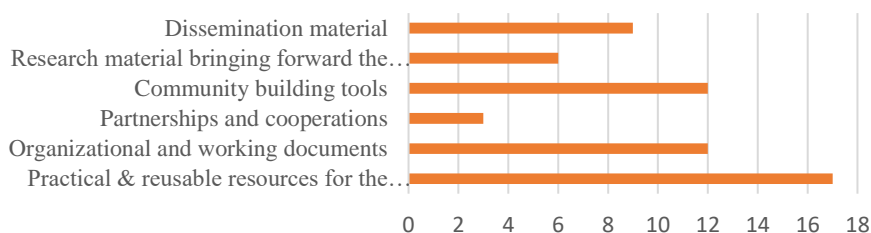
Source: author's representation

At the level of outputs, there prevail those in the category „Practical & reusable resources for the practitioners”, „Organizational and working documents” (analysis and evaluation reports, creating joint platforms, drawing up studies of feasibility) and „Community building tools”. It is noted the increased occurrence of activities of the spin-of type, these referring particularly to the innovative models and methods for using the potential of the protected natural areas, the protection of river basins against agricultural polluters, common methodologies concerning the research of environmental problems, regarding the prevention of dangers and floods



in the Danube Delta, forecasting system of the dispersion of oil spills based on prognosis models of winds, waves and the circulation of oceans. By comparison to the JOP RO-UA-MD and JOP Black Sea Basin, it is noted a greater occurrence of outputs of the „Research material bringing forward the reflection in the sector” type. The results of „software” type are brief (a single IT instrument to monitor the quality of surface waters (indicators of water quality)).

Figure 3. The outputs of the projects from the JOP South-East Europe programme 2007-2013



Source: author's representation

In the outputs category with increased relevance for the Euroregion, there are the development of common action plans, practices of regeneration of fields, developing ways for durable tourism. The effects of the latter result are seen in the increase of the number of tourists in areas that were once uncaptalized. A rural locality in the Euro-region attracts more tourists than the riverain town of Galați.

Conclusion and discussion

The programmes of the cohesion policy analysed in this study have improved the application field of the cross-border cooperation in the Lower Danube Euroregion. Despite the difficulties which the functioning of the Lower Danube Euroregion has to face, the cross-border cooperation is gaining ground in Romania, Ukraine and the Republic of Moldova. The results of the projects cover in different proportion the requests to ensure durability in the Euroregional context. The categories and types of outputs are different. Of the six transformations that aim durability in the EU, the most supported ones with various categories of results are the following: „Well-educated workforce and innovative economy” and „Sustainable food systems, land use, and oceans” (in the case of the Lower Danube Euroregion, there are taken into account the Black Sea and the Danube Delta). On the opposite side, there are „Health and wellbeing for all” and „A climate neutral and circular economy”).

The financial support of the cross-border cooperation between 2007-2013 followed the „to support” objective. The logic of the financial help from the EU is

based on the fact that it is necessary to support projects or initiatives „functioning as catalyst,, and which trigger cooperation. This thing explains the increased occurrence of the results in the „Partnerships and cooperation” category, especially in creating networks and from the „Resources for practitioners” category. Notable sometimes, these results do not represent the final answer to the challenges of European integration, all the more so as concerns the durable development. These offered the possibility of involving the public and private actors to participate, but this thing does not have to be confused with proper and enough interactions, that might offer cohesive properties to the Euroregion as a whole. The cross-border cooperation was most likely determined by strategic and security reasons, expressed by the European Union. The majority of the programmes adopted an ascending approach when they decided what projects to support. The financing requests were in accordance with the objectives and priorities of the programmes, but the financing was granted in a less coherent and structured way.

With regard to cooperation flows, it is noted that there is a wide network of partners and institutions in the Lower Danube region. The initiatives and actions carried out are supported by networks of relatively stable actors, providing a degree of institutionalisation of cross-border cooperation.

Actors with a political-administrative role have acquired a central position in the evolution and functioning of the Euroregion. They are mainly representatives of local governments in the main cities of the Euroregion. In the category of public institutions, a significant share is represented by universities, most of which are in Odessa. In Romania, the institutions actively playing partners or project leaders are a university and institutions that have as their field of activity the river infrastructure or the administration of the Danube Delta. The non-governmental sector in the Euroregion is most often represented by the same organisation. For example, three out of five NGOs in the Republic of Moldova are partners in 85% of the projects.

Although stable, the cooperation relations continue to be rather thin, with a limited impact on the Euroregion as a soft space. There is a tripolar flow of ideas and activities, but new or innovative modalities of action are delayed, bearing in mind that many of the decisions or solutions to certain problems, especially those relating to infrastructure, also involve government decisions. For example, the setting up of a communication route on the Danube between the localities Isaccea in Tulcea County (RO) and Orlovka (UA) for the transport of goods requires the conversion of Isaccea and Orlovka into border crossing points, a problem which has to do with the competence of the central authorities of the two countries. A modernized cross-state infrastructure on the Odessa-Izmail-Reni-Giurgiulești-Galați route is still in the project phase.

From the perspective of the theory of collective efficiency, the networks represent one of the conditions that matter in the construction of communities, because they „capture the local expression of ideas, interests and values” (Hataley and Leuprecht, 2018). In the case of the Euroregions, the networks are a flexible instrument of interaction which keep the adapting capacity as problems change and new answers are learned so as to cope with things (Cots, 2017). However, in order



for them to be effective, the networks require capacities of political leadership and management. In handling networks, the quality of the relations between different levels and sectors is more important than the formal division of the competences between various actors (Cots, 2017). The positive endogenous effects for cooperation generated by this type of outputs will be seen in time. The major difficulty in capitalizing on financial instruments is that they must have a European justification and, at the same time, respond to the priorities and interests of the region. This made it difficult to pursue a coherent strategy to promote territorial and social-economic development and integration, although most individual projects made a contribution to this.

The main lesson of the 2013-2017 period is that cross-border cooperation initiatives were financially supported in the absence of a database on previous funding and their results.

Consequently, a significant share of the projects had budgets for the establishment of platforms and networking, the preparation of studies and reports, etc. in the same areas of intervention. For these reasons, the monitoring of projects implemented in the 2014-2020 period should also include the mapping of results. The results of the previous period, as well as information on cross-border actors (nodes in social networks) and their relations (links in social networks) should remain in the „institutional memory” of funding programmes, as well as of beneficiaries. The „supporting” logic must be replaced by the „consolidation” logic. The Association of Cross-border Cooperation of the „Lower Danube” Euroregion is the most appropriate structure that could assume the exercise of mapping the results of projects implemented in the Euroregion. An alternative could be the development of partnerships with higher education institutions or research institutes to carry out regular and thematic evaluations of the programmes or its components.

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THE ASSESSMENT OF THE TRANSITION EFFECTS TOWARDS A MARKET ECONOMY. THE CASE OF UKRAINE, BELARUS AND THE REPUBLIC OF MOLDOVA

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Abstract

The '90s have been a very difficult decade especially for the states that have been part of the former Soviet Union for more than half of century. Countries like Ukraine, Belarus or the Republic of Moldova had to face new challenges and realities and to adapt to the market economy, a concept unknown in a communist world. The transition from a state-controlled economy to a liberal and market oriented one was tough in more ways than one. Underlining the most important challenges that these countries had to face in order to be able to compete on the international market, we assess the impact of the regional economic integration structures upon their position on the international economic arena. Using variables such as Gross Domestic Product, Foreign Direct Investments, trade balance structure and the Human Development Index we demonstrate that although it has been more than 30 years since the communism fell, these three states have still a long road ahead of them if they want to be players on a highly competitive market. Through a parallel study of the Deep and Comprehensive Free Trade Area Agreement and the Eurasian Economic Union we will demonstrate that the advantages of the heavy industry, energy resources or the agricultural products have started to lose ground on a market where digitalization dictates most of the trade agreements and foreign investments.

Keywords: regional economic integration, market economy, transition, trade agreements, trade structure

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Introduction

At the beginning of 1991, the Soviet Union was the largest country in the world, covering 22,4 million square kilometers, with a population of more than 290 million inhabitants and 100 distinct nationalities. By the end of 1991 the Soviet Union ceased to exist, leaving behind not only the former soviet republics, which were now independent states, but also a void of power both economically and politically.

Shortly after the dissolution of the Soviet Union, Russia had taken upon itself the role of filling that void. Unwilling to lose the influence on the Eastern Europe and Central Asia, at the beginning of December, 1991, the Commonwealth of Independent States (CIS) was formed by Russia, Belarus and Ukraine through signing of Belavezha Accords. By the end of December, 1991, eight other former Soviet Republics adhered through the Alma-Ata Protocol.

The Charter of the CIS was signed in 1993, the same year that Georgia became a member, thus bringing the total number of members to 12. Aside from the Baltic States, all other Soviet Republic were members of this new organization under Russia's lead.

The years that followed after the '90s decade were marked by a multitude of bilateral agreements, preferential treatment, shifting of allegiances and conflicts that changed and shaped the former soviet space into what we see today: an area where the economic integration process is led by Russia and any deviation is severely sanctioned.

In their attempts to integrate to an ever-competing market economy and the new realities at the international scale, the former soviet countries had chosen either to stick by Russia and follow its lead, or to attempt a shift both in terms of politics and economy, thus orienting towards the European Union (EU) and its values. To better illustrate these tendencies, we will analyze three of the former soviet states - Belarus, Ukraine and the Republic of Moldova- using macroeconomics indicators in light of their preferences, either the EU represented by the Deep and Comprehensive Free Trade Area Agreements or Russia with its Eurasian Economic Union economic regional integration project.

The variables used in our analyses are Gross Domestic Product, Foreign Direct Investments, trade balance structure and the Human Development Index and these were chosen to highlight the transformation that these states went through since the collapse of the Soviet Union.

The GDP and the Foreign Direct Investments are a clear indicator of economic development and economic stability and show the degree of confidence that the investors have in an emerging market economy, while the trade balance structure shows the progress and the capacity of an economy to adapt to the requirements of an evolving global market. The Human Development Index has been chosen to illustrate the link between the economic development shown by the other variables



and the welfare of the people of the states analyzed, as this is an indicator often used to better connect the economic data with the social reality.

Based on these variables, the purpose of our paper is to illustrate that although the centralized economy (specific to the communist era) and the production and export of the heavy industry products and agricultural goods is no longer in high demand, and as such, these three states have a long road ahead of them to diversify their economy and adapt to the international market.

The data comprised in the tables shown in the following sections illustrate that the transition towards a fully functional market economy is ongoing and that these states have still a challenging road ahead of them.

Belarus

Belarus is one of the most eloquent examples of the countries who stayed on the curse once the Soviet Union collapsed. In 1991 together with Russia and Ukraine formed the Commonwealth of Independent States, reaffirming its support towards the Russian politics and in 1993 took a step further in that direction by forming the customs union with Russia. Highly contested at that point and regarded as Russia's attempt to control its neighborhood as the European Union started to offer Free Trade Area Agreements to the states that were formally part of the soviet bloc, this customs union was the fundamental brick on would later become the Eurasian Economic Union.

The '90s were marked as one of the most difficult decades for most of the Eastern Europe states, punctuated with reforms and difficult decisions, which ultimately paved the way towards the marked economy status.

Belarus was no stranger to the challenges that the world economy required in order to be a competitor on a new market, but it remained mainly closed to the western developments, choosing to intensify the ties with Russia and CIS countries. This decision led to an underdevelopment of trade structure and a very low flow of foreign direct investments. With an approach nearly identical to Russia in terms of international trade relations and reforms, Belarus remained with an economy structured on soviet principles, a heavy industry that was no longer productive and an agricultural sector oriented towards producing the same goods as in the former years.

Belarus is a state with a highly centralized and state-controlled economy, an economy based on low energy prices and imports of raw materials from Russia. The economic crisis of 2008-2009 and the poor management of the situation created at the macroeconomic level led to a sharp deficit and the acceleration of the inflation rate (Purg, Sauka, Mets, 2018, p.78). Due to economic isolation, the situation in Belarus has been rectified with the help of Russia, which has intervened massively in the domestic economy since 2011. This intervention can be seen after 2011, but especially after 2015 when relations between the two intensified following the establishment Eurasian Economic Union.

Belarus is completely dependent on Russia for gas, and in this case, Russia is not only the main supplier of gas, but also the owner of the gas transmission network that passes under the territory of Belarus. The dependence on Russia is accentuated



not only by the fact that Belarus has a preferential tariff on gas and oil, but also by Russia's exclusive control over Belarus' trade policy upon joining the Eurasian Customs Union (Korosteleva et.al, 2018, pp. 124-131).

Belarus defines the economic system as market socialism, but it is most similar to a planned economy in which the central government directs the economy regarding the production and distribution of goods.

The relations between the European Union and Belarus have been strained, mainly due to the close relationship this state has with Russia, the autocrat style in which Lukashenko governs and the political repressions, the reluctance to adopt the European values and reforms required in order to sign a Deep and Comprehensive Free Trade Area Agreement.

However, during 2013-2014 Belarus played a mediating role in managing relations between Russia and Ukraine by facilitating high-level meetings (such as the 2013 Minsk Summit or the 2014 Warsaw Summit) and encouraging the parties to negotiate in order to find a solution to the conflict in eastern Ukraine. Belarus's attitude at the time prompted the European Union to change its approach and invite Belarus to more advanced discussions on cooperation between the two sides (Korosteleva, et.al, 2018, p. 142), but these discussions came to no avail.

From 2016 to 2020, there is no significant progress regarding the relations between Belarus and the European Union, no new agreement has been negotiated to regulate bilateral trade relations between the two parties, and even more, the dialogue was frozen. Moreover, on 17th of February 2020 the Council decided to extend the restrictive measures against Belarus with regard to the arms trade until February 2021.

Republic of Moldova

The Republic of Moldova is a component part of the Community of Independent States and the Organization for Democracy and Economic Development. It is also an important member of the Eastern Partnership, and since 2007 has begun to develop closer and closer relations with the European Union. As a result of the 2013 trade deficit and the economic crisis in Russia in the period of 2012-2015 that affected economic growth, in 2014 Moldova faced a sharp devaluation of the national currency, which led to the depletion of national reserves and the failure to prevent the effects of the crisis. .

Although Russia is Moldova's second largest trading partner (in importance), there are very strong links between these two countries due to energy dependence, proximity and similar industry standards. Because of this, Moldova is very vulnerable and its economy has suffered due to the signing and ratification of the Association Agreement with the European Union, when in 2013 Russia banned wine imports. This was followed by other bans such as pork products in April 2014 or canned vegetables and fruits in July 2014. Also in August 2014, Russia suspended preferential



agreements with Moldova guaranteed by the CIS Free Trade Area, and then impose serious restrictions on the access of Moldovan workers to the Russian market¹.

The trade structure of the Republic of Moldova is highly dependent on the export of wine and agricultural products and as such, a greater effort must be made to diversify exports. The European Union and the International Monetary Fund have allocated a number of funds to reduce the trade deficit, but negotiations for agreements with both parties are difficult due to objections raised by Russia, which sees any intervention in the area as a direct threat to its security and safety. (World Bank, 2018).

Ukraine

Ukraine is the largest state in the Eastern Partnership, but faces serious economic problems such as a sharp budget and trade deficit and an external debt that peaked at 78.1% of GDP in 2013. 2015, due to the reorientation towards the European Union and the granting of a loan by the IMF, the percentage of external debt relative to GDP starts to decrease slightly, reaching 73.2% in 2018. For the period 2019-2020, the consulted databases have no information.

The devaluation of the hryvnia that followed immediately after 2013, the year in which the external debt recorded the highest percentage, made Ukraine apply for loans from the International Monetary Fund in 2014 in order to more easily overcome the effects of the crisis. The loan was granted on a multi-annual basis and subject to harsh reforms. The immediate consequence was an increase in energy prices (up to five times) (World Bank, 2018)

The austerity measures also brought with them a slight economic growth, but the war with Russia and the cessation of its gas supply led to an increase in the depreciation of the hryvnia and a more severe depletion of the state's energy reserves.

In this situation, the European Union and the United States provided additional guarantees to the International Monetary Fund, and in addition the European Union made available to Ukraine a package of aid consisting of:

- Grants for development assistance
- Macro financial assistance
- Support for decentralization and reforms for regional development.

Due to the conflict in Donbass, which began in 2014, exports and imports to and from Russia decreased, while trade with the European Union increased slightly. As a result of Ukraine's proximity to the European Union, Russia has imposed import restrictions on products such as textiles, cars, food (Nordea, 2018).

Ukraine's exports to the countries that are part of the Eurasian Economic Union are mainly composed of transport machinery and equipment, a profile inherited since membership in the Soviet Union, and this type of product is unlikely

¹ Moldova Economic Outlook în Focus Economics. Economic Forecasts from World's Leading Economists, (retrieved from: <https://www.focus-economics.com/countries/moldova>).



to be of interest to the European market due to firstly the lack of demand and secondly the different quality standards.

On the other hand, exports to the European Union include mainly processed metals, scrap metal, iron ore, seeds and wood. Given this situation, the hypothesis has been advanced that what has been lost through the restrictions imposed by Russia can be gained through a closer rapprochement with the European Union. This is certainly plausible, but due to structural differences in trade flows, a simple substitution is not a long-term solution.

Ukraine is eminently dependent on Russia in terms of gas supply. After Russia stopped gas supplies to Ukraine in June 2014, it turned to other sources, mainly using connections to Europe through so-called reversible flows. Basically, Ukraine also bought Russian gas, but imported it from European countries. This led to vehement protests from Gazprom, and with the help of European Union mediation an agreement was reached between Russia and Ukraine towards the end of 2014 regarding gas supply. Starting with the period 2015-2019 amid the tense situation with Russia, Ukraine is reorienting towards Azerbaijan and other gas delivery routes that bypass Russia

1. Literature review

The literature studying the economic integration process in the former soviet space has evolved over the last 30 years from short studies with general characteristics to more complex one with pluridisciplinary approach. Through almost all the '90s decade the literature was focused on the ever-present theme from the Cold War of the "Good" fighting the "Evil". Most of the works covered comparative studies of the EU and CIS and focused on the resource competition on the area, leaving other themes such as market economy, transition or reforms in the subsidiary. Some of the most representative works from this period are those of Bruno (1994), Kamianski (1996) and Jovanivic (1998).

Starting with the 2000s there is a shift not only in the international economy, but also in the former soviet space and the literature is more complex. The decade that saw most of the former soviet republics becoming members of the World Trade Organization coincided with a plethora of studies focused on market economy, transition and regional integration. From 2000s onwards, the most representative works analyzing the former soviet space in terms of geo-economics and geo-politics are those of Korostelevna (2000, 2003, 2014, 2015, 2018), Zhukov and Reznikova (2008), Schumylo-Tapiola, (2014, 2015), Purg, Sauka and Mets (2018), Ryhor (2018), Makarychev and Mommen (2019).



2. Regional economic integration as a means to boost the transition towards market economy

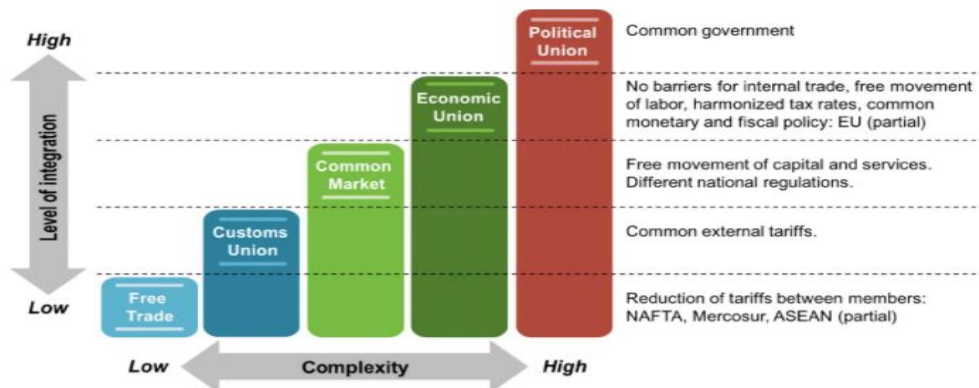
Regional economic integration is defined as an agreement between groups of countries in a geographic region, to reduce and subsequently remove tariff and non-tariff barriers to the free flow of goods, services, and factors of production between each other.

There are five levels of regional economic integration, as shown in the figure below. Their main characteristics depend on the level of integration. Each of these levels has a grade of complexity and a level of integration increased as they evolve from one-step to another. Thus:

- the Free Trade Area is based on the reduction of tariffs,
- the customs union stresses the need of common external tariffs,
- the common market underlines the freedom of movement of capital and services,
- for the economic union is primordial that there are no barriers for internal trade and the need for harmonized tax rates is primordial; also, a common monetary and fiscal policy and freedom of movement of labor force is crucial,
- while the political union cannot function without a common government.

Figure 1 below shows a schematic version of the levels of regional economic integration

Figure 1. Regional Economic Integration Levels



Source: The Geography of Transport Systems (2020)²

These characteristics are observed while analyzing the regional economic integration structures present all around the Globe.

Despite the fact that one of the most important objective of almost every regional economic integration structure was to boost the economic development of

² Levels of Economic Integration (2020), retrieved from: https://transportgeography.org/?page_id=4082.

the region, in reality in the former soviet space, these structures were constructed on a political basis and the goal of achieving market economy status and adhering to international standards was perceived as a betrayal towards Russia and thus severely sanctioned.

This approach can be observed in the way Russia reacted to the Deep and Comprehensive Free Trade Area Agreements offered to the Eastern Partnership states by the European Union on the one hand, and the aggressive marketing of the Eurasian Economic Union – the newest economic integration project led by Russia – on the other hand.

The sections below will underline the main characteristics of these structures, which will also be shown, and on the graphs analyzing the macroeconomic indicators for Belarus, Ukraine and Moldova.

2.1. The Deep and Comprehensive Free Trade Area Agreements

The trade part of the Association Agreements signed with the Member States of the Eastern Partnership takes the form of the Deep and Comprehensive Free Trade Area Agreements, which implement part of the *acquis communautaire* of the Internal Market. The “comprehensive” scope of the Agreements refers to the fact that these trade transactions not only liberalize trade in goods (ie the “traditional” part of a free trade agreements), but cover all important trade areas on the European Union’s agenda and those of world trade, such as:

- services,
- public procurement,
- competition
- intellectual property rights

The “in-depth” dimension of the Agreements refers to the fact that these trade agreements aim at the gradual integration of the economies of the partner countries into the Internal Market of the European Union based on legislative harmonization.

Deep and Comprehensive Free Trade Area Agreements provide for an extensive program of legal measures and institutional modernization in specific areas and, if properly implemented, should lead to more intensive trade relations with the European Union, as well as a harmonized business environment in the Eastern Partnership countries. Together, they will eventually lead to harmonization, especially in the economic field where is very important to create the conditions for a possible accession to the European Union of some of these states (Muravska, 2016). This criterion requires the existence of a functioning market economy, able to cope with the pressure of competition and market forces within the European Union.

It is important to emphasize that harmonization with European legislation is a much greater commitment than European standards, where the Deep and Comprehensive Free Trade Area Agreements offer only a gradual transposition. In accordance with the principles of the European standardization organizations, once



the European standards have been adopted by the signatory states, their national standards that conflict with the European ones will be abolished.

2.2. The Eurasian Economic Union

The Eurasian Economic Union (EEU), formed in 2015, is a regional economic integration project which has evolved from the Eurasian Customs Union established in 2010 by Russia, Belarus and Kazakhstan. It was designed to mirror the integration process of the EU at all levels, but in a shorter time frame. In 2010, President Vladimir Putin had all the milestones and time frame of this project all lined up, including the launching of the EEU in 2015. Even from the begging this project faced a lot of challenges, but by far the most dire ones were those concerning the standards, standardization and technical regulation, as they were the most important ones in order to advance in terms of harmonization. Technical regulations negotiations were most advanced in terms of harmonization. This is because the main objective in this area was to ensure the free movement of industrial products within the Eurasian Economic Union by removing technical barriers to trade (Vinukov, 2018, p.33).

To this end, the Eurasian Economic Commission has exclusive competence to adopt technical regulations which establish common mandatory requirements for products included in the Common List of Products and which are the subject of single certificates of conformity.

Manufacturers and importers of these products have the right to request a certificate valid in a country of the Eurasian Economic Union or a single certificate of conformity valid throughout the Union. Products which are not included in the Common List shall be subject to conformity assessment procedures in accordance with the rules of national law. Technical standards designed to ensure the conformity of manufactured or imported products with the requirements of technical regulations are voluntary and the Treaty on Eurasian Economic Union provides for their harmonization with international and regional standards.

Members of the Eurasian Economic Union are free to enter into agreements and establish their own trade and investment policy, provided that the most-favored-nation clause is granted in favor of the other states in the Eurasian Economic Union. Interestingly, with regards to the financial services sector, the Eurasian Economic Union Treaty provides for regulatory cooperation in order to harmonize relevant legislation in the long term. Coordination of transport policy provides for the liberalization of road, rail and inland waterway transport (The Eurasian Economic Union Treaty, Section VI, Functioning of the Customs Union) .

Trade within the Eurasian Economic Union is not the only area of interest for smaller members. Concerning trade with third countries, the Eurasian Economic Union has largely adopted Russia's tariff level - which is higher than that previously applied by Kazakhstan and Armenia - as a basis for the common external tariff, which means that other countries members of the Eurasian Economic Union have had to raise tariffs.



3. Trade balance structure

Trade balance structure is one of the most important indicator when analyzing the strength of the economy in relation to other countries from the region. This indicator is a solid base in analyzing the main partners of trade, but also the fluctuations that occur as time passes. These fluctuations can be linked not only to major international events such as shifts of power in the region, (frozen) conflicts, a change in the production factors or consumption needs, but also to internal developments such as the success (or rather failure) of reforms in core areas, the stability of macroeconomic environment or the satisfaction of the populations (linked in turn with the Human Development Index as shown in the last section of this study).

Following a trend set since the late '30s and being partly oblivious of the international standards, these countries failed to keep the pace with the technology and the new realities in terms of trade. Only when signing Free Trade Area Agreements with countries outside the soviet space had these states came across the reality that their soviet style economy was highly unprepared to provide competitive and qualitative products and services on a marked already liberalized and connected to the latest technology. Some of them choose to leave behind the "soviet tradition" while others remained glued to the old ways.

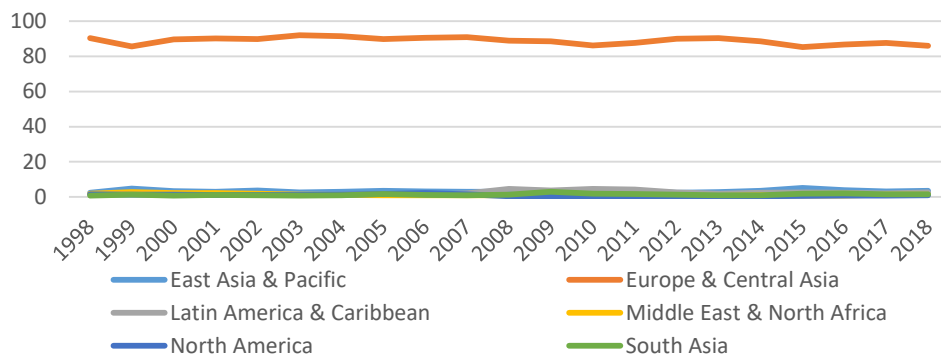
In order to demonstrate this, the series graphs below illustrate the trade structure of Belarus, Moldova and Ukraine in terms of trade partners and the structure of their imports and exports. Thus, Figure 2 shows the main export partners for Belarus. As shown in the previous section, over the years the export partners remained the same for Belarus with Europe and Central Asia clearly leading in comparison to other areas of the Globe. The need to explore other markets and identify new potential trade partners is close to non-existent for a country unwilling to implement reforms and to invest in the development of its underperforming economy.

Russia absorbs the main products destined for export because Belarus is part of the economic integration structures led by this country such as the CIS and the Eurasian Economic Union. However, due to the usage of the old soviet standards and the reluctance to adopt new ones, its products have become uncompetitive on a market that is no longer based on heavy industry and agriculture. The data for 2019-2020 is not yet available. The graph showing the main import partners for Belarus is illustrated below in Figure 3. The imports show the same tendency as the exports, as Belarus is clearly oriented towards Europe and Central Asia.

This change in the imports is a consequence of the fact that Belarus is a founding member of the Eurasian Economic Union (EEU), which had started in the latest years to sign free trade area agreements with other countries mostly from Asia-Pacific region. These free trade area agreements contributed to the diversification of imports for the members of the EEU. The data for 2019-2020 is not yet available. In order to better understand the trade flows of Belarus, Figure 4 and 5 show the most important exported and imported products.

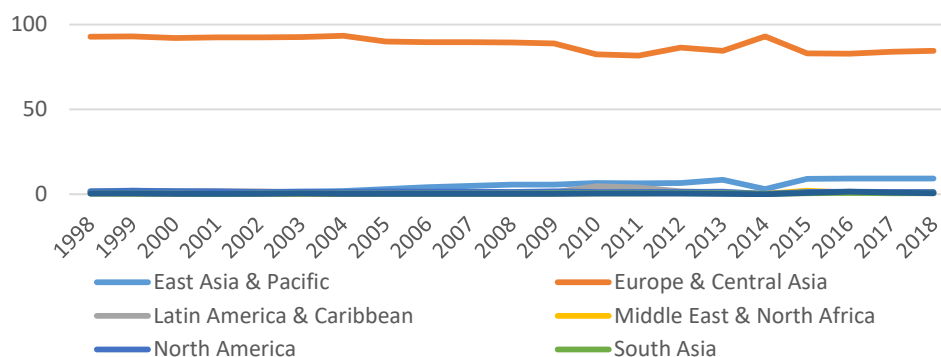


Figure 2. Belarus: main export partners



Source: authors' representation based on World Bank data(2020)³

Figure 3. Belarus: main import partners



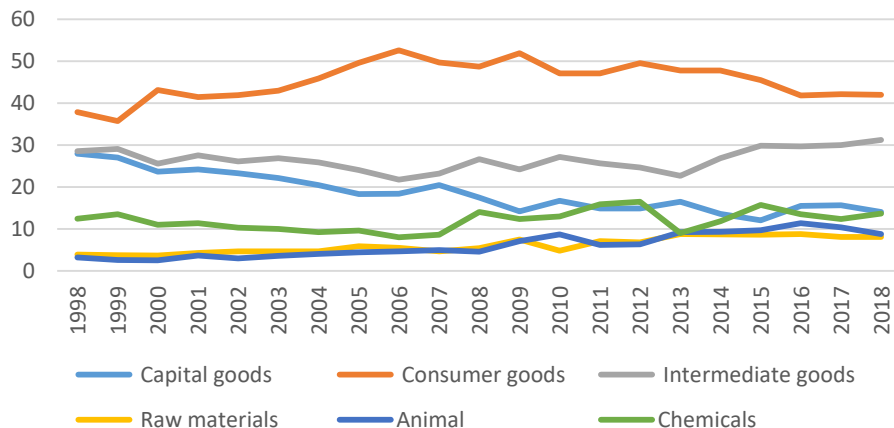
Source: authors' representation based on World Bank data (2020)⁴

From 2015 onwards, the curve representing consumer goods tends to stabilize around 40%, an improvement compared to the first years after the collapse of the Soviet Union. Intermediate goods tend to stabilize towards the value of 30% of the total exports, while the capital goods lose ground starting with 2009, reaching 15% in 2018. An interesting evolution can be observed regarding the evolution of capital goods which were on a descendent path since 1999, reaching 10% in 2018 and the raw materials which are on a steady path until 2010, and then started to increase until 10% in 2018.

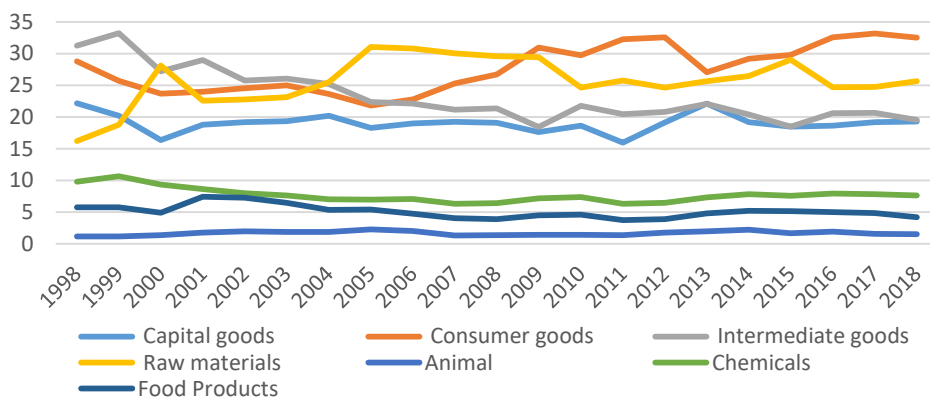
³ The World Bank, Belarus Trade Statistics, (retrieved from: <https://wits.worldbank.org/CountryProfile/en/BLR>).

⁴ *Ibidem*.



Figure 4. Belarus: most relevant exported products

Source: authors' representation based on World Bank data (2020)⁵

Figure 5. Belarus: most relevant imported products

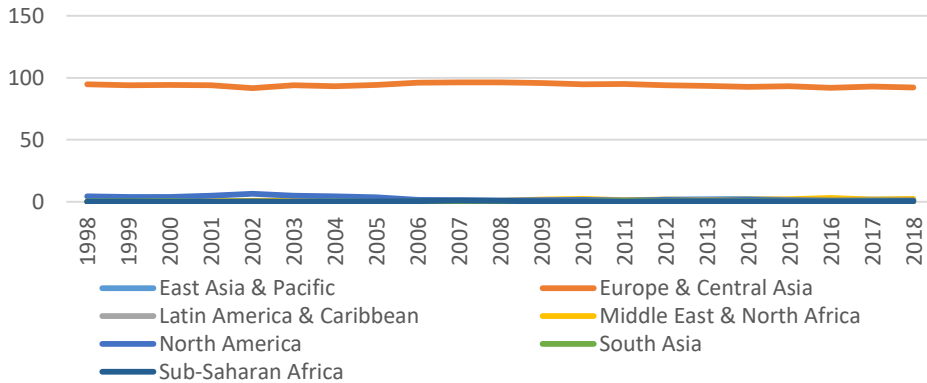
Source: Author's representation based on World Bank data (2020)⁶

Belarus imports are mainly composed of consumer goods, raw materials and intermediate goods whose percentage is between 20% and 33% in 2018. Chemicals and food products have a lower share, between 2% and 5%, while capital goods stabilized around 20% for the entire time frame analyzed. Compared to Belarus, the trade indicators for Moldova look different, as shown in the series of graphs below, illustrated by Figure 7, Figure 8, Figure 9 and Figure 10.

⁵ The Observatory for Economic Complexity, Trade data, (retrieved from: <https://oec.world/en/>).

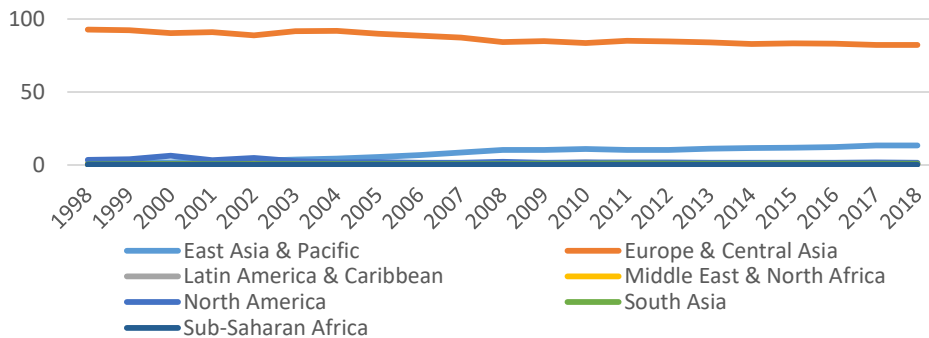
⁶ *Ibidem*.

Figure 7. Moldova: main export partners



Source: author's representation based on World Bank data (2020)⁷

Figure 8. Moldova: main import partners



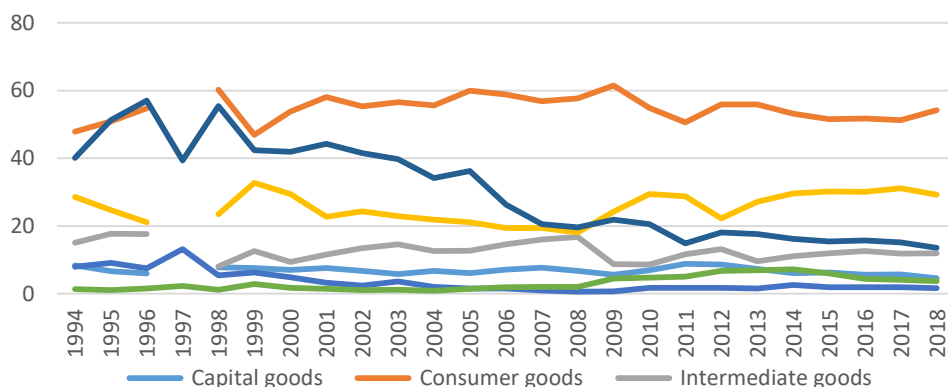
Source: author's representation based on World Bank data (2020)⁸

Unlike exports that are concentrated exclusively to Europe, on the import chart we can see that the curve for East Asian and Pacific countries is marked, a sign that consumer preferences in the Moldovan market are beginning to diversify and try to reduce dependence on the CIS market.

⁷ The World Bank, Moldova Trade Statistics, (retrieved from: <https://wits.worldbank.org/CountryProfile/en/MDA>).

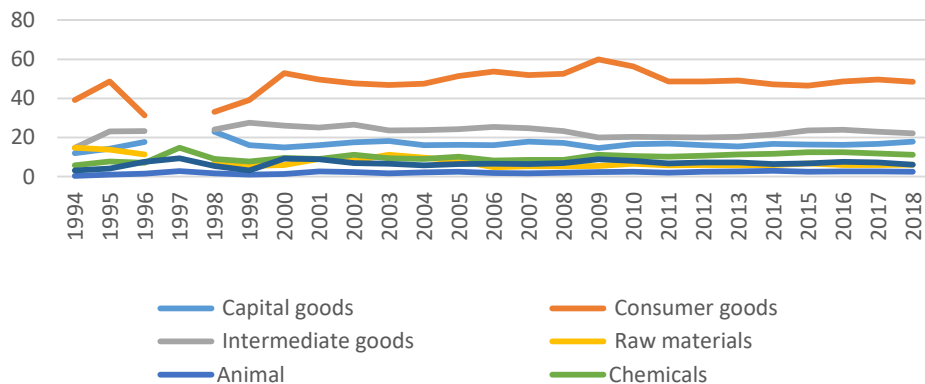
⁸ *Ibidem*.



Figure 9. Moldova: most relevant exported products

Source: author's representation based on World Bank data (2020)⁹

Moldova exports mainly consumer goods - over 50% in 2018, raw materials - 30% in 2018, followed by food, intermediate and capital goods, chemicals and animal products, with percentages ranging from 12% to 2% in 2018. Vegetable products and plants, as well as textiles and clothing contribute to the diversification of Moldova's exports. At the level of 2018, they stood at 28%, respectively 14%.

Figure 10. Moldova: most relevant imported products

Source: author's representation based on World Bank data (2020)¹⁰

Moldova concentrates its exports mainly to Romania, which is also the main trading partner, Russia and Ukraine. In the case of Moldova, it is best to see the orientation of international trade towards close neighbors, in a percentage of almost

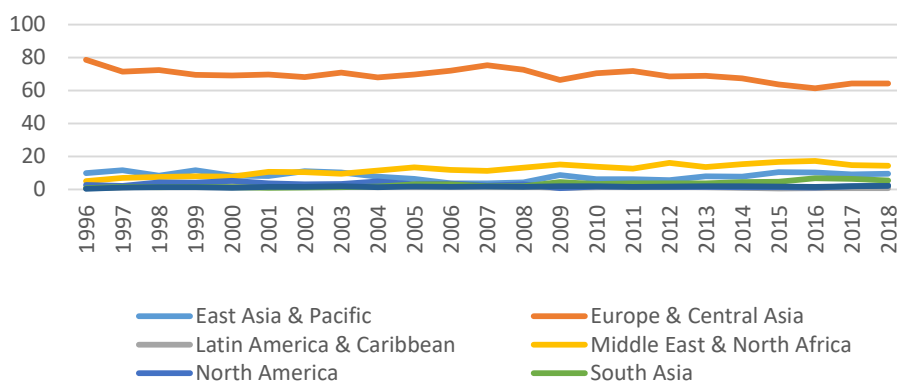
⁹ The Observatory for Economic Complexity, Trade data, (retrieved from: <https://oec.world/en/>).

¹⁰ *Ibidem*.

100%. States in the rest of the world are barely represented on the chart, and this is due to the fact that Moldova is part of few international trade agreements.

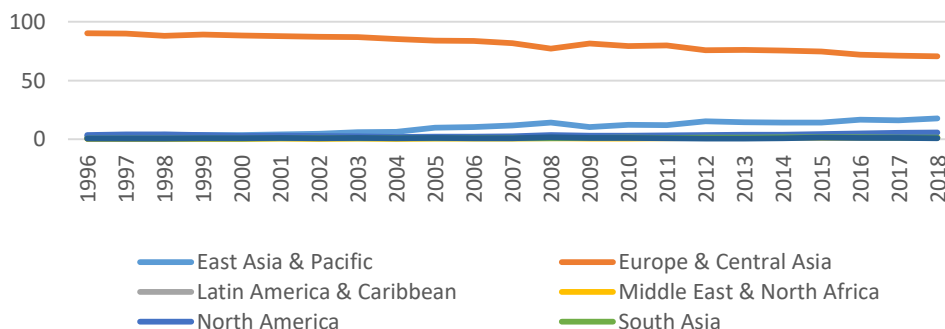
Moldova mainly imports consumer goods. They have a share of 50% of total imports since 2011, and this percentage has been maintained until 2018. Intermediate goods and capital goods are the following categories of products that Moldova imports, their percentage values being around the figure of 22% and 18% respectively at the level of 2018

Figure 11. Ukraine: main export partners



Source: author's representation based on World Bank data (2020)¹¹

Figure 12. Ukraine: main import partners



Source: authors's representation based on World Bank data (2020)¹²

¹¹ The World Bank, Ukraine Trade Statistics, (retrieved from: <https://wits.worldbank.org/CountryProfile/en/UKR>).

¹² *Ibidem*.



The trade indicators for Ukraine illustrated in the Figure 11, 12, 13 and 14 look somewhat similar to those of Moldova and Belarus given the fact that they were all part of the Soviet Union and had a similar model of centralized economy for the better half of the last century.

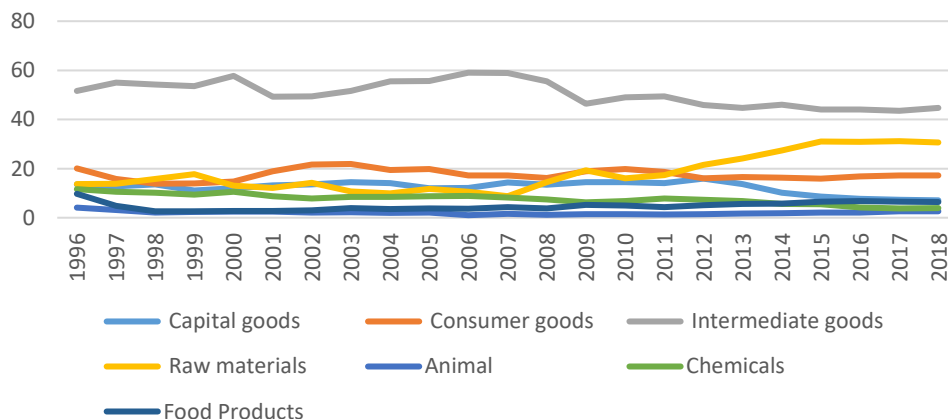
Ukraine's exports are mainly oriented to Europe and Central Asia, but since 2006 it can be seen that the share of the Middle East and North Africa is starting to approach 20% and this trend is maintained until 2018. Starting with 2009, exports to Europe and Central Asia are starting to decline by up to 60%, but this indicates a concern for diversification, as the chart above shows. Thus, it is observed that exports are beginning to move to more remote areas such as South Asia.

If in the early 1990s almost all of Ukraine's imports came from Europe and Central Asia, mainly from Russia and China, it can be seen that the percentage in these areas starts to decrease from 2008 when it reaches 76%. The downward trend is maintained until 2018 when the percentage reaches 70%. On the other hand, the percentage of East Asian loans starts to increase from 2004 when it reaches 10%, and the upward trend is maintained until 2018 when the percentage reaches 20%.

The share of export products is changing, a sign that Ukraine is starting to follow the trends of the international market with its opening to the European Union, accession to the World Trade Organization and then the signing of Free Trade Area agreements with the European Union.

Intermediate products have decreased considerably since 2009 from 60% (at the level of 2005-2007) to 50%. After 2009, they decrease even more, reaching 45% in 2018.

Figure 13. Ukraine: Most relevant exported products

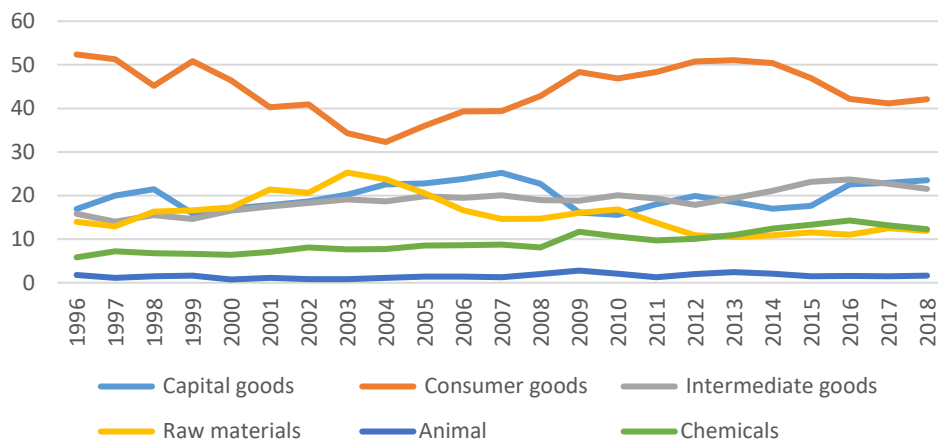


Source: authors's representation based on World Bank data (2020)¹³

¹³ The Observatory for Economic Complexity, Trade data, (retrieved from: <https://oec.world/en/>).

The same trend is observed in capital goods, while the export of raw materials increases from 20% in 2012 to 30% in 2015, and this percentage is main Gas exports have been declining since 2014, when the conflict with Russia began due to the annexation of Crimea, and metals also experienced a sharper decline with 2009, a year that marks an older conflict with Russia that is growing with increasing gas tariffs. In 2018, the export of metals reached 25%, and those of gas decreased up to 3%. The exports of cars and electrical products have a somewhat linear evolution, which in the period 2008-2018 is at a percentage value of 10%.

Figure 14. Ukraine: Most relevant imported products



Source: authors' representation based on World Bank data (2020)¹⁴

Consumer goods are the main product category imported by Ukraine, followed by capital goods, intermediate goods and chemicals. The largest fluctuation was in consumer goods, which in the period 2011-2015 reached the level of 50%, and since 2016 they remain at 41%. As for intermediate and capital goods, they are close as a percentage - 22-23% in 2018. In terms of imports, they increased by 21% in 2017, and the EU's share of total imports from Ukraine was 42% of the total, remaining in the range of 39-44% after Ukraine began importing gas from the EU. from 2014, as shown in the graphs below. The structure of imports was more stable with the shift to minerals, machinery and equipment to the detriment of agricultural, chemical and stationery products. This trend is illustrated in the series of graphs below which show the main groups of imported products.

The most significant increases are recorded by consumer goods (since 2009), capital goods (since 2016) and intermediate goods (since 2013). A slight increase is also observed in terms of plastic and rubber products (since 2014), but also mechanical and electrical products (since 2015).

¹⁴ *Ibidem*.

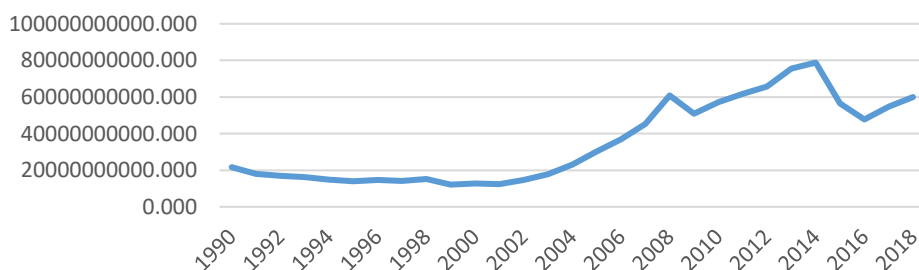


4. Gross Domestic Product

Gross Domestic Product is an important indicator for economists and investors alike because it illustrates the economic production and growth and it shows the health of the economy, its strength and capacity to sustain growth and development. GDP measures the monetary value of final goods and services (those that are bought by the final user) produced in a country in a given period. It also includes some nonmarket production, such as defense or education services provided by the government (IMF, 2020).

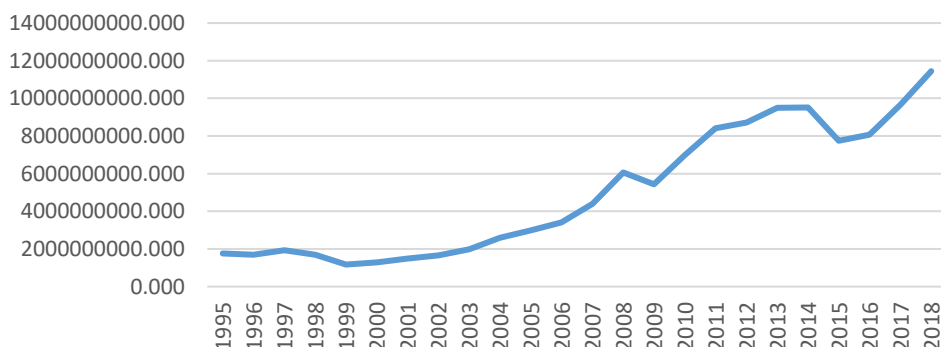
Figure 15, Figure 16 and Figure 17 offers an analyses of the fluctuation of GDP for Belarus, Moldova and Ukraine from the early '90s until 2018. The data for 2019-2020 is not yet available.

Figure 15. Belarus: GDP - \$



Source: authors' representation based on World Bank data (2020)¹⁵

Figure 16. Moldova: GDP - \$



Source: authors' representation based on World Bank data (2020)¹⁶

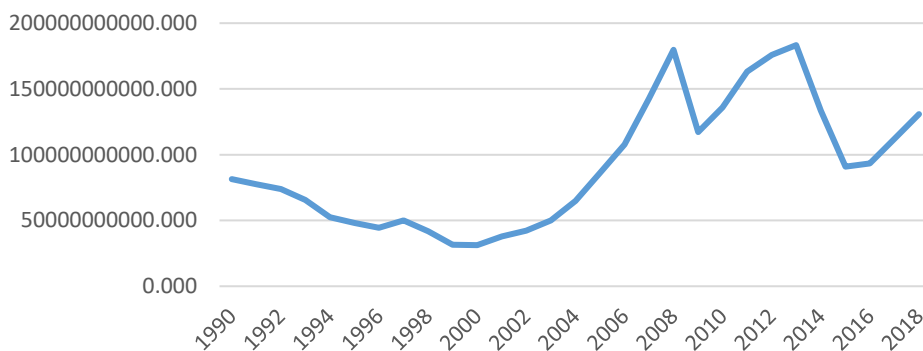
¹⁵ The World Bank, Belarus – GDP (retrieved from: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BY>).

¹⁶ The World Bank, Moldova –GDP (retrieved from: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BY>).

GDP in Belarus averaged 36.13 USD Billion from 1990 until 2018, reaching an all time high of 78.81 USD Billion in 2014 and a record low of 12.14 USD Billion in 1999. GDP in Belarus is expected to reach 51.10 USD Billion by the end of 2020, according to Trading Economics global macro models and analysts expectations. In the long-term, Belarus's GDP is projected to trend around 59.00 USD Billion in 2021 and 62.50 billion in 2022. (Trading Economics, 2020). GDP in Moldova averaged 4.82 UDS Billion from 1990 until 2019, reaching an all time high of 11.96 USD Billion in 2019 and a record low of 1.17 USD Billion in 1999.

GDP in Moldova is expected to reach 10.30 USD Billion by the end of 2020, according to Trading Economics global macro models and analysts expectations. In the long-term, Moldova's GDP is projected to trend around 11.40 USD Billion in 2021 and 12.30 USD Billion in 2022. (Trading Economics, 2020)

Figure 17. Ukraine: GDP -\$



Source: authors' representation based on World Bank data (2020)¹⁷

GDP in Ukraine averaged 91.57 USD Billion from 1987 until 2019, reaching an all time high of 183.31 USD Billion in 2013 and a record low of 31.26 USD Billion in 2000. GDP in Ukraine is expected to reach 115.00 USD Billion by the end of 2020, according to Trading Economics global macro models and analysts expectations. In the long-term, Ukraine's GDP is projected to trend around 142.00 USD Billion in 2021 and 159.54 USD Billion in 2022. (Trading Economics, 2020).

5. Foreign Direct Investments

For developing countries, the Foreign Direct Investments have become an important source of private external finance. They represent investments in production facilities, but their significance for developing countries is much greater. They can add to investible resources and capital formation, and represent a means of transferring production technology, skills, innovative capacity, as well as

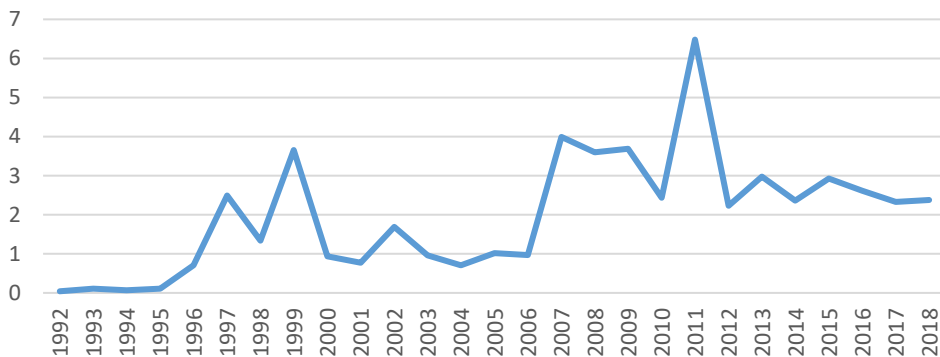
¹⁷ The World Bank, Ukraine –GDP (retrieved from: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BY>)



organizational and managerial practices between locations. Last, but not least, they are also an instrument of accessing international marketing networks. (IMF, 2020)

Given the potential role FDI can play in accelerating growth and economic transformation, developing countries are strongly interested in attracting it. The tables below shown by Figure 18, Figure 19 and Figure 20 illustrate this as they provide a picture of the FDIs in the countries analyzed from the '90s until 2018. The data for 2019-2020 is not yet available.

Figure 18. Belarus: Foreign Direct Investments inflows



Source: authors' representation based on World Bank data (2020)¹⁸

Foreign Direct Investment in Belarus averaged 328.94 USD Million from 2000 until 2020, reaching an all time high of 2734.30 USD Million in the fourth quarter of 2011 and a record low of -298.40 USD Million in the second quarter of 2018 (Trading Economics, 2020)¹⁹. The vast majority of the FDIs come from Russia as a token of appreciation for the “long-lasting friendship” between these countries.

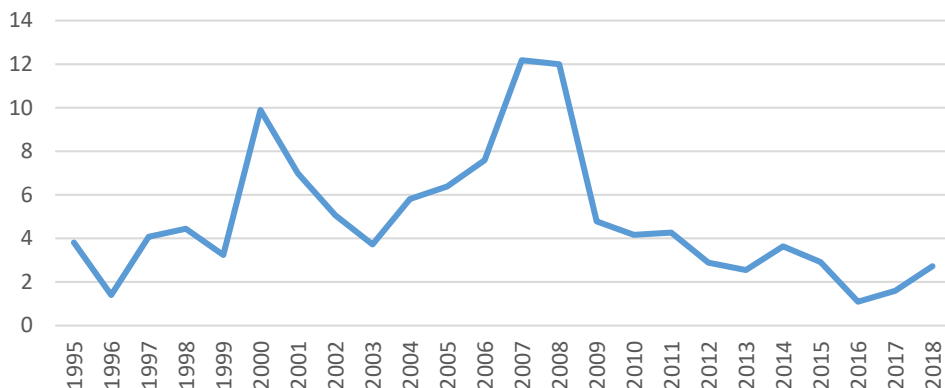
Foreign Direct Investment in Moldova averaged 57.86 USD Million from 1995 until 2020, reaching an all time high of 292.04 USD Million in the second quarter of 2019 and a record low of -9.26 USD Million in the second quarter of 2016.²⁰ Starting with 2017 the amount has started to rise, but the political instability led to a lack of interest from the foreign investors (UNDP, 2019). In Moldova, almost 60% from the FDIs come from EU countries, while those from the Russian Federation amount around 28%. (Woldemar, Luecke, Lupusor, 2017).

¹⁸ The World Bank, Belarus –FDI (retrieved from: <https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD>).

¹⁹ Trading Economists, Belarus statistics (retrieved from: <https://tradingeconomics.com/belarus/gdp-growth-annual>).

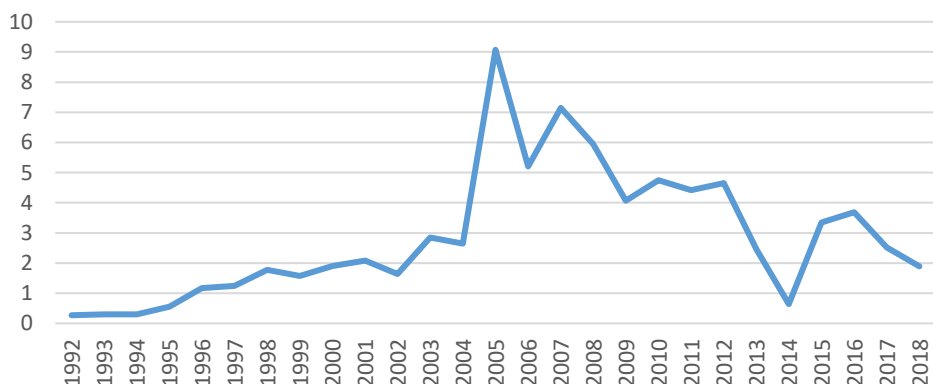
²⁰ Trading Economists, Moldova statistics (retrieved from: <https://tradingeconomics.com/moldova/gdp>).

Figure 19. Moldova: Foreign Direct Investments inflows



Source: authors' representation based on World Bank data (2020)²¹

Figure 20. Ukraine: Foreign Direct Investments inflows



Source: authors' representation based on World Bank data (2020)²²

Foreign Direct Investment in Ukraine averaged 1002.19 USD Million from 1998 until 2020, reaching an all time high of 6502 USD Million in the fourth quarter of 2005 and a record low of -3200 USD Million in the first quarter of 2015²³. The vast majority of the FDIs in Ukraine comes from EU countries, especially after the rift with Russia after 2014 (Nordea, 2020)²⁴.

²¹ The World Bank, Moldova- FDI (retrieved from: <https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD>).

²² The World Bank, Ukraine – FDI (retrived from: <https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD>).

²³ Trading Economists, Ukraine statistics (retrieved from: <https://tradingeconomics.com/ukraine/gdp-growth>).

²⁴ Nordea, Country Profile Ukraine (retrived from:: <https://www.nordeatrade.com/en/explore-new-market/ukraine/investment>).



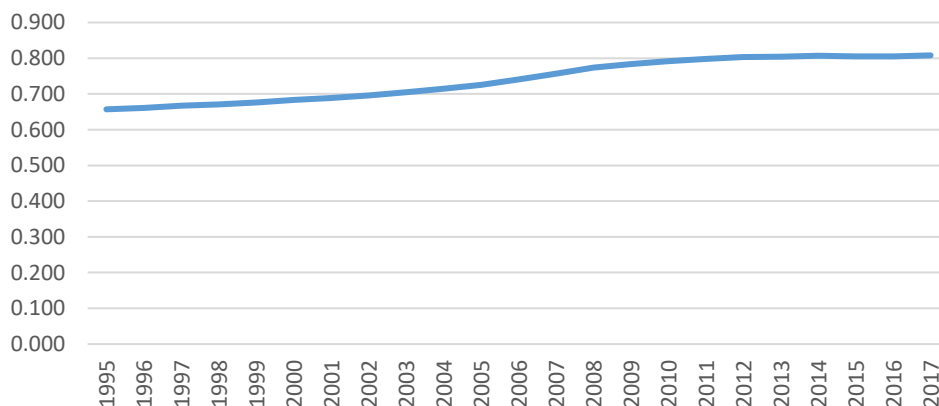
6. Human Development Index

The Human Development Index (HDI) was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.

The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and above, and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing Gross National Income. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean.

The graphs below illustrated by Figure 21, Figure 22 and Figure 23 show the evolution of HDI for every state analyzed in this paper. The data for 2019-2020 is not yet available

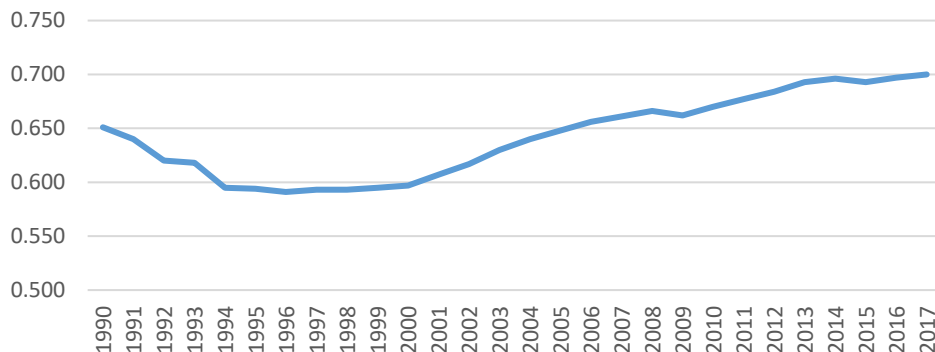
Figure 21. Belarus: Human Development Index



Source: authors' representation based on Human Development Index data (2020)²⁵

As shown in the graph above, even from the '90s the HDI in Belarus has maintained an elevated average, reaching 0,8 in 2008 and maintaining this level until 2018. This means Belarus has not only a high life expectancy, a highly educated population with a high standard of living.

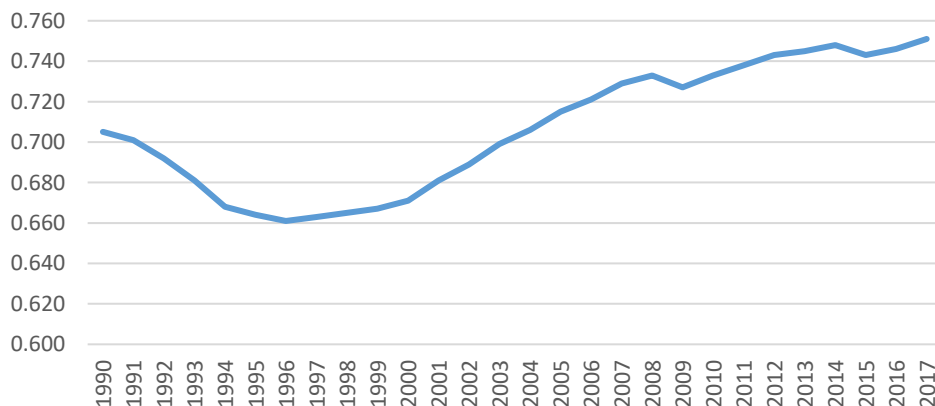
²⁵ Human Development Index data, (retrieved from: Human Development Index - HDI 2017 | countryeconomy.com)

Figure 22. Moldova: Human Development Index

Source: authors' representation based on Human Development Index data (2020)²⁶

For Moldova the HDI depicts the struggles of this country from the early '90s onwards. The low levels of this indicator from the 1990 until 2005 show the low life expectancy, the lack of education and low standard of living, all of these being the harsh reality of the first 15 years after the communism fell.

The HDI increases with 2005 reaching 0,7 in 2014 and maintaining this value until 2018, a sign that in Moldova the life expectancy is higher and more population has access to education and a higher living standard.

Figure 23. Ukraine: Human Development Index

Source: authors' representation based on Human Development Index data (2020)²⁷

The HDI evolution for Ukraine follows almost the same pattern as observed in the case of Moldova. The first 10 years after the USSR collapsed, from 1990 until 2000 the HDI has a low level, a sign of low life expectancy, the lack of education

²⁶ *Ibidem.*

²⁷ *Ibidem.*



and low standard of living. Starting with 2001 the HDI is on an ascedent path, from 0,68 to 0,75 in 2018, sign that the life expectancy grew, the standard of living is higher, and more population has access to education.

Conclusions

Market economy status was a goal for most of the former soviet states and in order to achieve it they embarked on a challenging road of reforms and transformation of all levels – from policies and politics to trade and doing business. This transition process marked their existence during most of the '90s and it was illustrated in their behavior on the international arena especially in terms of trade, GDP and FDIs.

Being positioned between to major regional players- the European Union and Russia, and having a highly unstable political climate, it is indeed very challenging to form and follow a secure path towards economic development and international recognition as a stable, safe market.

For Moldova and Ukraine this process was rewarded with closer ties to the EU through the Eastern Partnership and DCFTAs agreements, but at the same time they had to face the changing attitude of Russia manifested by an aggressive international policy and sharp tariffs to imports and exports. Belarus had chosen to maintain a very close relationship with Russia both in terms of international politics as well as trade and other economic aspects.

But these choices did not make out of Belarus, Ukraine and Moldova a winning party of the transition process. In many ways these countries still struggle to finish the transition and gain a respectable place in the international economics arena. Their economy still needs serious investments into trade diversification and a better connection to the international market through strategic trade agreements and FDIs. Their industry, which still works on the old soviet principle, needs to be modernized and a new, modern industry infrastructure put in place.

Agriculture, which for Moldova and Ukraine was a valuable asset at the beginning of the '90s, would benefit from major investments in irrigation and new farming methods using the benefits of today's technology. Developing new markets with the help of internal and external funding and exploring new markets and a new way of doing business would help these countries not only to thrive, but also to be recognized as promising emerging markets for the investors around the world.

After analyzing all the data illustrated in the sections above we conclude that the road towards a fully function market economy is not over yet for neither of these countries. The trade structure clearly shows their struggle to overcome their way of trading since the communist era and the GDP and FDI show their vulnerability to the global markets and their incapacity to better protect themselves in face of economic and financial shocks.

Being positioned between to major regional players- the European Union and Russia, and having a highly unstable political climate, it is indeed very challenging



to form and follow a secure path towards economic development and international recognition as a stable, safe market. In this regard, new steps need to be taken in order to strengthen the relations and links between the EU and these states. The frame of the Eastern Partnership needs to be revised in order to accommodate the particularities of these countries and to take into consideration the new realities that these countries are facing.

On the other hand, Moldova and Ukraine need to put a better effort into implementing the reforms required by the DCFTA agreements in order to have a better access to the European Single Market and to attract new investments. The reforms required contribute not only to a better adapted economy to the requirements of a global market, but also to a more stable political climate, giving thus a boost for the FDIs.

Getting closer to the European Union through the EaP and DCFTA needn't signify that the relations with Russia lose their importance, on the contrary. As the graphs show, Russia is still a very important trading partner for Ukraine, Moldova and Belarus, and thus its importance as a major player in the regional trade is unquestionable. Given the new realities, it is advisable that the trade agreements with Russia to be re-negotiated on agreeable terms for all the parties involved. A special case is that of Belarus whose close ties with Russia are undeniable ever since the early '90s. The links between these two states and the fact that Belarus is a founding member of all the regional economic integration structures led by Russia, should be a clear sign for the EU to re-think its approach towards this state. It is clear that Belarus won't abide by the sale rules and regulations that Ukraine and Moldova did, and as such a new frame approach will perhaps open a new way to re-initiate a dialogue with this country.

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MANAGING DIGITAL CHANGE IN EUROPEAN HIGHER EDUCATION

Dumitrița IFTODE*

Abstract

The purpose of this paper is to reveal the concepts of how digital transformation affects higher education, introduces the peculiarities of managing digital transformation, discusses good practices and emerging challenges. For fulfilling the papers' objectives, the main research questions established are: How do higher education institutions manage digital transformation? Which are the main challenges and solutions for the digital transformation process? The research objective is realized through studying secondary data from previous studies, online sources, and reports. Therefore, the study revealed that the digital change and the tension associated with it are inevitable and facing the challenges through a good strategy and openness seems to be the right way to be followed by the academic environment. Under the pressure of current situation universities must move towards the new requirements and react to the flexibility and inquiries of the external and internal digital and technological changes.

Keywords: digital transformation, higher education, managing digital change, digital strategy

Introduction

The emergency of digital change is inevitable in higher education especially in the latest worldwide context caused by the pandemic. Digital technology is changing people's lives, businesses and society as a whole. Higher education institutions are particularly affected by digital changes and evolution. These changes can certainly provide new services and innovation opportunities, but they can also represent huge challenges. This particular crossroad moment might be a good moment for turning the crisis into a development opportunity for the universities' programs.

The quick evolution and development of digital technologies contribute to changes and turning points in every aspect of the modern society. As education is one of the most important bricks at the basement of a society, digital changes in this area should keep the pace with the emerging technologies. However, this would be

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possible in an ideal situation; in the real-life scenario higher education is struggling to keep the pace and require collateral help in fulfilling the needs and demands to adapt to the new era.

Digital innovation influences the manner in which people communicate, interact, learn and work which actually triggers further change and digital transformation. The process of digital transformation involves an ecosystem of technologies like artificial intelligence, IoT (Internet of Things), big data, 5G, etc. Higher education institutions are particularly affected by the continuously evolving technology and the need to create a synergy between technologies, teaching/learning methods, students' preferences and needs.

Managing these the digital changes in higher education becomes a real challenge because universities as public institutions are much more limited by financial support and public policies in this regard. However, for digital success, the right balance and 24/7 connectivity among students, academic staff, and department are the key elements for staying relevant. In the digital age, the expectations that students have from their universities have changed. Nowadays, new challenges and opportunities create incentives for adapting the teaching methods, the ways of learning, and researching.

In the current paper I will seek to answer to the following questions: *How do higher education institutions cope with / manage digital transformation? and Which are the main challenges and solutions for the digital transformation process?* The goal is achieved through studying the secondary data from previous studies on the topic, online sources, articles, reports and statistics.

1. A conceptual framework of digital change in higher education

The involvement of digital technologies in higher education framework is lately in the spotlight of many stakeholders. It is particularly difficult to change universities because they are resistant to change. Managing change in universities (in this case a digital change) is perhaps the most daunting challenge faced by senior managers in today's organizations. The integration and innovative use of digital technologies in education is a policy priority in the entire European Union. There is a wide range of measures to support the digitalization of education, which is also a key priority for several Europe 2020 pilot programs, in particular for the skills and jobs agenda, youth on the move, the digital and innovation agenda.

The European University Association (EUA) launched in 2020 a project that is designed to create a self-reflection tool which will help higher education institutions from Europe to develop and improve their approaches to digital transformation (The European University Association, 2019). Also, regarding the digital matter, the European Commission settled the new "Digital Education Action Plan 2021-2027" which emphasizes the Commissions' view for high quality, engaging and accessible education in European Union (EU). The plan represents a call to action for stronger collaboration at the EU level and enhanced two major

aspects. First of all, the need to learn from the current experience with the COVID-19 crisis, which forced using technology at a very large scale. Secondly, education system needs fit to the new digital era (European Commission, 2020). Therefore, the recognition of the high need and importance of the information and communication technology (ICT) in higher education environment is increasing also with national and international European policies.

In order to be as effective as possible, digital educational development should correspond to a strategy, clearly described and supported by a plan developed by the academic environment. According to the survey conducted in 2017 by Ernst & Young, with universities and their students, 93% of respondents believe that digital evolution will have a significant impact on universities over the next decade. The same representatives of the institutions argue that universities adopt digitalization because this contribution to learning more efficient and better results from students (EY-Parthenon, 2017). Navitas Ventures performed in July 2017 a study through which he collected data on digitization and transformation into higher education. The participants of the study were leaders, facilitators of change but also of those affected by digital transformation in universities (26 leaders of Navitas partner universities, 100 students from Navitas partner universities, and 42 start-ups in education). The purpose of this study was to obtain information on the perspectives of the groups target, with reference to digital change - opinions and experiences. At least 50% of the participants of the study expects the “traditional university” model to undergo major changes by 2025. There was generally a consensus regarding the importance of using technology to improve student experiences through automation, digitization, integrated processes, etc (Navitas Ventures, 2017).

The academic environment should manage the necessary changes by having a formal plan or strategy that sets out (Bates, 2015):

- motivation for change;
- the objectives or results achieved as a result of these changes (for example, students with specific skills and competences);
- actions that will support the changes (for example, funding for new course design, reorganization of services);
- a financial strategy to support planned changes;
- a way to measure the successful implementation of the strategy.

The true potential of technology can be harnessed by expanding human capabilities for teaching, learning and research. Digital learning technology is a change by itself, so it is not the organizations that change, but the stakeholders: employees, managers, colleagues, academic staff and students change through the way they work. Change management is a combination of processes, activities and approaches that guide the people of the organization from the old way to a new way of training and learning. This process focuses on attitudes and behaviours, and the goal is to win the battle for the “hearts and minds” of all people in the organization (Brandon, 2007). The introduction of a new way of learning involves a change in culture, habits and requires a change in resistance to new technology and learning methods mainly from fear of risk. The field of education is a prime example of how



some organizations may be reluctant to embrace change. Implementing change is primarily process-based, inclusive and always two-way, an approach that does not prevent individuals from thinking and acting differently and focuses on developing and strengthening new individual and organizational attitudes and behaviours. The administration, faculties and other members of the institutional staff often choose to remain in their comfort zone, which makes it difficult to introduce their new technologies or skills. But staying immune to change is no longer an option. In order to evolve at the level of the institution, everyone must be “on board” and be ready to face the much-needed change (Spear, 2019).

The traditional higher education structure has been maintained in the geographical and cultural boundaries of nearly a thousand years and the social, economic and political changes of hundreds of years. Some higher education officials believe that relying on traditional hierarchies is outdated because of the digital evolution and unmet challenges by today’s higher education (Fishman, 2014). Organizational leaders are managing change in various ways. Access to data anywhere and anytime made the business structures more transparent and, in some cases, democratizes decision-making, thereby ensures that the employees, faculty, and leaders have a say. Leaders at the University of Surrey, King’s College London, and the Open University believe that this approach can help the academic environment to be more inclusive, develop future strategies and improve the graduation ration (Educase, 2018).

A change implementation model is based on three important phases that form a continuous cycle: information, involvement and integration. Institutions need to understand that it is not enough to have the right content, the right design and the right technology. To ensure success you need to pay attention to student involvement, staff motivation and dynamism of organizations. Many authors have put the spotlight on higher education and the need to change and adapt. Hundreds of pages discussed the reimaged university and the critique to higher education digital drawbacks (Marshall, 2018; Selwyn, 2017). Whereas when facing the COVID-19 emergency for remote learning a lot of universities were caught barehand. Jisc, the UK digital education organization, displayed the results of a current report on the students’ digital experience insights. The study revealed that three main focus areas needed to be addressed: teaching and learning design, digital access and inequality, students’ digital capabilities (Jisc, 2020). Regarding managing and leading the change the Digital Clarity Group conducted a study which revealed that one of the key success elements for digital transformation in higher education sector is to develop digital leadership. The study reveals that digital leadership is one of the biggest gaps nowadays and addressing this element should be on the top of the list (Elliot *et al.*, 2016).

Digital transformation refers to changing from a traditional (paper-based) university to a one based on digital instruments and it affects all the areas of academic environment. This is does not only refer to equipment related



transformation but one that includes the management process and the right management model.

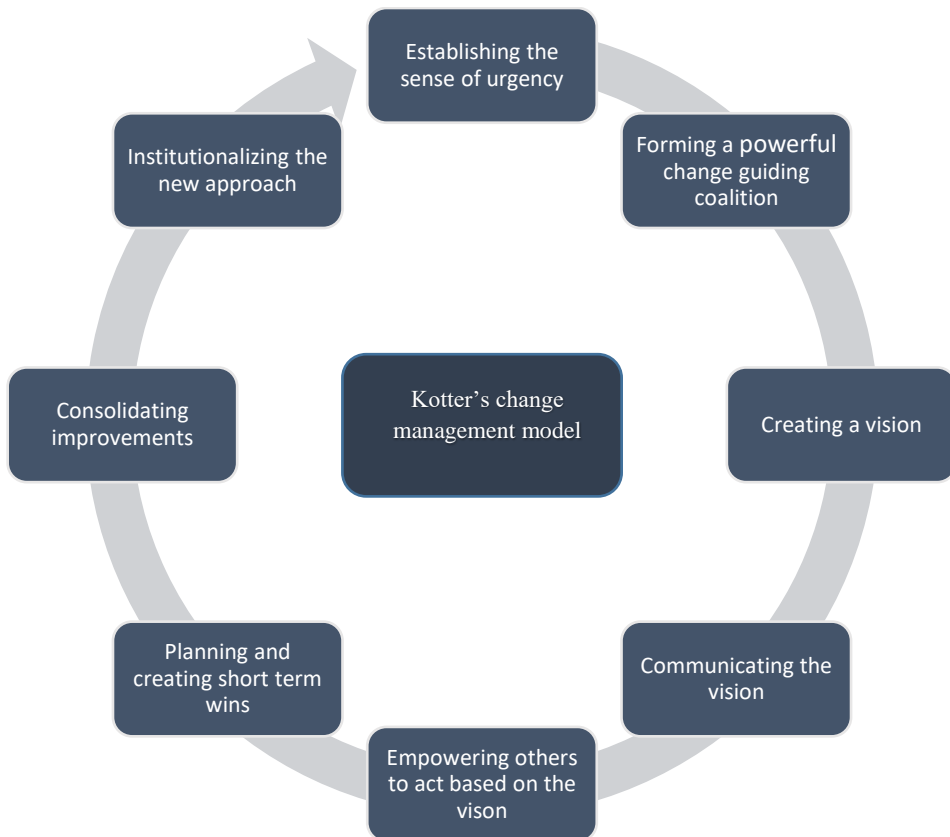
2. Managing digitalization in higher education

Digitalization in higher education is a process of change that makes the institutions get out of their comfort zone as a result of the processes that need to be changed or adapted to the new technological reality. In order to manage this the institutions need to choose and adapt a change management process. This is an inevitable process as long as they want to remain relevant and support their growth and viability.

One of the most cited method for an organizational change in the literature is the Kotter's model (1996). This model is used on a large scale in many industries and environments, including higher education. Keyser Wentworth *et al.* (2020) provided in their research an example of how the Kotter change management model can be suitable and appropriate in implementing change regarding a variety of topics and areas within higher education institutions. The authors' practical approach was regarding implementing an evaluation system that came to replace the older, limited one. Kotter's model (Appelbaum *et al.*, 2012) is built on eight steps or stages as presented below.

- I. Establishing the sense of urgency – in this phase the urgency is set by the element/factor/process that requires change. In this case, the academic process that needs to be changed to keep the pace with the technology evolution. This could be triggered from the internal or external environment and the responsibility of the institution's leader is to communicate the need to the stakeholders.
- II. Forming a powerful guiding coalition – the change will barely succeed if it is conducted by one individual, therefore a guiding team is required. In a higher education institution this team could be formed by head of departments, director of information technology, responsible for teaching and learning advancements, etc. This team should act as an initiator of the change process and work on setting the vision, the strategies to be applied and plans.
- III. Creating a vision and strategy – a vision is very important in clarifying the direction/path of the change in place. On the other hand, the strategy defines how the vision will be reached. Specifically, in this case these are higher education digital strategies and digitalization plans. Usually higher education professionals do care very much about the mission of their institution.



Figure 1. Kotter's model for change management

Source: Appelbaum *et al.* (2012)

Therefore, Kotter's enhancement on developing a vision for the change process can create an emotional attachment.

I. Communicating the vision – it is a very important step for delivering the vision to the team and it should be focused, flexible and desirable.

II. Empowering others to act based on the vision (also called eliminating obstacles) – in this phase the implementing process starts and the plan established is on moving wheels.

III. Planning and creating short term wins – this is an essential step in the process because it enhances the fact that the change is worth it.

IV. Consolidating improvements – this step is important for the institution to evaluate how far it has come with the implementation of the strategy and how much it has achieved. However, this is not the moment to celebrate entirely the victory, it is the moment for assessing the achievements and to focus on future wins.

V. Institutionalizing the new approach – this is a very important phase because at this moment the new way of doing things should be the new normality. When institutions start for example recording classes and make them available for later access this should not be only a solution for extraordinary events (as the pandemic) but a normal way of conducting the classes.

For managing the digitalization process each institution needs a well-established digital strategy. This represents the “bible” of the change process. In the private sector there is a saying “digitally disrupt or be digitally disrupted”, based on the latest worldwide pandemic situation this applies very well also to the higher education sector. Therefore, universities need to align to the modern digital trends. In order to take the maximum benefit from the technological evolution higher education institutions must use digital tools in their daily activities and for their own advantage. Using but most important implementing digital technologies in all the academic aspects takes a lot of time, effort and resources. Some of the challenges that might be encountered alongside this process are listed below:

- Cultural drive: Universities are mission-driven public organizations, which operate under the goal to deliver prepared workforce (contribution to the society) and of course to evolve in by gaining knowledge in the scientific area. Their basic goal is not product/service development that will create profit for the shareholders, therefore the decision-making process does not look the same as in a commercial organization. Usually in higher education situations the decision-making process is slow, drawn back by complex hierarchy with slightly different interests sometimes. Kezar and Eckel (2003) stated in their paper that changes of any kind are not successful unless they are aligned with the cultural aspect of an institution. The institutions that did not have these two elements aligned experienced difficulties in the process.
- Funding limitations: Higher education institutions have state offered budget and they operate under a certain budget uncertainty as they depend on these public funds. This dependency creates a certain lack of control and risk-averse culture. Therefore, investing in digital technologies, new infrastructure, modern teaching technologies, technology enhanced learning methods might be perceived as risky movements. Universities would rather invest in projects that are small in their scope but have a tactical approach. They are continuously seeking for best efficiency at available costs.
- Staff risk aversion: This is specific not only for higher education and it means the fear for new and the lack of desire to change the actual well-established habits. When talking for example about the course design, professors have already prepared, and well settled method and it certainly takes time and effort to adjust these to the new digital requirements. Also, leaving the comfort zone it takes courage and willpower which certainly needs to be promoted by the institution.
- The multi-stakeholder context: It is obviously time consuming and it required a lot of effort to understand the needs and desires of different stakeholders and to bring them all on a common ground with respect to the digitalization process.

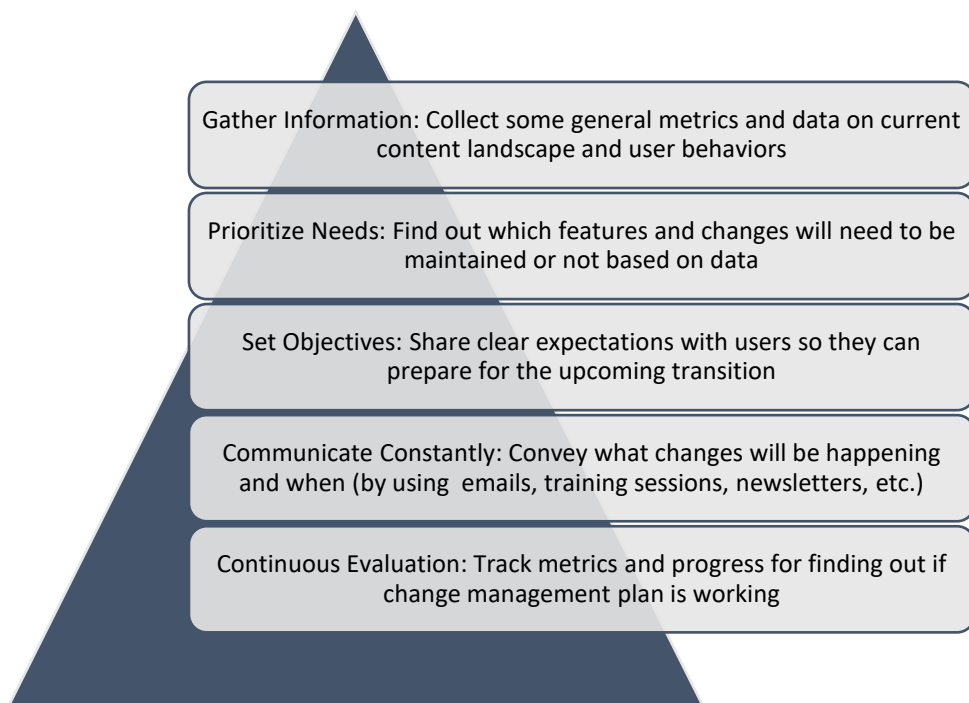


An important factor that helps to fulfil the managing aspect is the change strategy which is part of the management model of change. This is like roadmap for the institutions that takes it from the current state of business to a desired future state. The strategy is not only a template that shows how to proceed, but also a tool based on which the course of activities is built. Basically, the strategy states where the institution currently situated, where it is going and how it is going to get there. Higher education institutions are activating in a very dynamic and competitive environment and most probably the forces of change will accelerate some processes over time. These forces of change however are coming from two sources internal and external one.

There are various ways in which digital change strategy can be developed, including top-down and bottom-up processes for setting general goals, in a university it can be done also through an annual academic planning process in which departments / faculties must present their plans for the next three years, including the necessary resources, based on the fulfilment of the general academic objectives established by the university. In such a planning cycle, it is important to include objectives to meet the needs of learners in a digital age as a “target” for departments when developing their plans. These plans should indicate not only the content to be covered, but also the teaching methods to be used accompanied by a justification for them (Bates and Sangra, 2011).

Regardless of institution size, every university should create a change management strategy for deploying their plan and drive its adoption to ensure a smooth transition to their new technology. According to Brazeau (2020) the change management in higher education institutions has a five-step structure as in the figure below. DePaul (2016) highlighted some important elements to consider in the process of managing change within a university:

- Organizational culture of the institution - the culture of a university can encourages or inhibit change;
- Accepting discomfort - any change creates discomfort; it is a natural tendency to resist change;
- Making allies - it is very important in the process of change to have its supporters, people who will be enthusiastic about the process, those who will be considered promoters of change;
- Continuous communication - a strategic and tactical approach to communication is essential for managing expectations, asking for feedback and informing others;
- Time management – considering the available time sets the tone of the whole project;
- Anticipating obstacles - change management processes are usually derailed but in avoidable ways. Most change management programs do not consider the emotional component. Change causes fear, it is completely normal and completely natural, but framing it differently can turn fear into enthusiasm.

Figure 2. Five steps of an effective change management

Source: Change Management in Educational Institutions During COVID-19¹

3. Digital transformation in higher education

According to Reis *et al.* (2018) digital transformation has three important anchors:

- Technological aspect – the use of new technologies, like social media, tablets/mobile devices, online learning materials.
- Organizational aspect – which triggers the change of organizational processes or the creation of new ones.
- Social aspect – the human related influence, such as user experience, openness to change or resistance.

The use of digital technology in academic environment is related to different levels of digitalization. Meaning that technology could be used universally (Office tool for example), they also could be used to support the traditional methods for teaching, learning and for enabling new and innovative ways to do things.

Digitalization and globalization have triggered major challenges for teachings and learning processes. It is particularly difficult to predict how the current students

¹ available online on <https://www.skysync.com/>.



will advance on the future labour market. Therefore, in this whole process of transformation and change the academic environment is in high need of multi-disciplinary skills, collaborations with other parties and the supreme ability and analyse, gather insights and deliver solutions for process improvement. The trends regarding change in higher education do relate to several areas: the course content, the study medium or location, the degrees of qualification and interdisciplinary research.

Digital transformation was for sure on many universities' agenda, but the current pandemic situation triggered the acceleration of the process. The new teaching methods, assessment and evolution procedures will suffer changes. The academic programmes will be adjusted to include a certain digital content and increased use of *open educational resources*. The trainings / professional development for academic staff on digital skills should not be neglected this is particularly necessary in order to achieve and ensure higher quality of the courses. Therefore, the educational content will add to the actual content additional, distinctive features in order to compensate for the lost or very few campus experiences. One of the important tools in the course design is the assessment mechanisms which also will be adapted to the new environment. Given that face to face collaboration is missing the emphasis will fall on collaborative activities between students and will encourage the exchange of practices. The direct beneficiary of this will be the students who will have a large palette of options to choose from and an educational system enhanced with distinctive features. This will support the internationalization of students that currently was shut down because of travel restrictions, but which could be revived through digital solutions. New educational platforms and collaboration channels can support social connectivity and establish good collaboration between academic and also non-academic members.

As many other systems the Romanian education system was shattered as it is still difficult to quantify how much it is affected by the crisis caused by COVID 19. The crisis meant many challenges, as well as opportunities for personal development. What is certain is that Romanian education has been subjected to the same transformations, adaptations and challenges, as education on the entire planet, affected by the pandemic. The main challenge was the relocation, practically overnight, of the entire educational process (with its specific infrastructure and logistics), respectively the transition of the university activities into the online environment. Students and professors had to figure out the puzzle of the institutional communication and collaboration of the virtual version of teaching and learning.

The National Association of Student Organization from Romania (ANSOR, 2019) have prepared in 2019 a proposal report for the national authorities in which there are significant inputs regarding digitalization. Therefore, students' inputs and signals are available and higher education system is aware of their main "customers" desires. According to the report digitalization has a number of components that would facilitate an important part of processes of the current education system and would improve the lives of students. One of the most important issues under discussion is



the complicated bureaucracy (actions needed regarding facilitating the processes of enrolment in college, accommodation, payment of fees, etc). Moreover, digitalization can be seen as a mechanism for implementing student-cantered education, which also facilitates communication between students and professors.

Higher education institutions have to harmonize and strengthen their strategies and infrastructure for blended learning, as further on a great part of education processed will continue to be disseminating online, as according to the official data the face to face courses will most probably be back starting with March 2021. In this circumstance the blended or hybrid teaching and learning is a new normality offering a certain flexibility to the direct stakeholders. This new flexibility will create new learning pathways and give the students the possibility to have an influence on their own curricula, which can enhance lifelong learning. Students will also have the possibility to choose from a greater variety of course content. The creation or the insertion of more digital content in the teaching methods will allow to have reusable repositories of educational content, which could be used and revised by students whenever they need. Through accessibility to educational resources distance will no longer limit students to enrol or participate to classes from the entire world.

The academic stuff will have to focus on their digital skills and the process of transformation will not leave apart this aspect. They will need to gain more confidence for using new platforms and tools by using an asynchronous approach. The focus will be on students' experience, their emotions and the affective dimension of learning and teaching in order to bring some human experience in the entirely digitalized world. There are many opportunities to improve the quality of education. Institutions have encountered many possibilities to go digital in the past but not until now did they feel the urge to do so. Even after the pandemic crisis will be a matter of the past universities will need to have in their portfolios blended, formal, informal and virtual elements. After this crisis situation the demand for disciplines like epidemiology, biology, genetics might encounter an increase in demand, while others which are currently related to a higher unemployment might decrease. Therefore, labour market disbalances are inevitable, which is also a matter of thought for universities.

Conclusions

The digital transformation and all the management challenges associated with it are inevitable, but this could be faced through a good strategy implemented by the higher education institution. Openness to the new digital era is the key to the strategy development. Along with the evolution of the technology, the digitalization of the educational programs and infrastructure is a must. Therefore, universities should move forward and adapt to the new requirements triggered by students demands, digital evolution and industry development of course. Implementing digital change in higher education requires a long process of planning and involves different stakeholders. The Kotter's eight-step model is a very useful tool for driving the transformation in the higher education environment. It determines the institution to clarify its direction of change and set a well-established plan. However, each



organization can create its own successful organizational change starting from Kotter's model and derive similar models, more personalized, adjusted or tailored to their needs. Both administrators and business practitioners can learn the lesson from the emergent models in digital transformation, whereas higher education can question structural, contextual, and temporal inefficiencies that are specific to higher education's ability to manage change more or less effectively.

Managing and implementing change in universities is certainly a process complex and challenging. Higher education institutions can cope with all changes and can manage change, even if it can be extremely difficult because of the large number of people involved, procedures, rules and socio-economic changes. Universities will undoubtedly become more sophisticated due to the process of change digital, but at the same time simple principles will remain the basis. The learning environment will be focused on student and digital evolution with new technologies - indispensable support for teachers. Therefore, the first step in adopting a change model is to analyse the environment and emphasize the need, afterwards develop a plan by involving the main stakeholders and rising interest of participation by contouring their benefits.

A digital plan and strategy are not easy to implement in an academic environment, which is sometimes a rigid one, but these represent the pillars in a change management set-up. Starting from this premises the institutions can then trigger the transformation by going through the steps of the plan but not until it emphasizes how it will address obstacles and risks. Following the idea, challenges are of course many, starting from the cultural divide to the financial constraints, employees resistance, lack of good planning and public policies, these are important elements that can trigger the "derail" of the change process.

The basic and main responsibilities of a higher education institution is delivering knowledge and preparing the specialists for the labour market, and the way they chose to fulfil this is what differentiates them. With the growing offer for open source platforms and tools, the demands of the new generation of students and the digital evolution that will only move forward to even more high tech possibilities, higher education system cannot afford to stay behind. And the way they chose to manage this process is crucial, as a good management means moving a step closer to success. The adoption of digital innovation in higher education is a matter of recognizing the importance of generating value to the students, which are the main consumers of education.

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DIMENSIONS OF DIGITAL TRANSFORMATION FOR THE BANKING INDUSTRY. EVIDENCE FROM EU COUNTRIES

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Abstract

The purpose of this paper is to have a comparative analysis regarding digital transformation among the countries of European Union, in a regional context, in an attempt to explain the unequal evolution of the digital financial services. The development of digital skills, of the financial one in particular and the digital access to banking will be analysed using economic and social drivers of the trend. The analysis includes data from some Central and Eastern Europe countries: Bulgaria, Croatia, Czech Republic, Greece, Hungary, Poland, Romania, Slovakia, Slovenia for the period 2002-2019, in order to identify a best practice of digitalization, focused on the financial banking market. Policy makers, public institutions and non-profit organisation involved in financial digital transformation can benefit from this analysis and conclusions just as much as researchers can. The question that arises is whether there is a correlation between the access to digital services, the education level and the use of financial banking services.

Keywords: financial education, digital transformation, digital financial services

Introduction

The decrease of the monetary mass in circulation, the emergence of crypto currencies, and the digitization process are the causes of the acceleration of the money circulation in the economy. The result is that the banks, including central banks, have to adapt and reconfigure their processes.

Nowadays, digital technology has advanced so much that its presence in everyone's life is normal. Digitising and transforming European industry and services is one of the focus areas of the biggest EU Research and Innovation programme, Horizon 2020. We have overcome the moment when we wondered if AI is a threat to humanity and it has become clear to entrepreneurs that the technological future does not expect you to be ready for it. The faster a company in a field of activity adapts to the digital age and implements technological innovation, the faster it gets to differentiate itself from competitors. To stay in the market, one

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needs to adopt digital technology. The speed with which entrepreneurs understand this, makes the difference between leaders and followers (Weill *et al.*, 2017).

Understanding financial products and services requires a certain level of financial literacy. Between the date of purchase of a financial service or product and the satisfaction of use, a long period can be recorded. Sometimes, dissatisfaction may occur if the evolution of an investment product is negative and the associated risk has not been understood and assumed from the beginning.

The complexity and period of the use of financial products and services expose the consumer to a large range of emotions. At the same time, consumer's behaviour changes and evolves over time, it adapts quickly to environmental changes, technological and social progress.

The banking industry is characterized by a fast adaptability rate of competitors. Innovation in banking is a competitive advantage that can be quickly replicated by competitors. The differences in the choice of consumers are given by the smallest details and each mistake costs.

In the context of globalization and the single market concept, the Romanian banks are adapting their strategy continuously, in order to keep up with the changes that appear in the global financial system. This paper presents a comparative analysis among the following countries in Central and Eastern Europe: Bulgaria, Croatia, Czech Republic, Greece, Hungary, Poland, Romania, Slovakia, and Slovenia. The group will be referred to as East EU countries-EEU. The analysis presents the way in which these countries have evolved compared to the average evolution of the European Union, observes what progress has been made, where progress has been faster and where it has been slower than the average progress of European Union countries, in order to highlight which country had the most effective strategy, as a best practice.

1. Financial inclusion in EEU countries

In the context of the crisis caused by the COVID 19 epidemic, the whole world began to reconsider access to technology¹. Digitization has provided the premises for access to services in conditions of social distancing. At the same time threats to cyber security have increased. On the other hand, during this period, we began to have a broader understanding of what human closeness for each person means. Excessive digitalization of the relationship with customers also calls into question the risks of disclaiming the customer when accessing financial services, raises challenges customers retention and non-performance of loans (Ari *et al.*, 2020; OECD, 2020).

One of the most relevant indicators in terms of digital performance in the European Union is DESI (Digital Economy and Society Index). This is an indicator composed of five sections, each with a certain weight in total: connectivity, human

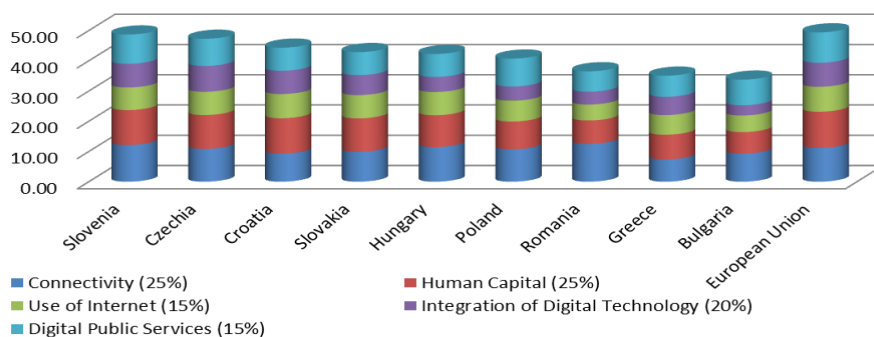
¹ OECD (2020), "Connecting businesses and consumers during COVID-19: trade in parcels", OECD Policy Responses to Coronavirus (COVID-19), (retrieved from <http://www.oecd.org/coronavirus/policy-responses/connecting-businesses-and-consumers-during-covid-19-trade-in-parcels-d18de131/>)



capital, use of internet, integration of digital technology and digital public services. Each section has several sub-components.

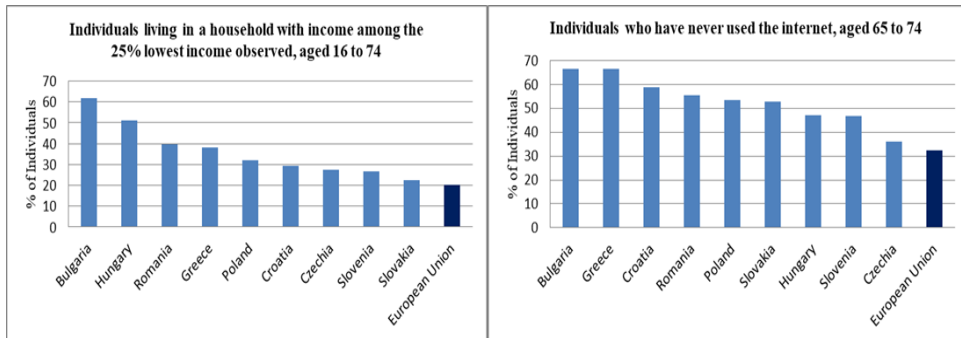
For the countries included in the analysis, the DESI index is below the average of the European Union countries (see Figure 1). A more in-depth analysis is required to identify the sources of the gap so that efforts to recover it are as effective as possible.

Figure 1. Digital Economy and Society Index (DESI) 2019



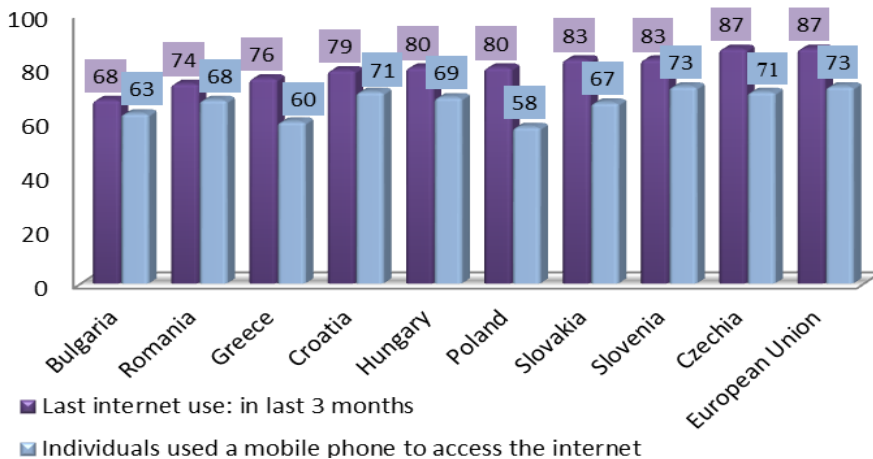
Source: author's representation based on European Commission data

Analysing the DESI sub-components, one can notice that in terms of connectivity there are 3 countries with connectivity above the EU average of 11.19. Romania has the highest score (12.5), followed by Slovenia (12.4) and Hungary (11.48). In the Integration of Digital Technology subcomponent we find the Czech Republic with a high score of 8.54 compared to the EU average of 7.95. However, a significant share of the population faces difficulties in terms of digital skills. This may be the result of large gaps between different social categories. The young, urbanized population with a higher level of education has digital skills well above average but there is also a significant share of poor population in rural areas and older population without low or any digital skills (see Figure 2). The development of digital skills is considered essential to ensure the necessary conditions to promote a modern and competitive economy. Particular attention to the process of digital transformation is needed from state authorities in order to protect these social categories from exclusion as far as the increasing digitalization of services is concerned. At the same time, the involved factors need to develop strategic campaigns that provide assistance to the population in the use of digital services and help people understand the benefits of digital transformation. According to Eurostat data, individuals who have never used the Internet, for personal or work interest are 9% in the Czech Republic and 24% in Bulgaria. Thus in the DESI score we find the score for Internet use, broken down by the two subcomponents: individuals who have never used the internet and internet users.

Figure 2. Individuals who have never used the internet, vulnerable categories

Source: author's representation based on Eurostat data, 2019

We analysed the information regarding the internet access and the purpose for which it is used, as well as the subcomponents of the DESI indicator regarding the internet access. Compared with the EU average one can observe that in the EEU countries there are differences in terms of the frequency with which the internet is used (see Figure 3).

Figure 3. Internet access, EEU countries vs. UE average

Source: author's representation based on Eurostat data, 2019

According to Eurostat data, internet access is widely used in EU countries, 87% of households have accessed the internet in the last 3 months. The Czech Republic is at the level of this average, the other EEU countries have a gap to recover, the biggest gap is observed in Bulgaria, of 19%. Figure 2 shows that the handiest device to access the Internet is the mobile phone. Similarly, it can be seen that in the EU 73% of households are using mobile phone to access internet and the only



country in the EEU that is found at this level is Slovenia. The biggest gap from the EU average is of 15 percentage points in Poland. As stated before, lack of digital skills in individuals can become a factor of social exclusion.

Analysing in detail the reasons why the internet is accessed by the population of the EEU, compared to the average results of the EU, a distinct behaviour in the EEU states can be identified.

The ways that internet is used shows how to increase the interest of the population for digitization. It also allows the identification of the causes of gaps: lack of access to infrastructure in some countries, delayed development of digital adoption in the business area, lack of public digital platforms, widely publicized fraud and security breaches, lack of information or lack of digital education.

Authorities can boost or curb digital adoption through their degree of involvement, both through direct investments in the digitization of their own services but also through the creation of a legislative framework to support private initiatives. In the context of COVID 19, the importance of digital public health, online education and digital public administration services has become more evident. Internet use has increased due to circulation restrictions during the pandemic. Online communication has grown rapidly both on social networks and in the entertainment area. This happened due to companies adopting teleworking wherever possible, to constraints in order to have education predominantly online and to increasing volumes of online shopping. One can observe (see Figure 4) how in 2019 internet connectivity was used in EEU states mainly to socialize and send instant messages or e-mails but less with a practical utility: taking online courses, interacting with the authorities or accessing services of internet banking.

If we take a look at the percentage of people who use the internet to interact with online authorities, we also need to look at the presence of digital public services compared to existing services in other EU countries. In the case of the EEU countries, the digitization of public services, although it has been accelerated in recent years, does not yet rise to the average level of digitization of the European Union, so the population has fewer alternatives to use the Internet for this purpose.

When evaluating the usage of digital internet banking services we first need to analyse whether banks operating in the market offer digital services that consumers consider intuitive and secure so that the premises of consumer confidence in using these services should exist.

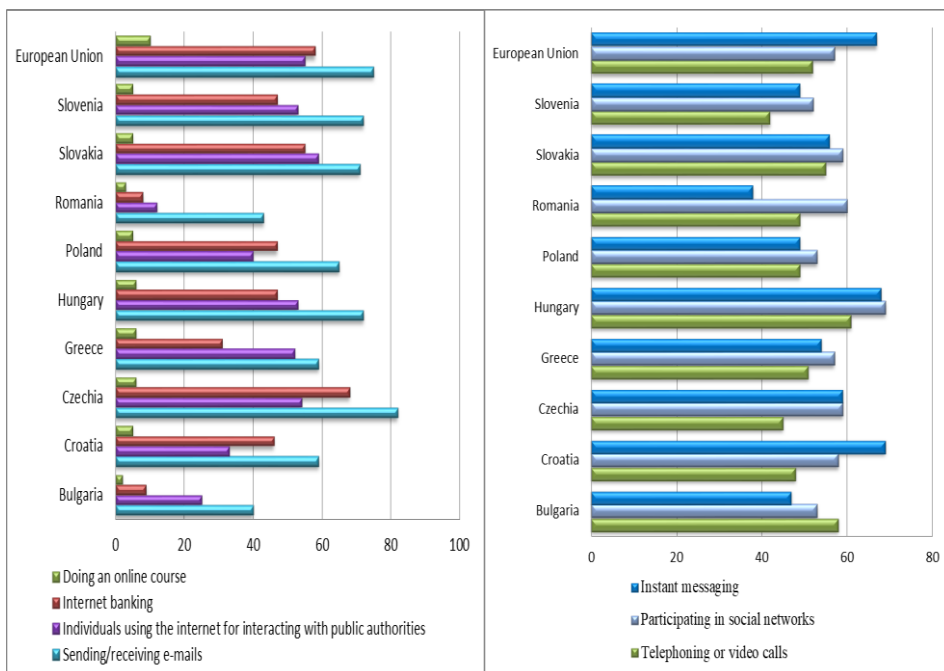
The level of population confidence in banks has decreased because of banking public scandals about security breaches, non-compliance with anti-money laundering regulations and Global Financial Crisis. The level of banking consumer confidence is also eroded by the practice of forcing the sale of products without taking into account the customer's need for that product or by offering products that are more complex and not well understood by customers.

There are three ways of regaining the lost trust of the banking customers: enhancing digital banking by investing in IT software solution, transparency of operations and enforcing customized banking services (apud Ahmed *et al.*, 2020).



According to the study presented in the article Banking System Trust, Bank Trust, and Bank Loyalty (van Esterik-Plasmeijer *et al.*, 2017), six determinants matter when it comes to bank trust and loyalty: integrity, competence, customer orientation, transparency, value congruence and stability. Clients with above average financial knowledge, are healthier financially, are more satisfied with their relationship with the bank, and are more likely to trust certain banks.

Figure 4. Reasons of internet use, EEU countries



Source: author's representation based on Eurostat data, 2019

Financial education contributes to the trust in the banking system. Financial education and financial literacy have become in recent years part of the economic and social development strategies. OECD provides high-level principles on National Strategies for Financial Education. This is one part of the challenges set by OECD in order to increase the overall stability of financial system. The purpose is to share best practice and co-operate for increasing financial inclusion, financial education considering a proper policy for financial consumer protection.

The biggest worldwide financial knowledge study dates back to 2014, Standard & Poor's Ratings Services and Global FinLit Survey. It measured Financial Literacy in 143 countries and developed a Financial Literacy Score (FLS) to compare the level of financial literacy and evolution between countries and special groups with the purpose to prevent financial exclusion and develop programs for increasing financial education and wellbeing within respective population in way that is more effective. A



person was considered financial literate if he/she answered correctly to three out of the four survey questions. In European Union, the average of people considered financially literate was 52. Observing the EEU countries we see that Czech Republic (58) and Hungary (54) were above this average, Slovakia (48), Greece (45), Croatia, Slovenia (44), Poland (42), Bulgaria (35) and Romania (22) were under this average. Romania had the lowest score in the European Union Countries. The percentage of adults considered financially literate worldwide was 33.

Regarding financial inclusion, the most comprehensive study is The Global Findex Database 2017, (Demirgüç-Kunt *et al.*, 2017). From this database we calculate the average percentage of adults in European Union who have an account with a financial institution or through a mobile money service (93%), saved money at a financial institution (47%) and borrowed money (17%). Comparing these averages for all EU countries with the data for the selected EEU countries, there are big gaps (see Figure 5). We see how Greece adult's financial behaviour was affected by government-debt crisis. Even though the percentage of adults who own an account is 91%, almost on the average of European Union, people are still reluctant to save and borrow money. A specific situation can be observed also in Romania where the percentage of adults who own an account is 59% and is decreasing compared to 2014 database (61%). Only 14% of the adults have savings at a financial institution, comparing with the average of 47%. In contrast to the low interest in saving at financial institutions we can observe that Romanians are more interested in borrowing from a financial institution, being at the average of European Union (17%). Romania is the only country, in EEU, where people are borrowing more than saving at a financial institution. Worldwide 69% of adults have an account with a financial institution or through a mobile money service, according to World Bank Global Findex Report, 2017.

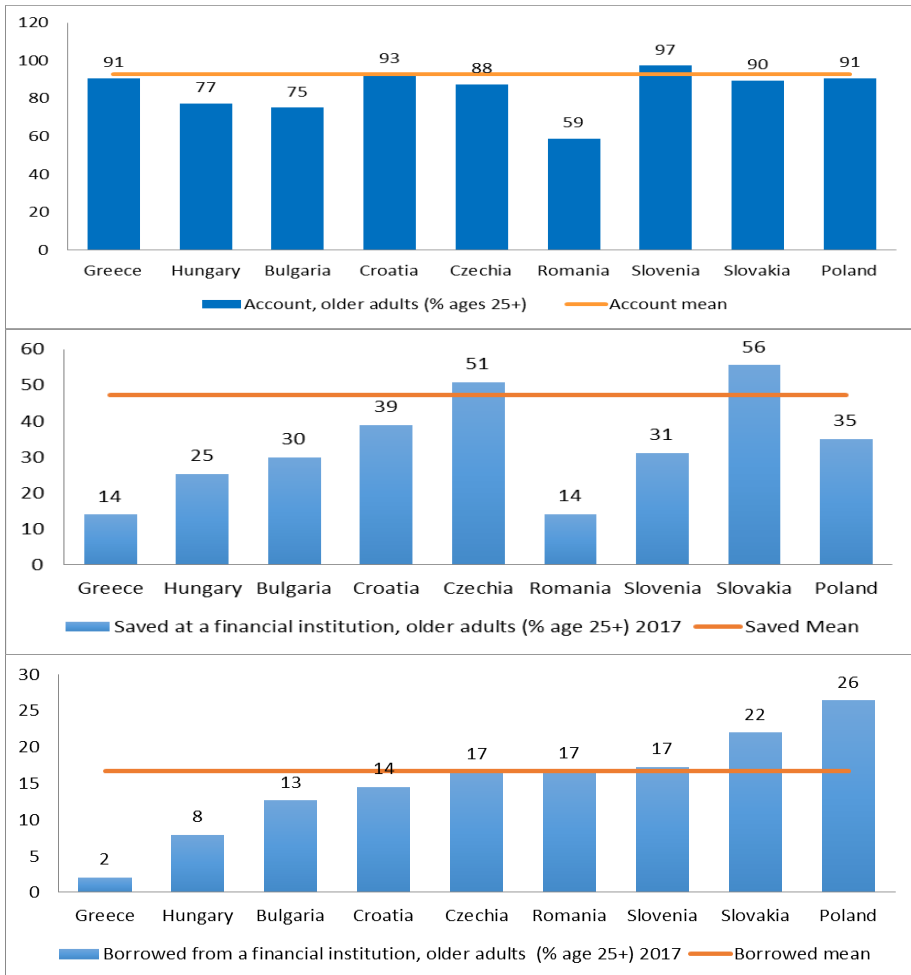
A study of financial literacy was released by OECD in 2020 for South East European Countries. Data from Bulgaria, Croatia and Romania were collected among other countries that aren't in EEU studied group. This study revealed that the score of East European Countries is lower than the score obtained for EU and OECD countries in which the same methodology was used. People are unsatisfied with their financial situation, they are confronted with financial stress more likely because of low incomes compared to the cost of living than the one caused by excessive debt.

This study reveals that people prefer to save their money in cash at home or in the wallet (Croatia 50%, Romania 53% Bulgaria 62%) than saving in to a deposit account (Croatia 38%, Romania 20%, Bulgaria 29%).

A financial shortfall experience was reported in the past 12 months by 51% of Bulgarians, 46% of Romanians and 33% of Croatian people. The reaction to this shortfall experience was to spend less instead of borrowing (Bulgaria 50%, Romania 45%, and Croatia 44%) or to ask help from family and friends (Bulgaria 27%, Romania 34%, Croatia 10%). The most trusted source of financial education was the National or Central Banks in Romania (36%), Bulgaria (33%) and Croatia (32%).



Figure 5. Financial inclusion, EEU countries, EU mean, percentage of adults over 25 years old who borrowed, saved or have an account.



Source: The Global Findex Database 2017, World Bank.

The Members States of the United Nations, in 2015, adopted an agenda for 2030 sustainable development with 17 goals. Expanding access to financial services is part of the 2030 sustainable development goal referring to decent work and economic growth. IMF data of Financial Access Survey² helps monitor the number of ATM's and commercial banking (see Table 1).

² Chhabra, E. and Das, B. (2019) Financial Access 2019 Trends and developments, Survey Financial Institutions Division of the IMF's Statistics Department.



Table 1. Financial Access Survey, International Monetary Fund, 2019

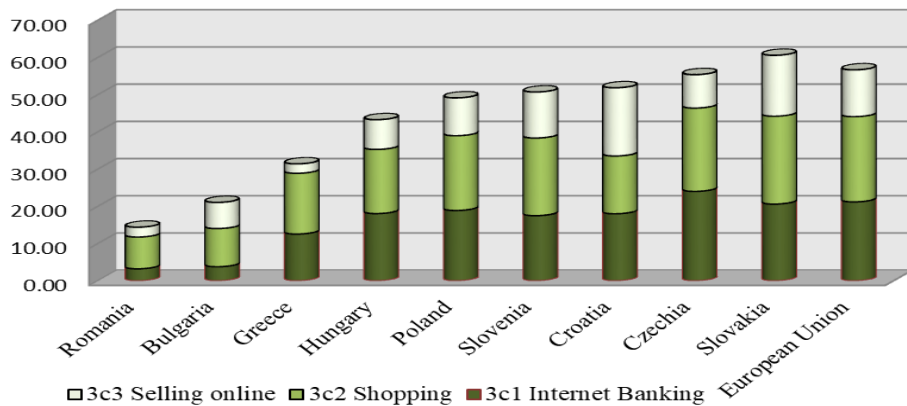
| Country 2019 | Number of ATMs per 100,000 adults | Number of commercial bank branches per 100,000 adults | Outstanding deposits with commercial banks (% of GDP) | Outstanding loans from commercial banks (% of GDP) |
|-----------------|--|--|---|--|
| Bulgaria | 94.33 | 57.89 | 69.24 | 50.22 |
| Croatia | 156.71 | 28.34 | 69.65 | 52.96 |
| Czechia | 58 | 20.57 | 68.51 | 50.94 |
| Greece | 63.4 | 19.25 | 79.15 | 80.53 |
| Hungary | 60.95 | 23.42 | 40.24 | 31.68 |
| Poland | 70.55 | 28.95 | 48.25 | 46.97 |
| Romania | 64.44 | 23.68 | 31.6 | 24.22 |
| Slovakia | 61.84 | 24.81 | 51.3 | 58.19 |
| Slovenia | 87.16 | 27.76 | 54.69 | 42.22 |
| Average | 79.71 | 28.30 | 56.96 | 48.66 |

Source: author's representation based on data from <https://data.imf.org>

Observing data collected from this survey for EEU countries, we see that Czechia has the lowest number of Automated Teller Machines and second lowest number of commercial bank branches. This happens in context that Czechia has a financial literacy score that shows a population with a financial education above the EU average, the highest financial literacy score in the EEU countries. Also it can be observed that Czechia has a high percentage of people using internet (87%, Figure 1) and internet banking is used above de EU average (left Figure 4). The identified reasons for these good results are given by the fact that Czechia has developed a well monitored National Strategy for Financial Education. There schools have financial education in their curricula as a mandatory subject for a while now. In Romania the number of ATM's and commercial banks are above EEU average; this comes with low results on financial knowledge indicators and on financial inclusion. These may be prerequisites for financial exclusion of some communities. It can be noticed that a lack of coordination of a National Strategy for Financial Education does not create premises and hope for the future. Only 8% of individuals are using internet banking (see Figure 4). A particular situation can be observed in Croatia, with the largest ATM's infrastructure, but 18% of the people have never used internet. The FLS score is 44, below the EU average (52). Bulgaria has the biggest number of commercial bank branches per 100.000 adults (57) and the second biggest number of ATM's. In Bulgaria, only 35 percent of adults are financially literate (FLS is one of the lowest in EU), 24% of Bulgarians have never used internet (figure 2) and 9% used internet banking, 75% had an account, 30% saved and 13% borrowed through a financial institution. We can conclude that a highly financial educated population has no need

for big banking infrastructure and a big number of ATM's and branches infrastructure does not necessarily relate to high financial inclusion. Financial education seems to help reduce costs not only for banks but also facilitate people's access to financial services at lower costs and with higher frequency. Analysing DESI sub-component online transaction for EEU countries (see Figure 6) high differences among EEU countries can be observed. Romania, Bulgaria and Greece are far behind others on using internet banking, online shopping and selling.

Figure 6. DESI 2019 3c Transaction online



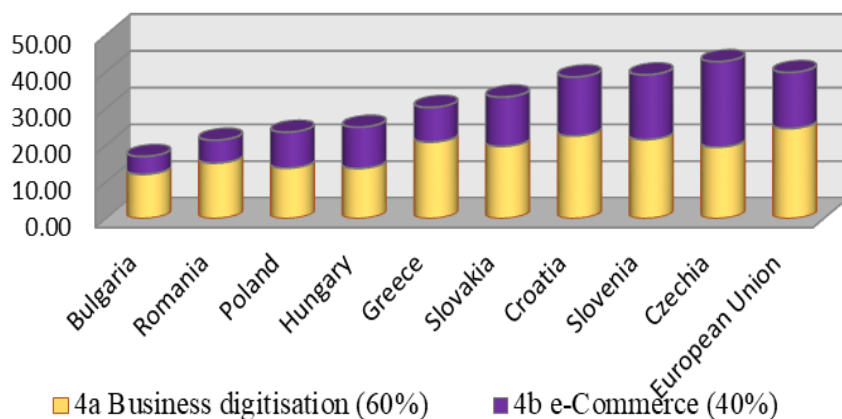
Source: author's representation based on DESI data, 2019

In order to see if people have enough possibilities to use internet for online transaction the data for business digitalization and e-commerce from DESI component referring to integration of digital technology was extracted (see Figure 7). One can notice that Czechia has the integration on digital technology DESI score above the EU average, the highest from EEU group countries. The infrastructure that offers online transactions opportunities is not so well developed in EEU countries. The reasons for not having online transactions in these countries can be a matter of slow digital technology development and integration.

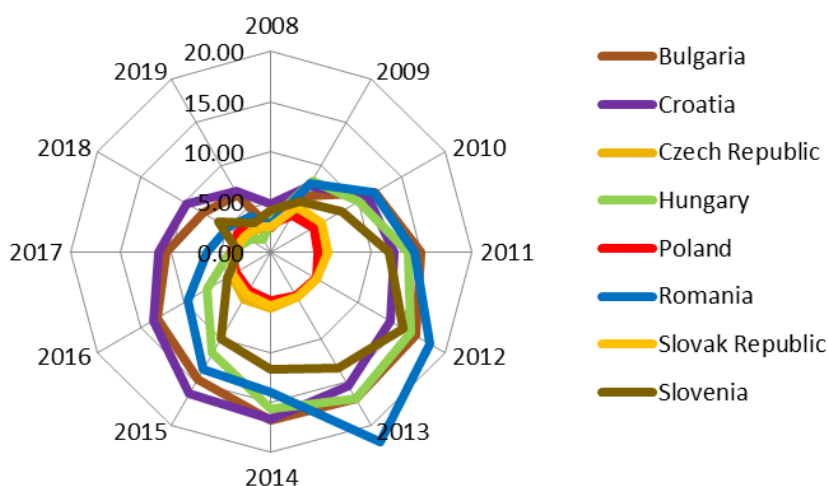
The statement is valid in both senses: without a market interest in online shopping there is no interest in investing in the creation of e-commerce platforms and without these platforms the possibilities for online shopping are limited. That circle can be pushed beyond resilience by external factors as it happened with the current pandemic situation. Outside of crisis situations, this push on e-commerce can happen within a convenient environment created by public authorities through fiscal facilities.

Nowadays, online credit is growing more and more in the market. Traditional bank loans are still the most used, especially by the companies but now crowdfunding platforms are offering alternative channels for financing. In EEU countries people still prefer to borrow from family or friends as much as from financial institution (Word Bank, 2018).



Figure 7. Integration of Digital Technology

Source: author's representation based on DESI data, 2019

Figure 8. Non-Performing Loans evolution, 2008-2019, EEU countries

Source: author's representation based on World Bank data

In order to see if there is a specific cause of the reluctance of the population from the EEU countries to resort to loans, the history of default credit was also analysed. Some of these countries have faced the problem of foreign currency credit with the appearance of large variations in foreign exchange rates.

Analysing NPL history, in other EEU countries than Greece, it can be observed that Romania has also confronted increased NPL (figure 8), a maximum of 21.87% was reached in 2013. Behaviours can be explained through this experience.

In Greece, a cause of withholdings from financial inclusion can be the debt crisis that affected most of the population, and which eroded confidence in the banking financial system. The proportion between banks nonperforming loans and total gross loans (NPL %) grew up to a maximum of 45.57% in 2017.

2. The EEU state progress, 2015-2020

An analyse of the actual situation of digital economy needs to be completed with the progress registered in each country. A graphical comparative analysis, on each component of Digital Economy and Society Index, was made for 2015-2020.

The progress of each country from 2015 till 2020 and the actual status for each DESI component (see Figure 9) can be observed.

The comparative analysis with the EU mean shows four quadrants:

1. Countries with less progress and lower index than the EU average
2. Countries with higher progress and lower index than the EU average
3. Countries with higher progress and higher index than the EU average
4. Countries with less progress and higher index than the EU average.

Bulgaria made some progress in Human Capital and Digital Public Service and is above the EU average but it still has one of lowest score in Connectivity, Use of internet and Digital Integration and because of this, it has the lowest progress in the EEU countries.

Croatia made a higher progress than EU made in Human Capital, Use of internet and Digital Public Services but less progress in Connectivity (the growth is similar to EU but gap needs to be recovered) and Digital Integration (similar level in 2020 with EU but the growth is slower).

The Czech Republic progress is slower in Connectivity, Human Capital and Use of internet than in EU. It has Better results than the EU average in Digital Integration and a higher progress in Digital Public Services.

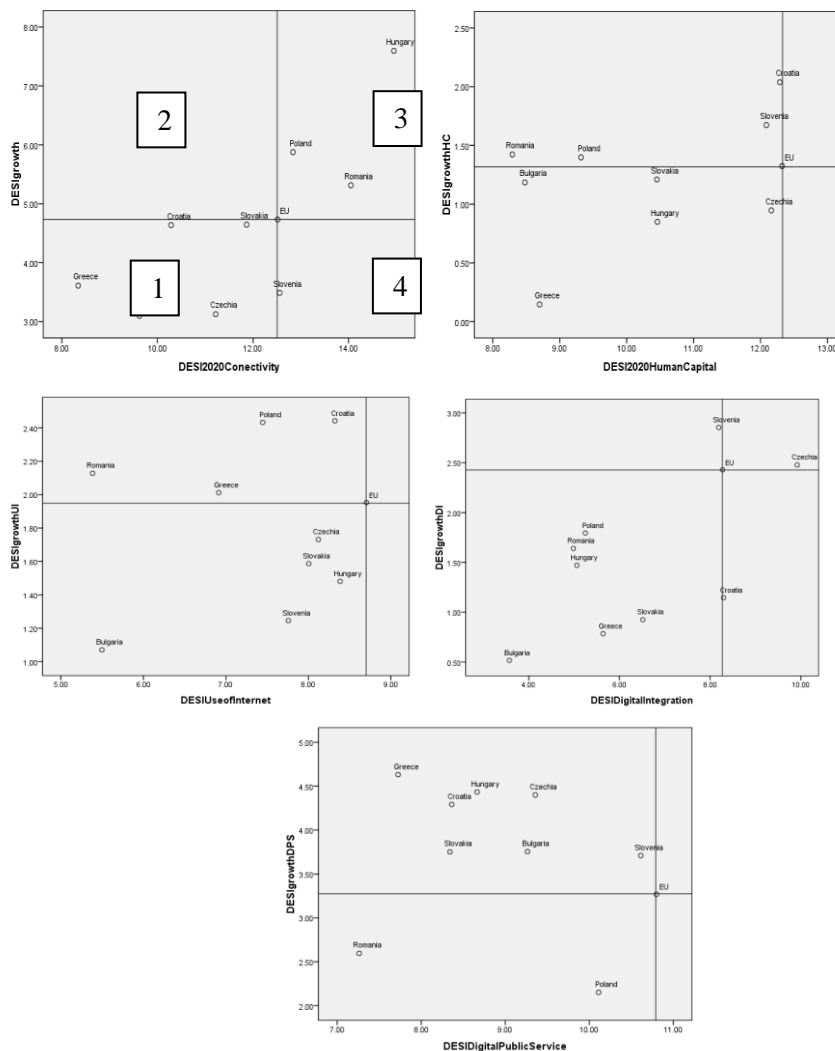
Greece registered less progress than EU mean on Connectivity, Human Capital and Digital Integration and higher progress in Use of Internet and Digital Public Services. In 2020 all components of DESI are above the EU average.

Hungary has the highest progress and the highest index (2020) in Connectivity in EEU, higher progress in Digital Public Services and less progress and lower index for the others component of DESI.

Poland has higher progress and a higher index than the EU average in Connectivity, higher progress also in Digital Public Services and less progress and lower index for the other components.

Romania has a higher progress and a higher index than the EU average in Connectivity, higher progress in Human Capital and Use of internet but slower progress than EU average in Digital Integration. In Digital Public Services Romania has a slow progress but also the lowest score index among the EEU countries.

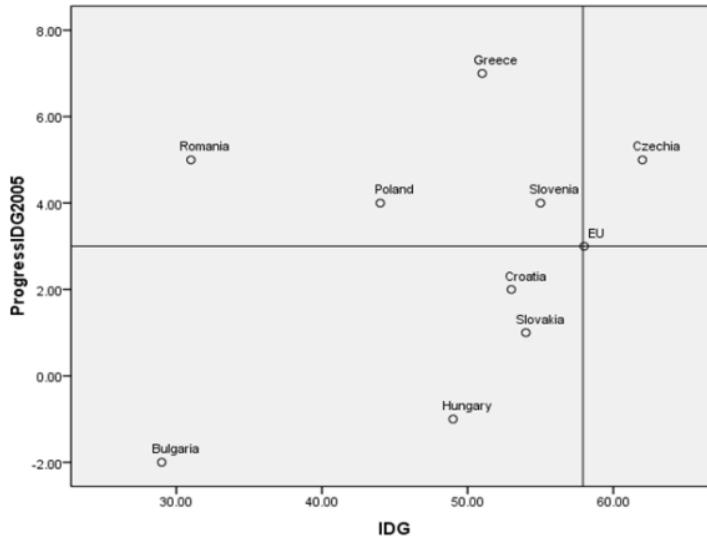


Figure 9. DESI, EEU countries growth 2015-2020

Source: author's representation based on European Commission, DESI connectivity/DESI Human Capital/DESI Use of Internet/DESI Digital Integration/ DESI Digital Public Services 2020.³

³ European Commission, Digital Economy and Society Index (DESI) 2020, (retrieved from OECD (2020), "Connecting businesses and consumers during COVID-19: trade in parcels", OECD Policy Responses to Coronavirus (COVID-19), (retrieved from <http://www.oecd.org/coronavirus/policy-responses/connecting-businesses-and-consumers-during-covid-19-trade-in-parcels-d18de131/>).

Figure 10. Percentage of individuals who have basic or above basic overall digital skills in EEU Countries (2019) and progress from 2015



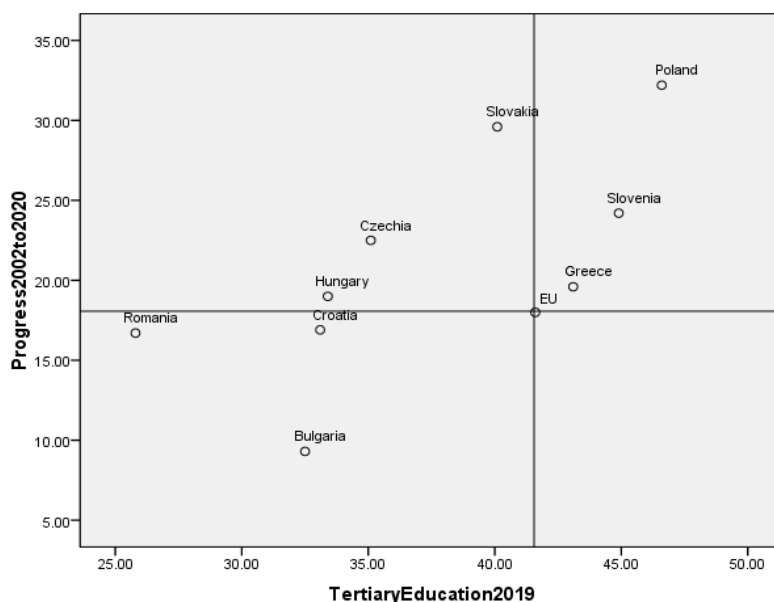
Source: author's representation based on Eurostat data

Slovakia almost kept the same progress as the EU average in Connectivity and Human Capital, better progress in Digital Public Services and less progress in Use of internet and Digital Integration with a lower level of all DESI components than the EU average.

Slovenia has above EU mean the progress in Human Capital, Digital Integration and Digital Public Services and less progress in Use of internet. It slowed down the progress in Connectivity in 2020 as compared to 2019.

Observing the 2019 Eurostat data on individuals aged 16-74 who have basic or above basic overall digital skills (for certain selected activities on the internet) the ranking for EEU countries (figure 10) is: Czechia, Slovenia, Slovakia, Croatia, Greece, Hungary, Romania and Bulgaria. There are some similarities between the countries on the top and on the bottom. Greece has the biggest progress (7%) among EEU Countries in increasing the number of individuals who have basic or above basic overall digital skills, during 2015-2019. Four countries registered bigger progress than the EU average, two countries have made less progress and Hungary and Bulgaria are in regress. Czech Republic with 62% of individuals with basic or above basic overall digital skills is above the EU average with 4 percent and has a five-point progress since 2015.



Figure 11. Tertiary educational attainment (2019) and progress since 2002

Source: author's representation based on data from Eurostat, 2019

Analysing similarities in the situation of education in general, from the perspective of tertiary education (figure 11) we see that Romania, Bulgaria and Croatia have low tertiary educational attainment in EEU Countries with the lowest progress made since 2002, so it is difficult to recover the gap.

3. Principal Components Analysis of the EEU countries

Using all the above-described indicators, we applied the Principal Components Analysis (PCA) in SPSS to describe the status of the selected East European Countries.

The PCA method emphasizes a number of components taking into consideration the number of Eigenvalues identified as greater than 1. In order to have a better view of the variable correlation, we applied PCA as an extraction method to reduce the numbers and the linear combinations of the original set of items. We see (Table 3) that four components were extracted. Those four new component variables explain 90,7% of the total variance.

The linear combinations of significant variables define the four components, which are named by us. The statistical units are representative for either the positive or the negative direction of the component. First component explains 45% of the total variance, the second 23%, the third 13% and the fourth only 8% from the total variance. A model with four components is quite difficult to interpret.

Table 2. Definition of the indicators

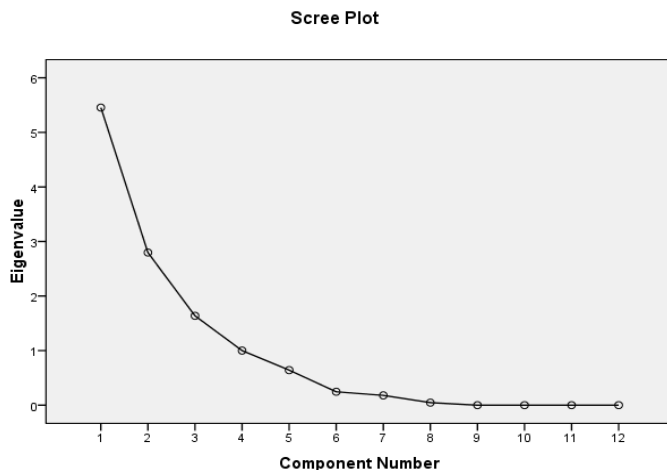
| |
|---|
| ATM=Number of ATMs per 100,000 adults, FAS, IMF |
| BSD=Business digitisation, European Commission, DESI |
| DEP=Outstanding deposits with commercial banks (% of GDP), FAS, IMF |
| ECM= e-Commerce, European Commission, DESI |
| FLS=Financial Literacy Score, S & P Ratings Services Global FinLit Survey |
| IBU=Internet banking use, Eurostat |
| IDG= Individuals who have basic or above basic overall digital skills, Eurostat |
| LON= Outstanding loans from commercial banks (% of GDP), FAS, IMF |
| NBK=Number of commercial bank branches per 100,000 adults, FAS, IMF |
| SEL= Selling online, European Commission, DESI |
| SHP= Shopping online, European Commission, DESI |
| TEA=Tertiary educational attainment, Eurostat |

Table 3. Total Variance Explained

| Total Variance Explained | | | | | | |
|--------------------------|---------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| Component | Initial Eigenvalues | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.455 | 45.459 | 45.459 | 4.720 | 39.336 | 39.336 |
| 2 | 2.797 | 23.308 | 68.767 | 2.747 | 22.895 | 62.232 |
| 3 | 1.637 | 13.645 | 82.412 | 1.732 | 14.429 | 76.661 |
| 4 | 1.000 | 8.335 | 90.747 | 1.690 | 14.086 | 90.747 |
| 5 | .642 | 5.349 | 96.096 | | | |
| 6 | .245 | 2.040 | 98.136 | | | |
| 7 | .178 | 1.484 | 99.620 | | | |
| 8 | .046 | .380 | 100.000 | | | |
| 9 | .000 | .000 | 100.000 | | | |
| 10 | .000 | .000 | 100.000 | | | |
| 11 | .000 | .000 | 100.000 | | | |
| 12 | .000 | .000 | 100.000 | | | |

Source: extraction method Principal Component Analyses



Figure 12. Eigenvalue of the component number

Source: Scree Plot of Factor analysis.

To choose components that have eigenvalues bigger than one we have the Scree Plot in figure 12. After extracting the 4 components we have a Rotated Component matrix in Table 4.

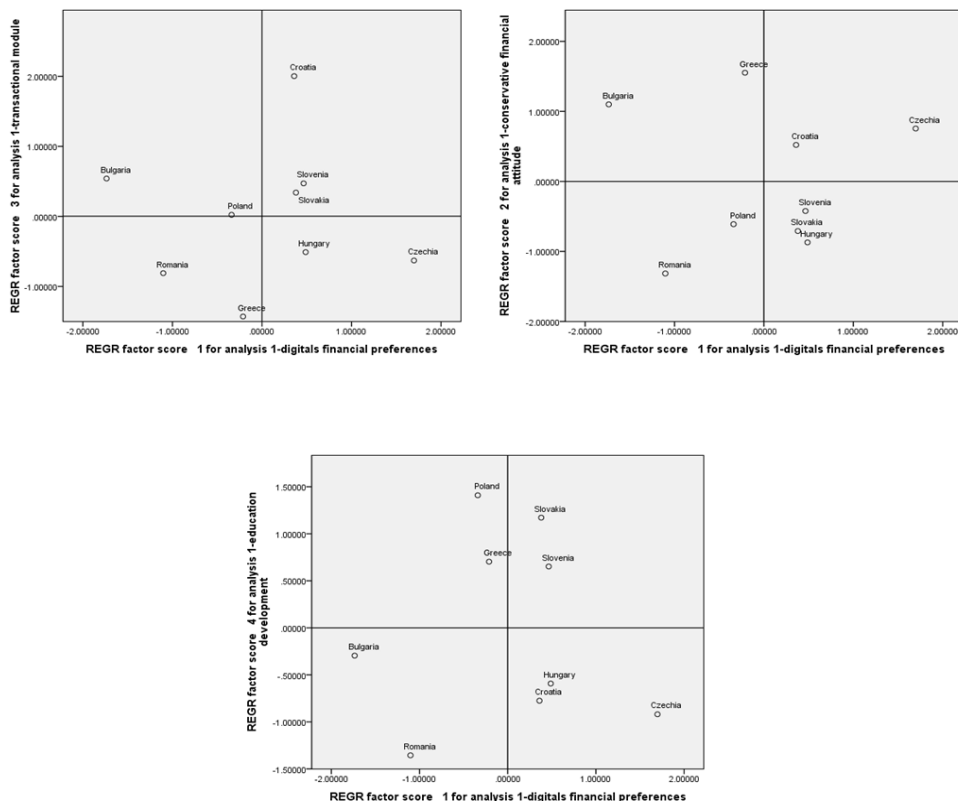
Table 4. Rotated Component Matrix

| Rotated Component Matrix ^a | | | | |
|---------------------------------------|-----------|-------|-------|-------|
| | Component | | | |
| | 1 | 2 | 3 | 4 |
| TEA | .256 | .136 | -.034 | .909 |
| IDG | .949 | .154 | .058 | .219 |
| IBU | .933 | -.035 | .133 | .271 |
| SHP | .797 | -.059 | .044 | .568 |
| SEL | .426 | -.125 | .841 | .240 |
| FLS | .844 | .262 | -.007 | .169 |
| BSD | .025 | -.965 | -.104 | .142 |
| ECM | .931 | .109 | .192 | -.059 |
| DEP | .141 | .967 | .151 | .123 |
| LON | .123 | .771 | -.069 | .501 |
| ATM | -.094 | .262 | .867 | -.209 |
| NBK | -.665 | .273 | .417 | -.026 |

Source: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

We observed that first component comprises variables: individuals who have basic or above basic overall digital skills, internet banking, shopping online, e-commerce and financial literacy score with positive correlation coefficient and number of commercial bank branches with negative correlation coefficient. This could be the first component of *the digital financial preferences*, referring to the abilities of people and their leaning skills for using digital alternatives. The second component has a very strong negative correlation with business digitization, a very strong positive correlation with outstanding deposits (DEP) of commercial banks and a strong correlation with outstanding loans (LON) from the commercial banks. This component can present aspects related to *a conservative financial attitude*. The third component has strong correlation with variables: selling online and number of ATMs. This component seems to represent *the transactional module*. The fourth component is represented only by tertiary educational attainment. This component is that of *education development*.

Figure 13. Chart of individual position of EEU countries, digital preferences versus financial attitude, transactional module and education development.



Souce: own representation



In this stage of the research, interpreting the position of EEU countries in the chart we notice a widely spread (see Figure 13). Only Slovenia and Slovakia are very similar in the results of each component. Hungary has digital financial preferences above the average but it is above the average for the other three components. Romania is placed below the average level, with one standard deviation lower to the average of the EEU countries for all four components, with almost -1.5 deviation in education development.

Each country has a different evolution with little or no similarities. The countries with better results than the others are the Czech Republic, Croatia, Slovakia and Slovenia.

The number of the variables must be reduced in order to reduce the number of components, in order to clarify the model. This will be a future work subject useful to identify the influence factors and to build explanatory models.

The conclusion of this analysis is that the EEU countries will not easily recover the gaps of financial digitalization. Real progress is slow and not efforts are made in order to achieve leverage digital development in the EU countries in the near future.

Conclusions

The United Nation established in 2015 a list of Sustainable Development Goals to improve the life of worldwide people till 2030. The goal referring to economic growth contains a special objective to strengthen the capacity of domestic financial institutions, to encourage and expand access to banking, insurance and financial services for all. A positive culture of long term planning and savings may help improve attitudes alongside with encouraging prudent financial behaviours.

Researchers and policymakers should work together to find the most effective ways to increase access to financial services that improve life and welfare of citizens. Digital access to financial services helps reducing financial exclusion alongside with increasing digital skills and financial literacy. The crises caused by COVID-19 provide better understanding of digital needs and use. High financial literacy is associated with the use of digital financial services. Indicators on digital performance follow the evolution of digital competitiveness in all the countries. Policy makers in EEU countries should accelerate the implementation of the European digital agenda. A first priority is the digital transformation of public services, followed by the provision of financial facilities for innovation and for the entrepreneurs who turn their business into a digital one. On a long term, a strategy for reforming the education system in each country is needed. This can be achieved by digitizing the education system, training the teachers to use the Internet and using digital teaching methods.

Romania is last country of the European Union in terms of implementing the digital agenda. It has a lot to recover in terms of the coherence of the digitization strategy on a medium and long term. A good connectivity is not enough. It is



necessary to develop the supply of high quality digital services in both the public and private sectors, alongside with education campaigns on population.

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CROSS-BORDER COOPERATION IN THE CONTEXT OF THE MOVEMENT TO THE “BLUE OCEAN” (CHALLENGES FOR UKRAINE)

Mykola MYKOLAICHUK*, Nataliia MALYSH**

Abstract

The purpose of the study is substantiating the theoretical and methodological aspects for cross-border cooperation between countries on the eastern borders EU with Ukraine, as a tool for moving to the “blue ocean” of market space. For achieving the researches’ goal, a methodology, which based on the comparison of the results of the sustainable development conditions of the border areas of neighbouring countries had been using. This approach, according to the authors, will help identify problems in the development of these areas and identify tasks to overcome them. On the example of development forecasting of Ukraine’s regions, the practical approach for the primary levers determining of influence on the factors of change in the conditions of development of border areas had been illustrating. The obtained results and the developed conclusions and proposals will contribute to the provision of adequate public administration for balanced and sustainable territories development.

Keywords: cross-border cooperation; balance of interests; instruments of influence; development strategy; management efficiency

Introduction

The development of EU countries is attracted by its results and encourages neighbours to strive for cooperation and membership. The EU, in turn, helps these countries reduce the level of development of EU member states. However, the existence of significant differences in the level of socio-economic development of the EU countries and the former USSR, their values, requires increasing EU attention to improving the tools to overcome imbalances between EU countries and their eastern neighbours.

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The EU is considered to be one of the most significant contributors to world development. It assists not only to its neighbours but also to countries in the developing world. Donation helps reduce the significant threat to society's future - poverty. It not only encourages people to migrate but also causes their health to deteriorate, reduce access to quality education, and reduce the quality of the country's human resources. Poverty requires large expenditures on social assistance. But these costs are not rational because they turn dependency into a livelihood, giving rise to a reluctance to work. The experience of the USA, Latvia and Germany is evidence of the transformation of social assistance abuse into a serious social problem. The formation of social maintenance is becoming widespread in Ukraine. Almost 60% of households in 2012 were covered by at least one social program (Libanova, 2013, p. 233). Therefore, it is worth shifting the focus from donation to partnership.

The European Neighbourhood and Partnership Instrument are of paramount importance among the assistance mechanisms for European countries. It identifies a separate TACIS program to finance countries of the former USSR. However, many countries need to ensure a significant change in democracy, security, social inequality. The events of recent years in Ukraine indicate that the country has to defend its right to European integration in fact in the war with Russia. The guarantor of Ukraine's independence and inviolability of its borders in the abandonment of nuclear weapons brazenly breaks its promises. Russia's ambitions extend to almost all of Ukraine. That is why Ukraine needs to change the emphasis in the traditional areas of assistance. At the same time, the active part of the Ukrainian population seeks not to be passive consumers of aid but the driving force behind positive changes in democratic, economic, and environmental processes.

Public regulation plays an essential role in making positive changes. One of the main instruments of state regulation is a perfect system of evaluation of achievements which will allow to identify weaknesses of each component of the socio-economic system and to form effective mechanisms of the motivation of development. Unfortunately, a sufficiently consistent system of sustainable development indicators for the regions is still lacking even at the international level. It is, therefore, vital to develop a system for evaluating the results of cross-border cooperation.

Given this, the purpose of the study is to substantiate the theoretical and methodological aspects of the use of cross-border cooperation by EU countries on the eastern borders with the former USSR republics as a tool for moving to the blue ocean of market space with a new demand.

For achieving a defined goal, it is necessary to form indicators of the desired state of sustainable development of neighbouring territories based on the coordinated use of regulatory and search forecasts. Further, the factors that influence the selected indicators and the degree of their dependence on the activity of public administration are needed. It is essential to justify the levers of influence on the factors of change in the state of development of the border areas, the necessary assistance from the EU.



1. Theoretical and methodological bases for involving cross-border cooperation in the formation of the “blue ocean” of market space

Cross-border cooperation is an integral part of managing sustainable development in global space. However, globally, the main challenges of sustainable development are poverty reduction, climate change mitigation, wartime prevention and other world-class problems.

The imbalance between developed countries and their neighbours with a much lower standard of living and other values necessitates building relationships that will reduce tension, migration to other countries, and create conditions for sustained growth in social and economic development on both sides. This step can be done through the transition from the “red ocean” of fierce competition to the cloudless market space of the “blue ocean”. Success in the “Red Ocean” is a redistribution in favour of the existing economic pie¹. “Blue Ocean” involves the identification of “not customers”, the formation of new demand, the creation of employment for him. The success is to create a more excellent “economic pie” for all since identifying new values for consumers are out of competition².

The organization and management of cross-border cooperation require solving several problems related to the creation of an information base for creating a benchmarking opportunity to compare key regional development results, improving methods of developing a coherent development strategy; forming a system of balanced indicators for partners; implementation of state regulation of the development of cooperation, control and regulatory measures by the neighbouring countries. The main components of the model of cross-border cooperation with the market space of the “blue ocean” are presented in Figure 1.

The purpose of managing cross-border cooperation is to accelerate the sustainable development of neighbouring territories. After all, the gradual enlargement of the EU to the east leads to its entry into less developed countries. Initially, the countries of the former socialist camp that need to be “brought up” to the level of socio-economic development of EU founders. In turn, even less developed countries of the former Soviet Union, which in order to achieve a “breakthrough” in socio-economic development must implement a managerial revolution.

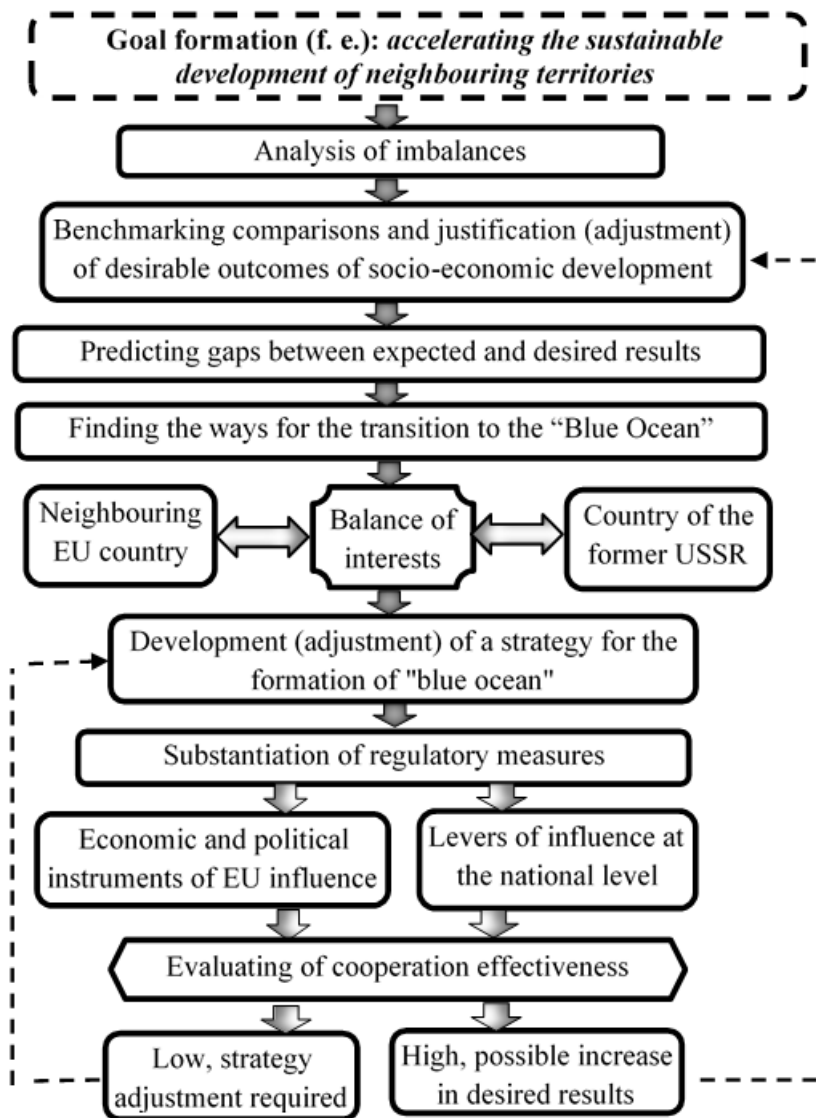
It is based primarily on a change in management philosophy. It is necessary to “squeeze out the last drops of a slave”, to give up confidence in the hopeless backwardness. It is important to stop solving yesterday’s problems to use the old rules. It is necessary to catch up with developed countries confidently, because geopolitical position, natural resource potential, motivation for a better life are the basis for successful development. Therefore, at the beginning of the new millennium,

¹ Kim, W.Chan and Mauborgne, R. (2018), *Perekhid do blakytynogho okeanu* [Blue Ocean Shift]. Kharkiv, Ukraine: Klub simeinoho dozvillia.

² Kim, W.Chan and Mauborgne, R. (2019), *Strateghija blakytynogho okeanu* [Blue Ocean strategy]. Kharkiv, Ukraine: Klub simeinoho dozvillia.

it was proposed to form a new model of public administration in Ukraine “by purpose and results” (Budzan, 2001, p. 17, 191).

Figure 1. Scheme of transboundary cooperation with the market space of the “blue ocean”



Source: author’s representation



An analysis of the imbalance between developed countries and border areas should enable us to identify the range of problems that need immediate resolution and to produce the desired results of socio-economic development. They should be ambitious and long-term. Therefore, their achievement can be gradual, phased. Since the overall results of the development of the territory depend on the activities of economic entities, it is necessary to specify the tasks for individual activities, enterprises. For accomplishing this task, information is needed for benchmarking comparisons in the domestic and foreign markets.

The difficulty of forming an information base is that information on the results of the activity of enterprises is considered confidential and is not reflected in the statistical reporting. In the context of a planned economy, the line ministries sent to the local managers summarized annual reports based on the results of the activities of all enterprises in the sector. That reports contained detailing the best achievements of individual enterprises in various aspects of a business. Market transformations were accompanied by raids of successful enterprises and forced to conceal positive results. However, the presence of benchmarks in possible achievements allows to identify shortcomings in their work and leads to finding ways of significant positive changes, justification of the desired results.

In the management of economic development of regions, the primary attention should be paid to determining the prospects for the development of individual industries, the ability to meet the most critical social needs, identifying problems of regional development. An essential tool for substantiating development plans is forecasting. The construction of forecasts is based on the use of two methodological approaches to their development: search (research) and target (normative). They differ in the directions of forecasting. The search forecast is built from the past to the future and involves determining the future state while maintaining existing trends. However, it is impractical to limit the role of forecasting to the passive prediction of the future. Forecasting, as the necessary part of the decision-making process, should allow for active intervention in the course of events, the development of options for achieving goals.

In order to ensure significant changes in development to bring socio-economic results closer to the level of developed countries, it is necessary to attach particular importance to an active approach to forecasting, forming an idealized image of the region's economy and identifying ways to approach the desired results. The normative forecast is built by creating the desired future and analysing the current situation and answers the question: "which development option should be chosen to achieve the goal?". These approaches complement each other, and their coordination makes it possible to correctly define the goals of gradual development and ensure their achievement.

Statistical forecasting methods, together with expert techniques, make it possible to determine the expected results while maintaining existing trends and resource opportunities. The gaps between desired and expected results become the object of close attention and the search for ways to reduce them.



The search for ways to move to the “blue ocean” should begin with a detailed analysis of competition in the region. It is essential to identify the distinctive features of your products or services from similar products of competitors: for which factors the most influential competition is taking place, for which the most money spending. A particular functional cost analysis allows to reduce unnecessary costs, expand the range of consumers and go beyond the competition in the traditional market. An example of outstanding achievements in this sense is the Australian wine company Casella Wines, which has offered a means for the American wine industry to reduce competition and form a blue ocean. Until 2000, the domestic market was fiercely competitive not only among American wine producers but also suppliers from France, Italy, Spain, Chile, Australia, and Argentina. They offered exquisite wines of significant value, a wide range of all varieties of grapes, refined taste, high-quality ageing, beautiful packaging. The consumers of such products were mostly wealthy people. However, many people preferred beer, vodka, cocktails, because they did not perceive the peculiarities of the taste of bouquets of wines, for the achievement of which the most money was spent. Casella Wines has created a wine [yellow tail] that tasted like a fruit drink and did not require long ageing. Only two types of alcohol were proposed: white chardonnay and red shiraz. The image was completed by a bright but straightforward kangaroo label³. These products have attracted a large number of alcoholic beverages with their ease of selection and have ensured sales growth and business profitability.

It is interesting how the Ukrainian tennis player S. Stakhovsky started his way to the “blue ocean” on the wine market. He did not drink wine at all. He was perceived as a Ukrainian eccentric and at a party on the occasion of the French club championship was still persuaded to try wine. He liked the wine made in Bordeaux. He became acquainted with the culture of production and became interested in this business. In 2015, S. Stakhovsky leased 25 hectares of land with vineyards for ten years. He brought oak barrels for wine storage from France. Due to the decline in wine production in Ukraine, the well-known producer found unoccupied production facilities and warehouses used by Stakhovsky. The wine of 2018 acquired a quality that the French praised. The name of the wine has a tennis theme. The red wine already presented is called Ace by Stakhovsky, and the white wine will be called W by Stakhovsky. This passion of the tennis player opens the way to the formation of a unique niche of consumers who play tennis themselves or are his fans.

Thus, the strategic management of a particular area involves the development and implementation of strategic plans for its socio-economic development. The strategic plan should define the goals of growth, directions of mutually coordinated activity in various spheres which will promote the achievement of the set purposes. The strategy for the development of the border area is a guide for local authorities, businesses and residents of the region. It is the strategy of territorial progress that should become a tool for establishing partnerships between all actors in the area, a

³ Kim, W.Chan and Mauborgne, R. (2019), *Strateghija blakytynogho okeanu* [Blue Ocean strategy], Kharkiv, Ukraine: Klub simeinoho dozvillia, p. 44, 52.



mechanism for identifying and implementing effective strategic actions in all spheres of life.

Strategic plans should be formed, taking into account the peculiarities of the regional economy and cross-border cooperation. They consist in the fact that the economic interests of economic entities and their relations are realized in a defined territory, which covers a part of the regions of different countries. The properties of cross-border markets, the principles of their formation and functioning in most cases differ significantly from domestic and foreign markets. But it is the identification of these features, their use to create benefits, to obtain a synergistic effect is the key to the effectiveness of cross-border cooperation.

Well-known Ukrainian expert in the field of public administration, I. Rozputenko, noted that regional development should be considered not so much as a result, but mainly as a process. I.e. the transformation of the region's economy in a way that makes growth sustainable (self-sufficiency), while improving living standards for a resident of the region" (Rozputenko and Lesser, 2004, p. 359).

However, this transformation must be manageable. It will be necessary uniting the efforts of all economic entities and residents of the region based on proving the economic feasibility of specific changes to ensure sustainable development of the region, the formation of the main tasks in various aspects of an activity.

Defining tasks requires taking into account not only existing but also the future needs of the population, assessing the positive and negative consequences of specific changes in various areas of the region. An active approach to forecasting allows identifying not only future problems but also ways to overcome them, to use information about the future to guide people's activities to make positive changes.

When developing a strategy for the formation of the "blue ocean" in any industry, it is necessary to focus on identifying existing problems and identifying revolutionary approaches to solving them, creating new opportunities by identifying new issues and developing proposals for their solution. Innovative thinking leads to meeting needs that go beyond the traditional industry. Thus, the Cirque du Soleil opened a new market space that combines the attractiveness of the circus and theatre (Kim and Mauborgne, 2019, p. 34).

The success of developing a "blue ocean" strategy depends significantly on the selection of a team of specialists who will find a way to create a new type of market space. And it is not so much about belonging to specific categories of the profession and, above all, to certain behavioural groups. Among the approaches to the selection and characterization of different types of dominant human behaviour in recent years, the classification of Thomas Erickson is becoming increasingly popular. He divides people into four categories and marks them with different colours: blue (analytical), red (dominant), yellow (inspiring), green (stable) (Erikson, 2019, p. 18-19). The most creative thinking is inherent in the dominant or red type of people. There is nothing impossible for them. They are extroverts and feel comfortable in the risk zone, enjoy overcoming obstacles. They can generate ideas about ways to form the blue ocean for a particular industry, territory. The



optimistic and life-affirming properties of the yellows are essential for the team. They are not only able to find non-standard solutions that most people do not pay attention to, but also know how to persuade and inspire.

Territories need to create “blue oceans” in various industries. Then their combined action will allow the region as a whole to move from a harsh competitive environment to a calm blue ocean. However, in the context of cross-border cooperation, additional factors must be taken into account: maintaining a balance of interests and comprehensive assistance in the confrontation of the countries of the former Soviet Union with Russian aggression.

Given the need for a breakthrough in sustainable development, it is necessary to ensure a balance of interests of the parties in three aspects - economy, population, environment. Implemented projects should ensure the economic growth of all participants in cross-border cooperation. Deterioration of the ecological condition of the territory of any of the participants of collaboration is not allowed. Therefore, the strategic environmental assessment of projects should be mandatory. Particularly vulnerable is the balance of interests of the population, their employment, the level of wages. A group of representatives of all countries participating in cross-border cooperation should take care of ensuring the balance of interests. They must be representatives of the green (stable) type. Although these people are less interested in change, they are useful because they are prone to non-conflict. “Greens” are characterized by elements of behaviour and “red”, and “yellow”, and “blue”. Still, their slowness, the desire to bring peace can balance the sharpest features of certain types, and they are team players, slow but reliable performers, carriers of peace in the team.

It is necessary to create an operational environment for the interest of participants in cross-border cooperation in the implementation of projects for the development of various industries and spheres of activity. Each country needs to support cross-border collaboration at the state level. However, given Russia’s imperial ambitions, its aggressive behaviour toward the former Soviet republics, the EU has an extraordinary role to play. It is the European Union that inspires the movement of these countries to change their way of life, gives hope for the EU’s support for positive changes, some protection against encroachments on territorial integrity and sovereignty. Therefore, the stage of developing levers of influence both at the state level of the countries participating in cross-border cooperation and by the European Union is essential.

The success of the implementation of strategic plans significantly depends on the quality of management at the regional and national levels. Achievements in the sustainable development of cross-border cooperation areas should be reflected in the relevant indicator, which based on a comparative assessment of indicators of different territories allows identifying positive and negative trends in cross-border cooperation management. It is necessary to identify the factors influencing the leading indicators and levers to regulate them. It is also expedient to substantiate the criteria for assessing the effectiveness of state regulation.



The results of the assessment affect the choice of the direction of corrective action. In case of insufficient effectiveness of cooperation, there is a need to adjust the strategy and system of regulatory levers. High efficiency indicates the possibility of accelerating development and increasing the level of desired results.

2. Practical approaches for forming a system of regulatory measures for cross-board regions development

The assessment of achievements in cross-border cooperation should be based on a comparison of the leading indicators that reflect the imbalance in the socio-economic development of the EU and the former Soviet republics. The most significant differences between countries are in the amount of GDP per capita and wage levels (see Table 1, 2).

Table 1. Dynamics of GDP per capita by country

| Ukraine's neighbours countries - EU members | | | | | | | | |
|--|--|------|------|-------|---------------------|-------|-------|-------|
| | GDP per capita, thousand USD (in terms of purchasing power of 2010) | | | | Value to Ukraine | | | |
| Year | 2005 | 2010 | 2014 | 2017 | 2005 | 2010 | 2014 | 2017 |
| Country | | | | | | | | |
| Ukraine | 15,6 | 16,2 | 17,3 | 15,9 | 1,000 | 1,000 | 1,000 | 1,000 |
| Ukraine's neighbour countries from the former USSR | | | | | | | | |
| Belarus | 18,5 | 26,7 | 29,4 | 28,4 | 1,186 | 1,648 | 1,699 | 1,786 |
| Moldova | - | 6,7 | 8,1 | 8,9 | - | 0,414 | 0,468 | 0,560 |
| Ukraine's neighbour countries – EU members | | | | | | | | |
| Romania | | | | | | | | |
| 15,4 | 18,6 | 21,1 | 24,9 | 0,987 | 1,148 | 1,220 | 1,566 | |
| Hungary | 20,8 | 20,8 | 22,4 | 24,9 | 1,333 | 1,284 | 1,295 | 1,566 |
| France | 33,1 | 33,5 | 34,2 | 35,4 | 2,122 | 2,068 | 1,977 | 2,226 |

Source: Verner, 2019, p.468-469⁴.

Over the last decade, the countries of the former Soviet Union have failed to make a breakthrough in reducing the gap with European countries in terms of the main criterion of economic development (GDP per capita). Thus, in 2005, Ukraine was 2,3% ahead of Romania (which was not yet part of the EU) and lagged behind Poland was only 3,2%. In the post-crisis year of 2010 in Ukraine, this figure increased by 3,8%, but in other countries there was growth. In 2010, compared to 2005, GDP per capita increased: in Romania - by 20,8%; Poland – by 24,8%; Slovakia - 25,0%. The founding countries of the EU showed different results in the

⁴ Verner, I. (ed.) (2019), *Statystychnyi shchorichnyk Ukraïny za 2018 rik [Statistical Yearbook of Ukraine for 2018]*, Kyiv: State Statistics Service of Ukraine (retrieved from: http://ukrstat.gov.ua/druk/publicat/kat_u/2019/zb/11/zb_yearbook_2018.pdf).

post-crisis year of 2010. France (1,2%), Belgium (3,3%), the Netherlands (5,1%) and Germany (7,6%) showed GDP per capita. Italy is the only country presented in Table 1 has a negative change in GDP per capita in the post-crisis period (-4,3%). However, in terms of GDP per capita, Italy is still almost twice as large as Ukraine.

From the other side, it should be noted that the level of this indicator is affected not only by GDP growth but also by population decline. Thus, according to 2014, the size of GDP in Ukraine increased by 57,0%. However, the population decreased by 16,2%, which had a positive effect on GDP per capita. For the regions, in the statistical reporting, usually give the indicators of the gross regional product (GRP). The differences between countries are substantial, especially in terms of wages. Therefore, it is not surprising that a significant proportion of Ukrainians seek to go abroad to earn money.

The aim of cross-border cooperation should be to improve the results of sustainable development of the cooperating region in comparison with other regions and to bring the level of crucial indicators closer to the EU countries. Therefore, we consider it appropriate to determine the rating of the region at the initial stage of cooperation and in subsequent years. The second indicator should characterize the effectiveness of the movement to the desired result by comparing the achieved results with the desired ones.

The indicators selected to characterize the positive changes in the sustainable development of territories should increase in the event of an increase in achievements. Therefore, for calculating indicators' value, in our opinion, you should use the relationship between the value of the analysed index and the maximum amount of the index for the regions (formula 1).

$$I_i = X_i / X_{\max} \quad (1)$$

Table 2. Dynamics of average wages by country

| Ukraine's neighbours countries - EU members | | | | | | | | |
|---|--------------------|--------|--------|--------|------------------|--------|--------|--------|
| | Average wages, USD | | | | Value to Ukraine | | | |
| Year | 2005 | 2010 | 2014 | 2017 | 2005 | 2010 | 2014 | 2017 |
| Country | | | | | | | | |
| Ukraine | 157,3 | 282,2 | 292,7 | 261,2 | 1,000 | 1,000 | 1,000 | 1,000 |
| Ukraine's neighbour countries from the former USSR | | | | | | | | |
| Belarus | 104,7 | 240,3 | 291,4 | 302,0 | 0,666 | 0,852 | 0,996 | 1,156 |
| Moldova | 215,3 | 408,7 | 592 | - | 1,369 | 1,448 | 2,023 | - |
| Ukraine's neighbour countries – EU members | | | | | | | | |
| Romania | | | | | | | | |
| 331,9 | 609,5 | 705,6 | 819,4 | 2,110 | 2,160 | 2,411 | 3,137 | |
| Hungary | 947,4 | 1127,7 | 1095,6 | 1045,2 | 6,023 | 3,996 | 3,743 | 4,002 |
| Poland | 812 | 1124,0 | 1195,9 | 1122,5 | 5,162 | 3,983 | 4,086 | 4,297 |
| Slovakia | 831,9 | 1203,8 | 1321 | 1242,7 | 5,289 | 4,266 | 4,513 | 4,758 |
| Founding countries of the EU | | | | | | | | |
| Belgium | 3615,3 | 4295,0 | 4742,5 | 4127,2 | 22,983 | 15,220 | 16,203 | 15,801 |
| Italy | 2581,1 | 3072,2 | 3168,8 | 2750,2 | 16,409 | 10,887 | 10,826 | 10,529 |



| | | | | | | | | |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Netherlands | 3888,2 | 4718,6 | 5012,4 | 4401,6 | 24,718 | 16,721 | 17,125 | 16,851 |
| Germany | 3159,0 | 3620,0 | 4048,8 | 3713,6 | 20,083 | 12,828 | 13,833 | 14,217 |
| France | 3086,8 | 3746,9 | 3990,3 | 3541,8 | 19,624 | 13,277 | 13,633 | 13,560 |

Source: Verner, 2019, p.462-463.

In our opinion, in a simplified form, the indicator of the region's achievements in economic development can consider as a half-sum of the indexes of gross regional product per capita and the average monthly wage, i.e. it can have the following structure:

$$I_{EcDev} = 0,5I_{GRP} + 0,5I_{AvWage} \quad (2)$$

The results of the calculation of this indicator according to 2017 data are showing in table 3.

The lowest overall result is in Luhansk oblast, part of which is in the war zone. In this area, the lowest level of GRP per capita. Low level of all indicators in Chernivtsi region, low and below average in Zakarpattya and Ternopil regions, below the average in Ivano-Frankivsk region.

Three oblasts from the list of those with a rating below the average: Zakarpattya, Ivano-Frankivsk and Chernivtsi are part of the Carpathian Euroregion. The formation of euro regions is the most common form of cross-border cooperation (Cornea and Cornea, 2017, p. 138).

Table 3. The result of calculating the rating of the regions of Ukraine based on the indicator of economic development

| Regions | I _{grp} | Group | I _{AvWage} | Group | I _{EcDev} | Group | Rating |
|----------------------|------------------|-------------------|---------------------|-------------------|--------------------|-------------------|--------|
| Poltava | 1,000 | high | 0,844 | below the average | 0,922 | high | 1 |
| Kyiv | 0,915 | high | 0,926 | high | 0,921 | high | 2 |
| Dnipropetrovs | 0,929 | high | 0,894 | above the average | 0,912 | high | 3 |
| Zaporizhzhya | 0,736 | above the average | 0,884 | above the average | 0,810 | above the average | 4 |
| Kharkiv | 0,704 | above the average | 0,804 | below the average | 0,754 | average | 5 |
| Mikolayiv | 0,617 | average | 0,864 | average | 0,741 | average | 6 |
| Odesa | 0,618 | average | 0,843 | below the average | 0,731 | average | 7 |
| Donetsk | 0,398 | low | 1,000 | high | 0,699 | average | 8 |
| Cherkasy | 0,592 | average | 0,778 | below the average | 0,685 | average | 9 |
| Vinnysya | 0,575 | average | 0,788 | below the average | 0,682 | average | 10 |
| Kirovohrad | 0,585 | average | 0,746 | low | 0,666 | average | 11 |
| Lviv | 0,558 | average | 0,823 | below the average | 0,652 | below the average | 12 |
| Sumy | 0,514 | below the average | 0,766 | below the average | 0,640 | below the average | 13 |
| Ivano- | 0,465 | below the average | 0,782 | below the average | 0,624 | below the average | 14 |
| Chernihiv | 0,514 | below the average | 0,726 | low | 0,620 | below the average | 15 |
| Khmelnyskiy | 0,467 | below the average | 0,765 | below the average | 0,616 | below the average | 16 |
| Zhytomyr | 0,475 | below the average | 0,752 | low | 0,614 | below the average | 17 |

| | | | | | | | |
|--------------------|-------|-------------------|-------|-------------------|-------|-------------------|----|
| Kherson | 0,451 | below the average | 0,752 | low | 0,602 | below the average | 18 |
| Rivne | 0,418 | below the average | 0,774 | below the average | 0,596 | below the average | 19 |
| Volyn | 0,423 | below the average | 0,753 | low | 0,588 | below the average | 20 |
| Zakarpattya | 0,317 | low | 0,818 | below the average | 0,568 | below the average | 21 |
| Ternopil | 0,36 | low | 0,715 | low | 0,538 | below the average | 22 |
| Chernivtsi | 0,288 | low | 0,724 | low | 0,506 | low | 23 |
| Luhansk | 0,176 | low | 0,755 | low | 0,466 | low | 24 |

Source: author's representation on Verner data, 2019b, p. 17⁵.

Currently, the regions of Ukraine are part of ten Euroregions. But the first has been created in 1993, the Carpathian Euroregion, which included administrative-territorial units of countries such as Poland, Slovakia, Romania, Hungary, Ukraine. In addition to Ukraine, the following regions included other former republics of the USSR. Thus, in 1995 the Euroregion "Bug" has been created with the participation of Poland, Ukraine and Belarus. Two Euroregions created with the involvement of Romania, Moldova, and Ukraine: The Lower Danube in 1998 and the Upper Prut in 2000. The other six Euroregions have been created with the participation of Belarus, Moldova and Russia (Mykula and Tolkovanov, 2011, p. 147).

The best result of developed European countries can be the result of a dream for all participants in the Euroregion. But to achieve it requires some time and action. Therefore, in the short term, it is necessary to establish the results for which the foundation have been created. For different participants, the desired effect may be different. For example, for Zakarpattya, Ivano-Frankivsk and Chernivtsi regions, the first stage may be to achieve an average level of development among the areas of Ukraine. For the Lviv region, it is advisable to make the transition to a level above average. The task should be defining in absolutely and comparable indicators. For example, the desired level of GRP per capita and the level of average wages should be adjusted to a specific year and presented in a common currency.

The expected average result by GRP level per person in Ukraine can be determined using the following trend's equation:

$$Y_{\text{GDP_UA}} = 215,74t^2 - 663,86t + 4752,6; R^2 = 0,9758 \quad (3)$$

Where: $Y_{\text{GDP_UA}}$ – GRP per person on average in Ukraine, UAH; t – the ordinal number of the period; R^2 – the square of the correlation coefficient, which is a criterion for the reliability of the trend equation.

Based on the above trend equation, the projected level of the average GRP in Ukraine per capita for 2024 is UAH 113086,2 or USD 14250,5 at the 2010 exchange rate.

The given equations of trends (4–7) for determining the projected level of GRP per person in Zakarpattya region (Y_{Zak}), Ivano-Frankivsk ($Y_{\text{Iv-Fr}}$), Lviv (Y_{Lv}),

⁵ Verner, I. (ed.). (2019b), *Statystychnyj zbirnyk Reghiony Ukrajinny 2019* chastylna [Statistical publication Regions of Ukraine 2019, Part 1], Kyiv: State Statistics Service of Ukraine (retrieved from: http://ukrstat.gov.ua/druk/publicat/kat_u/2019/zb/12/zb_ru1ch2019.pdf).



Chernivtsi (Y_{Cherniv}) show next results. While maintaining the existing trends until 2024 GRP per person will increase in the Zakarpattya region to UAH 57909,89 (USD 7293,40 at the exchange rate of 2010), Ivano-Frankivsk region – to UAH 77385,64 (USD 9746,30 at the exchange rate of 2010), Lviv – to UAH 97945,28 UAH (12335,68 USD at the rate of 2010), Chernivtsi – up to 48020,96 UAH (6047,98 USD at the rate of 2010) (calculated according to Verner, 2019a, p.219).

$$Y_{\text{Zak}} = 95,987 t^2 - 1,8467t + 2665,7; R^2 = 0,9744; \quad (4)$$

$$Y_{\text{Iv-fr}} = 148,12 t^2 - 474,22t + 3449,8; R^2 = 0,9682; \quad (5)$$

$$Y_{\text{Lv}} = 215,18 t^2 - 1310,7t + 5488,4; R^2 = 0,9717; \quad (6)$$

$$Y_{\text{Cherniv}} = 86,551 t^2 - 175,06t + 4519,5; R^2 = 0,9691; \quad (7)$$

Thus, relative to the average in Ukraine, the achievements of Zakarpattya region will be 51,2%, Ivano-Frankivsk region – 68,43%, Lviv region – 86,61%, Chernivtsi region – only 42,46%. Therefore, all oblasts except Lviv need to develop and implement a “breakthrough” strategy that will provide significant positive changes.

It should be noted that the Lviv region already in 2014 had indicators within the range of the average value. Therefore, it is necessary to choose another amount of the desired level, above average. The benchmark can be the expected performance of a region with a high level of development, such as Dnipropetrovsk region. The equation of the trend for forecasting the level of GRP per person is as follows:

$$Y_{\text{dnipro}} = 278,93 t^2 - 439,29 t + 4519,5; R^2 = 0,9770; \quad (8)$$

The expected result in 2024 is UAH 156640,22 (USD 19728,0 at the rate of 2010) per person (calculated according to Werner, 2019a, p.219). When setting a more intense task, it will be necessary to act actively during the development and implementation of the strategy.

The effectiveness of public authorities ($I_{\text{PA_eff}}$) should be assessed by the ratio of actual achievements to the desired result. Similarly, it is possible to justify the task of raising wages. Thus, the second indicator of development success within cross-border cooperation will look like:

$$I_{\text{PA_eff}} = (I_{\text{GRPfact}} / I_{\text{GRPdis}} + I_{\text{Wage_fact}} / I_{\text{Wage_dis}}) / 2; \quad (9)$$

where I_{GRPfact} is the actual level of the gross regional product.

I_{GRPdis} – the desired level of the gross regional product.

$I_{\text{Wage_fact}}$ – the actual level of the average wage in the region.

$I_{\text{Wage_dis}}$ – the desired level of the average wage in the region.

The value of the indicator $I_{\text{PA_eff}}$ more or equal to 1,0 indicates an excellent result, and the need to move to a higher level of the desired result.

The value of the indicator $I_{\text{PA_eff}}$ less than 1,0 indicates a necessity for improving the strategy and levers of influence on business entities.

For European countries from the former socialist camp, tasks must define similarly based on an analysis of the achievements of the relevant group of countries. And for the leader of this group, the goals should be formed by comparison with the most developed European countries.

The goals of cross-border cooperation and approaches to regulating cooperation processes primarily depend on the type of borders. They are divided into

the boundaries of the European Union: internal and external, and boundaries between countries that are not part of the European Union. The purpose of cross-border cooperation between the countries of the European Union is the full integration of their space, the levelling of the barrier function of borders (European Commission, 2015). This feature increases its weight at the external borders. The purpose of cooperation with neighbouring countries is to form a certain level of security of the European Union. For doing this task, it is necessary to establish cultural, political, economic ties with border countries, to improve the living standards of their populations. Cross-border cooperation between non-EU countries should lay the groundwork for further EU enlargement through democratization in those countries (Del Bianco and Jackson, 2012; Stiglitz, 2000).

The interaction mechanism, between the countries of the European Union and with its neighbours, must be continuously developed and improved. This task is due not only to gaining experience but also to changes in the composition of countries in the European Union, the movement of external borders and the emergence of new neighbouring countries with a different (lower) level of socio-economic development, cultural characteristics.

Formed by Western European countries, the institute of cross-border cooperation has allowed the countries of the former socialist camp to successfully use its opportunities, adapt it to their institutional and cultural environment and achieve the goal of integration into the European Union. In Ukraine, the formation of the institution of cross-border cooperation is too slow, and its functions, which are inherent in developed countries, are difficult to adapt to the specific conditions of our country. Therefore, it is appropriate to use recommendations for “growing” their institutions, which can coexist with the institutions of other countries (European Commission, 2015; Del Bianco and Jackson, 2012). But for their formation, it is necessary to identify the reasons for the low efficiency of cross-border cooperation. This situation is incredibly real for the Carpathian Euro region, which covers five countries, but where Ukraine dominates in terms of population (71%) and territory (41%) (Mykula and Tolkovanov, 2011, p. 149). Therefore, it significantly affects the performance of this euro region as a whole.

The complexity of managing the Carpathian Euroregion is due to its features (European Commission, 2015; Mykula, 2013):

- peoples' quantity (covers about 16 million people).
- the difference in the administrative-territorial structure, which complicates the elections for the cooperation of structural units with the same powers.
- significant lag of Ukrainian regions from Polish, Slovenian, Hungarian, Romanian in the development of border infrastructure.
- Among the factors of negative impact on the economic efficiency of cross-border cooperation are the most important (European Commission, 2015; Terlouw, 2012):
- Giving preference to political, cultural, social areas of development.



- Low attention to the development of joint strategies to meet the concerted interests of cross-border regions and avoid competition between territories for resources.
- Insufficient attention to the involvement of business structures in cross-border cooperation.
- Lack of staffing of local governments with specialists capable of developing and implementing innovative projects for the development of cross-border areas.

It should be borne in mind that the policy of the European Union is aimed not only at reducing imbalances between countries but also overcoming inequalities in the development of regions of each country (Council of Europe, 1980). Therefore, it is necessary to reduce the lag in the development of the Ukrainian parts of the Carpathian Euro region from the other areas of Ukraine and bring their development closer to the level of foreign participants in the Carpathian Euro region.

At the state level, Ukraine needs to:

- Bring the border infrastructure in line with the state of European countries.
- Organize advanced training of leaders and leading specialists of local governments in the regions participating in cross-border cooperation to acquire the necessary knowledge and skills to develop and implement a strategy for the transition to a “blue ocean” market environment.
- Use targeted preferential taxation of business projects for the formation of the blue ocean of the market environment.

Mainly it should be borne in mind that among the countries of the former Soviet Union, not all seek European integration. Russia has its imperial ambitions and wants to involve Ukraine, Belarus and Moldova. Therefore, Russia is trying not to allow Ukraine to make a clear choice about European integration, even though military aggression. In such modern circumstances, the European Union’s role in helping to reduce the imbalance between the development of European countries and border areas, as well as the security of its eastern borders.

The European Union’s focus on supporting the transition to a blue ocean market environment will contribute not only to the rapid economic development of cross-border areas but also to improving relations between the populations of neighbouring countries. After all, the development of strategies involves taking into account the balance of interests of each party, and joint participation in its implementation, obtaining a synergistic effect from the use of resource opportunities of neighbouring countries will help to enjoy cooperation, reduce the basis for conflict.

Conclusions

For achieving positive changes in the management of cross-border cooperation, it is necessary to increase the effectiveness of state regulation of the development of Euroregions, which should be aiming at support for achieving the

results of the “blue ocean” strategy. That is the formation of new unique markets for the consumption of goods and services that are not competitors of existing ones.

For implementing this task, it is advisable to focus on:

- training of management staff for cross-border cooperation, able to identify possible growth points, reduce competition for resources by developing and implementing a strategy for the transition to the blue ocean of market space.
- ensuring the availability to the countries of the Euroregion of statistics of the relevant territorial units of each state (regions, voivodships, districts, etc.), necessary to assess the achievements in cross-border cooperation.
- coordination between neighbouring countries that develop and implement joint projects, levers of financial motivation.

A particular task for the regions of Ukraine bordering the countries of the European Union is the development of border infrastructure and participation in the financing of innovative development projects.

An essential role in improving the effectiveness of cross-border cooperation belongs to the use of methods for forecasting socio-economic development. Normative forecasts substantiate indicators of the desired state of socio-economic achievements. Search forecasts make it possible to assess the expected results of growth while maintaining existing trends.

The gaps between the desired and expected results become the basis for finding ways to reduce them and the formation of tasks at a particular stage of development. A useful tool for bringing the real situation closer to the normative one is the development of strategies for the transition to the blue ocean of the market environment. Comparisons of real achievements with normative ones make it possible to assess the effectiveness of the government in the management of cross-border cooperation.

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ASSESSING EUROPEAN UNION'S ACTORNESS IN THE EXTENDED NEIGHBOURHOOD: THE CASE OF CENTRAL ASIA

Ioan-David ONEL*

Abstract

The interest of the European Union towards Central Asia grew after 2002. Fuelled by factors such as the region's geostrategic location, energy resources and potential in fostering stability, the EU's political involvement towards it intensified in the past two decades. The paper assesses EU's actorness in the region of Central Asia, by applying the opportunity, presence, capability framework elaborated by J. Vogler and C. Bretherthon (2006). The paper argues that EU's actorness in Central Asia is limited, but it witnessed a positive development since 2002, the EU being one of the most important actors in the region.

Keywords: Central Asia, European Union, actorness, Russia, China

Introduction

After the end of the Cold War and the dissolution of the Soviet Union, the European Union, at that time, the European Community, commenced its interactions with the states which were part of the former Soviet space¹. There can be identified three paths on which these states were engaged by the EU. The Baltic States enjoy the closest relation with the EU, as they became members of the Union in 2004. Another group of former Soviet states engaged by the EU is the group later included in the Eastern Partnership: Ukraine, Belarus, Republic of Moldova, Georgia, Azerbaijan and Armenia. Finally, the third group comprises the states of Central Asia (CA): Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Despite being the most remote former Soviet republics relative to the EU, the Central Asian states received a growing interest and political engagement from Brussels, reflected through an increase of interactions and political documents issued towards them, among which the EU Strategy for Central Asia, adopted in 2007, and renewed in 2019, expresses a significant political will.

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¹ The first programme dedicated to the states of the former Soviet Union was TACIS, launched in 1991, before the adoption of the Maastricht Treaty in 1993.

EU's interest for Central Asia is given by the special importance held by the region in terms of world politics, and for the EU specifically. Concerning its importance in world politics, the void of power appeared after the fall of the Soviet Union and the will of the five Central Asian republics to integrate in the global system, generated a context which attracted the interest of the great powers for influence in the region (Kavalski, 2010, p. 9), thus creating a situation labelled by some authors as a "new great game" (Efegil, 2010, p. 84). The EU, after 2001, and during the mid-2000s, developing objectives at global scale, manifested an increasing interest for Central Asia, even though it doesn't lie on the near Eastern border of the EU. Firstly, in the wake of the 9/11 terrorist attacks and the military involvement of the US in Central Asia, the EU recognized the importance of the stability of the region for both the stability of Europe, and the stabilization of Afghanistan. Bordering Tajikistan, the weakest of the five CA republics (Kangas, 2018, p. 37), the destabilizing factors from Afghanistan can easily spread in the region, towards Europe. Secondly, the region has an increased potential in fostering connectivity between Europe, through the South Caucasus, and East/South-East Asia. Increasing connectivity at the level of Central Asia has, at its turn, the potential of fostering the inter-regional trade and commerce, which could benefit the EU. Thirdly, Central Asia has high deposits of natural resources, found especially in the states of Kazakhstan, Turkmenistan and Uzbekistan. Accessing these resources would highly benefit the EU, by breaking the dependency on Russia. These factors are interconnected and they amount for EU's interest in Central Asia.

Moreover, the region can be regarded as connected to a certain extent to the EU, through the states of the Eastern Partnership. Relevant in this regard are projects such as the Baku initiative, or the Trans-Caspian pipeline, which aim to help the EU to capitalize on Central Asia's energy potential (Efegil, 2010, pp. 78, 79). Also, after the enlargements of 2004/2007 and the launch of the European Neighbourhood Policy, a perception of Central Asia as a "more proximate neighbour" (Ibidem, p. 79) emerged. Due to these growing interdependencies and security links, Central Asia – as well as other regions – came to be included in what was termed the EU's "extended neighbourhood", suggesting a reconceptualization of EU's neighbourhood, by expanding its geographic scope (Grevi and Keohane, 2014, pp. 18-20).

In this context, the paper aims to assess EU's actorness in Central Asia. The relevance of this topic is given by the importance of the region for the EU, in the light of the factors exposed above, and also due to the interdependency potential between the EaP states and Central Asia. Its relevance amounts also by approaching a highly debated topic in the sphere of International Relations, EU's actorness, applied to a region which is less enquired than others.

The theoretical perspective used in this analysis is based on the social-constructivist paradigm, and it is represented by John Vogler and Charlotte Bretherton's contribution to actorness theorization. More precisely, the paper uses



the *opportunity, presence, capability* framework proposed by the two authors for analysing actorness, presented in more details in the following section.

The research questions that guide this analysis are:

1. How can the EU's actorness in Central Asia be evaluated from the perspective of Vogler and Bretherton?
2. How did the EU's actorness in Central Asia evolve during 2002-2019?
3. What are the main factors influencing EU's actorness in Central Asia?

The analysed time frame spans between 2002, which marks a shift in the EU engagement in Central Asia, and 2019, representing the adoption of the new CA Strategy, which starts a new stage of the EU's involvement. The paper employs a qualitative methodological approach, using the case study as a research method, and uses political documents, reports, declarations, as well as second literature represented by the contributions of other scholars on EU's role².

1. Theoretical framework

The nature of the European Union can be regarded as hybrid, being described as more than an international organization, but less than a state, characteristic which made the EU to be referred to as an “unidentified political object” (Rhinar and Sjöstedt, 2019, p. 4), thus emphasizing its unique character. This feature highlights the difficulties of establishing the actor capability of the EU, a topic which stemmed fruitful debates in the academic sphere of International Relations.

The conventional literature on International Relations approaches the concept of *actor* in the perspective of the units of a system. The actors are the most relevant units for the study of international relations. The Realist perspective stresses the importance of the state in the international arena, other actors, such as international organizations or corporations, being subordinated to the actions of states. Moreover, states are differentiated by their power, the most important in the international system being the most powerful states. On the other side, the Neoliberal perspective challenges the state-centric position, pointing towards the importance of the non-state units, such as international organizations (Vogler and Bretherton, 2006, pp. 14, 15).

The concept of *actorness* was introduced by Cosgrove and Twitchett in 1970, in an approach towards the roles of UN and the European Economic Community. The concept of actorness describes more than the status of a unit, encompassing a more complex behaviour dimension, stressing the autonomy of the entity from the environment in which it operates. Autonomy, at its turn, can be perceived as the capability of “formulating purposes and making decisions” (Ibidem, p. 15). Many studies on actorness focused on the autonomy of the unit, and therefore stressed the internal dimension. Acknowledging the social sciences debate between the primacy of agency or structure in determining the action, Vogler and Bretherton (2006)

² The paper doesn't aim to bring an exhaustive approach on the topic, since it would exceed its limits, but it rather aims to present the most relevant empirical aspects for assessing EU's actorness in Central Asia.



propose an approach focused on the relation between the two dimensions, being theoretically grounded in social constructivism. Constructivism enquires the ways in which the behaviour of the agent is influenced – not determined – by the structure. At its turn, the agent can influence the nature of the structure (Ibidem, pp. 19, 20). Therefore, the relation between structure and agency can be considered as dialectical. Based on these theoretical grounds, Vogler and Bretherton propose a perspective of EU actorness based on three concepts: *opportunity*, *presence* and *capability*.

Opportunity refers to the political context in which EU's actions take place. This external environment can be described both by material factors, such as events, and by non-material factors, such as ideas and perceptions, which are connected, restraining or allowing action (not determining it). Even though it refers to the structure, opportunity must not be considered independent from the agent, as the process is dynamic, and it can be influenced by the actions or inactions of the EU (Ibidem, pp. 23, 24). In this paper, the focus of the analysis lies on the context offered by the Central Asia region, in the timeframe comprised between 2002 and 2019.

Presence points towards the ability of the EU to exert influence outside its borders. The influence is described as the ability to “shape perceptions, expectations and behaviour of others” (Ibidem, p. 26). Presence is not achieved through a voluntary, intended action, rather it is a result of EU's internal characteristics. It can be also regarded as the reputation with which the EU is perceived by external actors. Presence relies on two factors. The first element encompasses the identity and character of the EU. The identity refers to the shared meanings and understanding behind EU's actions. The character emphasizes the material existence of the EU: the member states and the EU institutions in which they interact. The second element points towards the unintended effects generated on the outside by the EU's internal processes (Ibidem, pp. 25, 26). An example in this regard can be considered EU's internal success, which makes it to be regarded as a community of “security and prosperity” (Vogler and Bretherton, 2013, p. 377). One of the most important sources of presence of the EU lies in the Union's single market, as well as in the economic power of its consumers, which represent strong attractive factors (Ibidem).

Finally, the third element of actorness, capability, highlights the internal aspects which favour or hinder EU's ability to act, and therefore, to “exploit” a potential favourable context (opportunity) and favourable perception towards the EU (presence). Capability designates EU's ability to formulate policies and to use the adequate policy instruments. There are four capability requirements which need to be fulfilled: the commitment of the member states towards a set of shared values; the legitimization of the processes and priorities of external policy, in the domestic environment; the ability to establish priorities and generate policies, which comprises two elements: a) consistency (the congruence of the external policies of EU and those of individual member states), and b) coherence (between different policy sectors of the Union); and the capacity to use policy instruments (Vogler and Bretherton, 2006, p. 28).



Bretherton and Vogler's contribution to actorness was chosen for this analysis due to its comprehensive nature. The opportunity, presence, capability framework encompasses elements concerning both the actor and the structure, as well as the relation between them, therefore facilitating an inclusive analysis (Ibidem, pp. 19-22). Bretherton and Vogler applied the above presented requirements on the EU at global level, and their latest article (2013) suggests that the EU's ability to exert influence globally has diminished after the mid-2000s (Vogler and Bretherton, 2013, pp. 386, 387). This paper aims at conducting a similar analysis, but focused on the region of Central Asia, by applying the above presented requirements for EU's actorness, during the 2002-2019 period.

2. EU's involvement in Central Asia

The first EU action whose scope included also the states of Central Asia, is the Technical Aid to the Commonwealth of the Independent States (TACIS) programme, which was initiated in 1991. Central Asia was not a priority in this programme, but it received funding for a series of projects (Voloshin, 2014, p. 25). The first specific actions initiated by the EU towards Central Asia date as early as 1993/1994. In 1993, the Transport Corridor Europe-Caucasus-Asia (TRACECA) was launched by the EU, at a conference which gathered the Central Asian and South Caucasian states' Transport Ministers in Brussels (Cornell and Starr, 2019, p. 19). One year later, in 1994, the EU opened its first delegation in Central Asia, in Kazakhstan, which had offices also in Kyrgyzstan and Tajikistan. Further EU initiatives followed in the framework of the TACIS programme (on a multilateral basis), and through Partnership and Cooperation Agreements (PCAs) with the states of Central Asia (on a bilateral basis) (Efegil, 2010, p. 72).

Nonetheless, it was after the 9/11 terrorist attacks that EU augmented its involvement towards Central Asia, marking an important change in its approach towards the region. Among the factors that prompted the shift were the concerns over regional stability and terrorism proliferation, the interest for the local energy resources, but also a perception of proximity after the 2004-2007 EU enlargement (Ibidem, p. 79). The growing interest of Brussels for the region and the higher importance it attached to Central Asia were reflected in a series of subsequent actions undertaken by the EU, such as the appointment of a Special Representative for Central Asia and the adoption of several political documents. The following part analyses EU's actorness in Central Asia, by applying each of the actorness requirements, since 2002.

2.1. Opportunity

Beginning with 2002, the political context at the level of Central Asia has been marked by a growing involvement in the region of multiple international actors, both proximate and Western powers. To the already strong Russian influence in the region added the post-9/11 US military involvement, as well as a growing Chinese presence.



Concerning the influence of the powers neighbouring Central Asia, the interferences of Russia and China are the most significant. Russia's dominance in the region can be considered as initiating since the end of the 19th century (Golden, 2011, p. 125), until the dissolution of the Soviet Union, in 1991. Based on the infrastructural, energetic, social, cultural and military ties that developed in this period, Russia inherited a strong influence over the Central Asian states. Its main interests in the region revolved around the access to the region's energy resources, especially oil and gas, and in maintaining regional security (Laurelle, 2010, p. 161). Russia is also interested in keeping its political influence over Central Asia, by limiting any outside influence, especially from the West (Lo, 2015, p. 11). If in the early 2000s, Russia maintained a strong position both in the energy and security fields at the level of Central Asia, after the 2008/2009 economic crisis, after a series of energy disputes with Turkmenistan, Russia's position on the CA energy market declined in favour of China, the latter actively engaging in energy trade relations with Central Asian states (Kaczmarek, 2015, pp. 88-101).

After 2008, China developed significant energy infrastructure projects (such as the Central-Asia-China pipeline) and, capitalizing on Russia's post-crisis economic weakness, it gained better energy contracts with the states in the region (Ibidem, pp. 89-92). Faced with the growing Chinese economic power, Russia lost its prime position in this field, but retained it in the sphere of military/hard security, the relation of the two developing into a "division of labour" (Ibidem, p. 86) at the level of Central Asia, each of them having a dominant position in a different field of activity. At the same time, both Russia and China promote economic projects in the region: the Russian-led Eurasian Economic Union and the Chinese Belt and Road Initiative. The two states also exert influence upon the region, in the security field, through the Shanghai Cooperation Organization (SCO), led by China, where their cooperation intensified as a response to the prolonged US military presence in the region, and through the Russian-led Collective Security Treaty Organization (CSTO) (Clarke, 2010, pp. 129, 130).

Besides the notable influence of Russia and China in the region, a number of other states, including Turkey, Iran, India, Japan or South Korea (Cornell and Starr, 2019, p. 25) manifested interest towards Central Asia and intervened to a lesser degree in the region. Of these, Turkey and Iran stand out with more regional influence. Turkey unsuccessfully tried to promote the idea of a common identity with Central Asia after 1991. Even though its political influence is limited, due to divergent foreign and domestic interests and policies, it is still present in the region, especially in the business, education and culture sectors (Sasley, 2010, pp. 191-213). Iran employed a policy of "prudent pragmatism" (Pahlavi and Hojati, 2010, p. 235) in Central Asia, by engaging in the development of the regional interconnectivity, with the aim of escaping the American containment, but at the same time accommodating Russia's interests. Its involvement in CA focused on bilateral trade, while its political influence remained limited (Ibidem, pp. 222, 237).



Turning towards the major Western actors involved in Central Asia, the US military presence in the region was one of the most influential. Following the 9/11 terrorist attacks, the US agreed with all the states of Central Asia for different forms of cooperation or access to military bases. Two of the most important agreements were concluded with Uzbekistan, for access at the Karshi-Khanabad (K2) air base, and with Kyrgyzstan, for the Manas air base, as part of the US operations in the “war on terror” (Cooley, 2012, pp. 31, 32).

Besides the military involvement, the US engaged also in promoting democratic and human rights values, as it is depicted by its Silk Road Strategy Acts of 1999 and 2006 (Fumagalli, 2010, p. 181). Nonetheless, the issue of human rights was often subordinated in US’ approach towards Central Asia, as it could hamper local regimes’ willingness for security and military cooperation (Cooley, 2012, pp. 49, 50). Uzbekistan received a special attention from the part of the US, benefitting of aid packages and also of a Strategic Partnership, signed in 2002 (Clarke, 2010, p. 129). The most prominent US involvement in Central Asia took place until 2005, being characterized mainly by its focus on the security dimension (Fumagalli, 2010, p. 177). In 2005, the US was evicted by Uzbekistan from the K2 air base, marking the beginning of a period of decline for the US engagement with Central Asia, which continued with the 2009 withdrawal request from Kyrgyzstan’s Manas airbase³. Later, the Obama administration decreased the US engagement in Central Asia, as a side-effect of the partial withdrawal from Afghanistan (Kaczmarek, 2015, p. 87). Another important US initiative for the region is the C5+1 dialogue platform, which acts as a framework for addressing challenges faced by the Central Asian states and the US. The first meeting took place in 2015, in Samarkand⁴.

Since 2002, the EU steadily increased the level of importance attached to Central Asia, reflected also through a gradual political approach. A prime step was to adopt the “Strategy Paper 2002-2006 & Indicative Programme 2002-2004 for Central Asia” (Cornell and Starr, 2019, p. 22), in 2002 and to create the position of Special Representative for Central Asia in 2005 (Voloshin, 2014, p. 53). These actions were subsequently followed by the adoption, in 2007, of the Central Asia “Strategy for a New Partnership” (Cornell and Starr, 2019, p. 22). The Strategy went through two major reviews in 2012 and 2015, which highlighted EU’s growing interest for Central Asia, for which amounted EU’s intent to diversify its energy resources, in the light of the difficult energy relations with Russia, and the need for stability in Central Asia (Ibidem, pp. 23-33). Finally, in 2019, the EU renewed its Strategy for Central Asia. Through its political endeavour towards the region, but also on the background of the US military withdrawal, the EU became the most

³ Eurasianet (2009), *Kyrgyzstan: The United States Receives Formal Air Base Eviction Notice*, 20 February (retrieved February 10, 2020, from <https://eurasianet.org/kyrgyzstan-the-united-states-receives-formal-air-base-eviction-notice>).

⁴ U.S. Department of State (2017), *C5+1 Fact Sheet*, 22 September, Washington (retrieved February 10, 2020, from <https://www.state.gov/c51-fact-sheet/>).



engaged Western actor in Central Asia (Ibidem, pp. 9, 66) and became regarded as a “counterpoise” (Efegil, 2010, p. 72) to the influence of other actors in the region.

Unlike the approach of the Central Asian neighbour states towards the region, and to a large extent also that of the US, which can be defined generally in hard security terms, EU's approach to the region is based on norms and values (Cornell and Starr, 2019, p. 24). Though, the influence exerted by EU in this respect confronts a series of limits in the regional ideational context. Efegil argues that the EU's and Central Asian states leaders' understandings of security diverge, often in an incompatible manner. For the Central Asian states, who gained their independent statehood only in 1991, after a long experience of totalitarianism, the notion of security is defined by the survival of the regime. Therefore, the liberal democracy values promoted by the EU can be regarded, locally, as security challenges. On the other hand, the EU regards the “decorative democracy” in the region as a source of insecurity (Efegil, 2010, p. 81). Moreover, the Central Asian states inherited, based on their historical past, legal cultures which have at their centre the primacy of a strong individual, the leader, and a well-defined hierarchy built on clan relations. In such a context, the local meaning of the “rule of law” came to suggest the preservation of this order (Kangas, 2018, p. 29). Therefore, confronted with the Western criticism for their authoritarian regimes, the CA states tend to balance the EU (but also US/NATO) influences with Russia/China and the CSTO/SCO (Efegil, 2010, p. 81). Such an approach from the part of the Central Asian states can be regarded as a “multi-vector” tendency in their relations with the great powers. Being interested in preserving their independence, without falling under the dependency of a great power, they tend to engage in balancing actions (Cornell and Starr, 2019, pp. 25, 26).

At the same time, there can be identified perspectives on regionalization at the CA level. Such tendencies are depicted by the various summits held by the leaders of the Central Asian states, and by their declared commitment towards regionalization (Cornell and Starr, 2019, p. 11; RFE/RL's Kazakh Service, 2018). Even though a high level of regional cohesion is distant, these evolutions can be regarded in line with neo-liberal values of interdependency promoted also by the EU, through its multilateral approach to the region (Cornell and Starr, 2019, p. 49).

Overall, the political context of Central Asia bears a heavy influence from Russia and China, which capitalize on their proximity to the region. Russia exerts more influence in the political and military fields, while China, after the 2008 economic crisis, has taken the lead in the economic and energy fields. In this context, EU's interest towards Central Asia went through a gradual positive evolution, intensifying its regional initiatives since 2002. Nonetheless, the influence of Russia and China in the region, as well as the ideational context and perspectives upon security, can have a limiting effect on EU's influence.



2.2. Presence

EU's influence, on which its presence relies at the level of Central Asia, stems from several factors. Among these are the perceptions of success towards it, and economic factors, the size of its market luring third parties which seek privileged access to it (Vogler and Bretherton, 2013, p. 377).

One of the special programmes of the EU for Central Asia, which enjoyed success at the level of the region, is the Border Management Programme for Central Asia (BOMCA). Launched in 2003, BOMCA is fully-funded by the EU and seeks to enhance regional security, by combatting illegal trafficking and easing trade. BOMCA is designed on a multi-year phase structure and, during the period 2003-2014, the programme was allocated with over €33.6 million (Voloshin, 2014, p. 56). The last phase of the programme, the 9th, started in 2015 and was extended until the end of April 2020, with a total budget of around €6.5 million⁵. Since 2003, through BOMCA, the EU offered assistance for border management, such as guards training, gear and infrastructure at the border crossings, mainly along the Tajik-Afghan and the Kyrgyz-Kazakh borders. While other programmes which promote democracy and human rights are perceived reluctantly by most of the CA states, BOMCA was well received due to its anti-trafficking, border capacity building and overall security agenda (Gavrilis, 2009, pp. 1-4). Alongside BOMCA, which was motivated also by the need to cut the supply of drugs from Afghanistan, works also the Central Asia Drug Action Programme (CADAP), which focuses on the demand side of the drug policy. During its 6th phase, started in 2015, CADAP was implemented by institutions from a group of EU states⁶.

On the other side, regarding the normative influence of the EU towards the Central Asian states, Georgy Voloshin argues that Brussels' efficiency has been limited, failing to promote its influence in issues such as democracy and human rights (Voloshin, 2014, p. 72). Of the five CA states, Kyrgyzstan is the one which seems the most influenced by EU's normative agenda (Cornell and Starr, 2019, p. 45). This position is also reflected by the freedom scores provided by Freedom House⁷, as Table 1 shows.

Kyrgyzstan also departs from the other Central Asian states on the 2019 aggregate score, having 38 points, in contrast with Turkmenistan which has 2 points, Uzbekistan and Tajikistan which have 9 points each, and Kazakhstan 22 points⁸. Also, as Bretherton and Vogler point, due to their remoteness from the EU, there is no prospect of accession for the Central Asian states, fact which limits EU's ability to exert normative influence upon them (Vogler and Bretherton, 2013, p. 377).

⁵ BOMCA (2020), *Overview* (retrieved February 4, 2020, from <https://www.bomca-eu.org/en/programme/overview>).

⁶ CADAP (2020), *About us* (retrieved February 4, 2020, from <http://cadap-eu.org/en/about/>)

⁷ 1 means most free, and 7 least free.

⁸ Freedom House. (2019), *Freedom in the World Countries* (retrieved February 4, 2020, from <https://freedomhouse.org/report/countries-world-freedom-2019>)



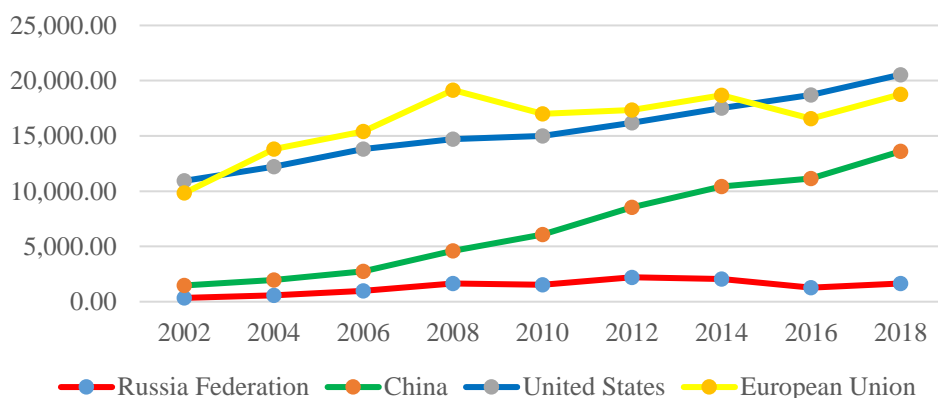
Regarding the economic influence, the EU ranks well among the main actors involved in Central Asia. Concerning the overall economic performance, measured in the size of the GDP, of the major actors involved in Central Asia, the EU held the prime position up until 2015, when it was surpassed by the US⁹, as Figure 1 shows.

Table 1. Comparison of freedom in the world scores of the Central Asian republics

| | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 | 2016 | 2018 |
|---------------------|------|------|------|------|------|------|------|------|------|
| Kazakhstan | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 6.0 |
| Kyrgyzstan | 5.5 | 5.5 | 4.5 | 4.5 | 5.5 | 5.0 | 5.0 | 5.0 | 5.0 |
| Tajikistan | 6.0 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 6.0 | 6.5 | 6.5 |
| Turkmenistan | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Uzbekistan | 6.5 | 6.5 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |

Source: Freedom House (2019)

Figure 1. Graph presenting the GDP evolution of Russia, China, the US and the EU in the 2002-2018 timeframe, in trillion US\$



Source: The World Bank (2020)

Though, in 2017 the EU remained the main overall trade partner and investor of Central Asia, amounting for 30% of the region's total trade, and investing 63 billion euro (Russel, 2019, p. 3). Among the EU member states (EUMS), Germany held the largest share of trade with Central Asia (Auswärtiges Amt, 2010, p. 5). EU's position is challenged in the last years by China, which increased its trade with the region in the light of its BRI project (Bhutia, 2019). Nonetheless, as these numbers

⁹ The World Bank. (2020), *DataBank World Development Indicators* (retrieved February 1, 2020, from <https://databank.worldbank.org/indicator/NY.GDP.MKTP.CD/1ff4a498/Popular-Indicators>).

show, despite losing the prime position on the global scale of economic size, the EU holds one of the most important places in trade with Central Asia, which offers it influence in economic terms. Moreover, the economic ties established by the EU with the states of Central Asia are more important as they offer them a means to diminish their dependence on Russia (Voloshin, 2014, p. 30).

Another relevant aspect regarding EU's presence concerns the ways in which it is perceived in Central Asia. Although surveys are difficult to conduct in the region, studies suggest that Russia is perceived as the most influential actor in Kazakhstan, Kyrgyzstan and Tajikistan, followed by China in Kazakhstan and Kyrgyzstan, and Iran in Tajikistan, EU being on the third place. In contrast, in Kazakhstan, local elites identify more with Europe than with Russia. Also, the EU enjoys less visibility than individual member states, such as Germany, France or Italy (Peyrouse, 2014, pp. 5, 6).

2.3. Capability

Bretherton and Vogler consider the signing of the EU treaties, by the EU member states, as a commitment towards the EU values. Among them there are sustainable development, democratic governance or the rule of law (Vogler and Bretherton, 2006, p. 28). At present, although there can be observed deviances in the cases of Poland and Hungary, it can still be argued that the EU states are committed towards the external diffusion of the values expressed in the treaties. Nonetheless, concerning the observance and diffusion of such values at the level of Central Asia, there were some discrepancies between the EU and some of the member states during the studied period. EU's first interactions with the states of Central Asia were focused on providing aid with the aim of improving the living conditions and facilitating trade in the region. The signing of the PCA's brought for the first time the normative dimension in EU's approach to Central Asia, which was later consolidated through the 2007 strategy (Voloshin, 2014, p. 21).

Overlooking the issue of EU's efficiency in projecting its normative influence towards the states of Central Asia, some differences can be noticed in the cohesiveness of the observance and support of these values by the member states. Telling for this example is the follow-up of the 2005 Andijan events, in which the Uzbek security forces violently suppressed a large manifestation, determining the loss of lives of hundreds (Ibidem, p. 23). In this context, the EU imposed sanctions on Uzbekistan for its grave violations of human rights and democracy. Though, Germany adopted a "softer line" (Efegil, 2010, p. 79) towards Uzbekistan, due to its interest in keeping its access to the Termez military base (Voloshin, 2014, p. 49; Youngs, 2008 apud. Efegil, 2010, p. 79).

Regarding the internal legitimization of the EU foreign policy towards Central Asia, the 2002 Strategy Paper, a document organizing the EU assistance programs towards the region, was adopted by the European Commission, therefore it can be argued it lacked the full legitimacy of the EU member states. In contrast, the 2007 Strategy of the EU for Central Asia was adopted by the European Council, becoming



an “EU-wide document” (Cornell and Starr, 2019, p. 30) that gained the legitimacy of the states’ governments. In this regard can be perceived also the endorsement of the EU Council upon the 2019 EU Strategy for Central Asia. Being developed at the EU level, between the European Commission and the High Representative of the EU for Foreign Affairs and Security Policy, the EU strategy for Central Asia comes out as a “joint communication” which expresses the main lines of the further EU engagement with the region (European Commission, 2019a). Further on, the Joint Communication is approved by the EU Council, formed by the EU Foreign Affairs Ministers, therefore gaining legitimacy from the EU member states (European Commission, 2019b).

Regarding the actual commitment to the EU involvement in Central Asia, some differences can be observed between the EUMS which have been active even from 1991 in engaging with the region, such as Germany (Auswärtiges Amt, 2010, p. 3), which was also the heart of the 2007 EU Strategy for Central Asia, or France, and other states which are less involved towards the region.

Concerning EU’s ability to identify priorities and formulate policies towards attaining them, the adoption of the two strategies is telling in this regard. At first, European Commission’s 2002 Strategy Paper identified three objectives subsumed to the TACIS programme: security promotion and preventing conflicts; the elimination of political and social tension sources; and the improvement of the “climate for trade and investment” (Cornell and Starr, 2019, p. 29). The 2007 Strategy has a broader character and highlights seven fields of action for the EU involvement towards Central Asia:

- 1) “Human rights, rule of law, good governance and democratization”, aimed at supporting the protection of human rights, and the cooperation upon these issues, by funding more the Rule of Law Initiative and supporting the training of experts etc.;
- 2) “Youth and Education”, aimed at offering support in the fields of primary, secondary, vocation and higher education;
- 3) Sustaining “economic development, trade and investment”, aimed at facilitating the WTO accession for the CA states, but also focus on supporting the INOGATE and TRACECA initiatives¹⁰;
- 4) “Strengthening energy and transport links”, aimed at supporting energy security and highlighting the importance of oil, gas, electricity and water management areas of action;
- 5) “Environmental sustainability and water”, aimed at tackling the major regional environmental issues, among which the use and management of water resources;
- 6) “Combating common threats and challenges”, which addresses issues such as fostering the fight against drug trade, organized crime, but also the issues related to the border with Afghanistan and the instability of the Fergana Valley;

¹⁰ Besides TRACECA, EU launched also the Interstate Oil and Gas Transportation to Europe (INOGATE) initiative, in 1996. INOGATE ended in 2016 (Cornell and Starr, 2019, p. 20)

- 7) “Building bridges: inter-cultural dialogue”, concerned with the freedom of religion and fostering dialogue of the civil society (Council of the European Union, 2007, pp. 7-17).

In contrast to the 2007 strategy, the new 2019 Strategy is more focused, presenting three sets of priorities, under the headings: “partnering for resilience”, “partnering for prosperity”, and “working better together” (European Commission, 2019c, p. 2). Each of them has several subfields. Under the “Partnering for resilience” heading there are “the promotion of democracy, human rights and rule of law” (Ibidem, p. 3) (focused on fighting corruption and stressing good governance), “strengthening cooperation on border management, migration and mobility and addressing common security concerns” (Ibidem, p. 5) (concerned with border security and the importance of countering radicalization, extremism), “enhancing environmental, climate and water resilience” (Ibidem, p. 6) (targeting the reduction of the impacts upon the environment through changes in the linear production type of economy). The second heading, “partnering for prosperity” is composed of four subfields, focused on economic reform, fostering trade inside the region and with other regions, supporting connectivity, and investing in youth and education (Ibidem, pp. 8-14). Finally, the last heading, “working better together”, targets the enhancement of the “architecture of partnership” (Ibidem, p. 14) by involving parliaments and civil societies and promoting the development of the region (Cornell and Starr, 2019, p. 38; European Commission, 2019c, pp. 14-16).

Another relevant difference between the two EU strategies for CA, reflected also by the broader 2016 EUGS relative to the 2003 EU Security Strategy, is the emergence of the concept of resilience, which became an important dimension of EU’s foreign policy approach (Pascariu and Rouet, 2019, p. 12). Relevant to our discussion are the political and societal sides of resilience, which some authors argue that EU should pursue, as less intrusive ways of promoting normative influence towards authoritarian states (Van Gils, 2019, pp. 455-460).

There can be observed a congruence between the objectives stated by the EU through its strategic documents, and the political priorities expressed by the member states active at the level of Central Asia. In this regard, the examples offered by Germany, France or Italy are relevant. Germany is one of the most engaged EUMS in Central Asia, having embassies in all of the five CA states. Through its policy at the level of the region, among Germany’s priorities for Central Asia there are the development of the educational system, enhancing the legal reform and the awareness for human rights, supporting sustainable economic development and fostering trade and investment, and also the extension of energy and transport links, as well as the environment and water, but also tackling common threats and promoting intercultural dialogue (Auswärtiges Amt, 2010, p. 5), thus matching the goals expressed also by the EU. France at its turn expresses support for human rights,



democracy promotion and fighting against poverty, as well as strengthening border security and fighting drug trafficking¹¹, a similar position being adopted also by Italy.

Nonetheless, there can be observed also some divergences of the EUMS from the EU position. Examples in this case are the different approaches of EU and Germany towards the Andijan events, and the different levels of commitment that the EUMS show towards Central Asia, some being more engaged than others in the EU initiatives towards the region (Cornell and Starr, 2019, p. 34).

Concerning the coherence of different policy sectors promoted by the EU at the level of Central Asia, there can be observed a lack of consistency in addressing the issue of human rights and pursuing the energy and trade objectives. Despite the authoritarian nature of the Central Asian states regimes, the EU intensified after 2007/2008 the political cooperation with them. In 2008, bilateral Priority Papers were signed, in order to bring more details on the projects to be undertaken through the Strategy, and meetings between officials took place. Moreover, EU concluded a Memorandum of Understanding on energy with Turkmenistan. These interactions can be regarded as a “softening” of EU’s discourse towards the authoritarian regimes of Central Asia, in the light of gaining more economic benefits in the region (Efegil, 2010, p. 83).

In order to reach its objectives at the level of Central Asia, EU put in place a variety of instruments, ranging from aid instruments to trade and economic ones, both regional and bilateral ones. The first regional instrument employed by EU was the TACIS programme, which was designed to help the states of the post-soviet space, including the Central Asian republics, with economic and technical aid, in order for them to cope with the challenges appeared after gaining their independence. TACIS functioned for over 15 years, up until 2007, and since the 1993 and 1996 regulations, it introduced weak and strong conditionality provisions. Therefore, the aid was conditioned by improvements in democracy and human rights, EU engaging in the diffusion of these norms. Nonetheless, the provisions were often neglected, the EU Council never actually taking the necessary measures against the Central Asian regimes violations (Voloshin, 2014, pp. 25-27). TACIS was succeeded by the Development Co-operation Instrument (DCI), through which, during the 2007-2013 period, were implemented projects on good governance, worth of 25% of the funds (approximately €187.5 million). EU also funded projects in the region through the European Instrument for Democracy and Human Rights and the Non-state Actors and Local Authorities in Development programme. Also, through the 2007 Strategy were introduced the Rule of Law Initiative, Civil Society seminars and the organisation of regular Bilateral Human Rights Dialogues. Even though these instruments provide aid upon conditionality, based on the compliance of the Central Asian states with the normative dimension, the conditionality lacks clear definitions and a coherent methodology to be implemented, which makes unclear the conditions

¹¹ France Diplomatie (n.d.), *Central Asia* (retrieved February 09, 2020, from <https://www.diplomatie.gouv.fr/en/country-files/central-asia/>).



in which the EU would limit the assistance, fact which also led towards it not being applied (Ibidem, pp. 45-47).

Regarding the bilateral instruments, the PCAs are relevant, as the first bilateral frameworks of interaction with the CA states. The first PCAs were set up in the 1990s, with Kazakhstan, Kyrgyzstan and Uzbekistan, while the EU-Tajikistan PCA is in force since 2010. The PCA with Turkmenistan was not ratified by the EU Parliament. The PCAs are to be updated to Enhanced Partnership Cooperation Agreements (EPCAs), some of which are still under negotiation (Russel, 2019, p. 2). At the moment, Kazakhstan enjoys an EPCA, which entered into force on March 1st, 2020¹². One of the most relevant instruments, which seeks to promote EU's normative power, is the GSP+ programme, through which the beneficiary states have "duty-free access for various exports to EU markets" (Russel, 2019, p. 6), conditioned by their commitment to 27 international conventions regarding good governance and human rights, as well as environment protection.

Conclusions

This paper aimed at enquiring EU's actorness at the regional level of Central Asia, by applying the social-constructivist approach provided by Bretherton and Vogler, through their actorness requirements of opportunity, presence and capability. By summarizing the above presented data, several observations can be drawn, thus bringing answers to the research questions.

EU's actorness in Central Asia can be regarded as limited, due to several constraints which act upon it. On the one side, Brussels exerts a fairly important amount of influence in the region mainly through its economic capabilities. Being one of the most important trade partners of the overall Central Asian region, and also overpassing Russia and China in the size of the economy, in terms of GDP, the EU's economic potential can be regarded as attractive for the interests of the Central Asian states. Also, its involvement in the regional security field, through the BOMCA programme, which was well received by the CA states, represents another strong feature of EU's presence in the region. Concerning capability, the EU enjoys several strong points as well. In this regard it is important to highlight the relevance of a cohesive set of values which it seeks to promote to the region, the legitimization of its approach by the EUMS, a congruence between its objectives and those of the EUMS, and the high array of instruments which it uses to interact with the region.

On the other side, EU faces several important limitations towards its actorness in Central Asia. Firstly, the regional political and ideational context doesn't favour EU's presence. Being under the heavy political and energy influence of Russia and China, the CA states often get attracted in the actions of their neighbours, than towards EU's influence. Moreover, due to their understanding of security as regime

¹² EEAS (2020), *Entry into Force of the EU-Kazakhstan Enhanced Partnership and Cooperation Agreement - 1 March 2020* (retrieved from https://eeas.europa.eu/delegations/kazakhstan/75089/node/75089_en).



survival, the states of Central Asia often engage in balancing policies among the main international actors involved in the region. Secondly, based on the non-favourable ideational context described above, EU's normative influence in the region is limited, its diffusion of democracy and human rights values being hardly received in the Central Asian states, save for Kyrgyzstan. Also, despite enjoying a wide range of instruments to act in the region, the EU's approach lacked strong conditionality. Thirdly, another limit is also constituted by a lack of cohesion in the EUMS commitment towards EU's programmes for Central Asia.

Even though EU's actorness in Central Asia faces the above limitations, its strong points show a gradual positive evolution of EU's actorness in the timeframe of the analysis. It can be argued that since 2002, EU augmented its presence in the region, in terms of capabilities, by formulating its objectives in the Strategy for Central Asia, through the multitude of instruments it developed over time, and by opening new delegations in the region. Also, the withdrawal of the US military presence from Central Asia allowed for the EU to become the most important Western influence in the region.

Despite bringing answers to the research questions, the paper is liable to some methodological limitations. The paper used only Western-language sources, without enquiring local Central Asian perspectives. Though, even if this aspect can have a limiting effect on the analysis, the paper focused on the EU and its actorness in the region, aiming to present only the EU side, towards which it offered a perspective. Despite the limitations towards its regional actorness, the EU is one of the three most important actors involved in the region, alongside Russia and China.

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DIGITAL TRANSFORMATION OF TRANSPORT INFRASTRUCTURE: EXPERIENCE OF EUROPEAN AND MOSCOW METRO SYSTEMS

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Abstract

The article is devoted to the consideration of the digital transformation processes of the world's metro systems based on Industry 4.0 technologies. The aim of the study is to determine the social, economic and technological effects of the use of digital technologies on transport on the example of the metro, as well as to find solutions to digitalization problems in modern conditions of limited resources. The authors examined the impact of the key technologies of Industry 4.0 on the business processes of the world's subways. A comparative analysis of the world's metros digital transformations has been carried out, a tree of world's metros digitalization problems has been built, a reference model for the implementation of world's metros digital transformation is proposed. As the results of the study, the authors were able to determine the social, economic and technological effects of metro digitalization.

Keywords: Industry 4.0 technologies, digital transformation, transport, metro

Introduction

The coming era of the digital economy requires a revision of business models, methods of production in all spheres of human life in order to maintain competitive advantages in the world arena. The transport industry is no exception, as it plays an important role in the development of the country's economy and social sphere.

The Metro is a complex engineering and technical transport enterprise, dynamically developing taking into account the prospects for expanding the city's borders, with an ever-increasing passenger traffic and integration into other public transport systems. With the metro development, the increase in the load of passenger

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traffic, the volume of processed information in the management of technological processes is increasing every year, which requires a modification of control technologies - digital transformation (Lapidus, 2015). The experience of the metro systems of world megacities shows that digital technologies are effectively implemented and aimed at automating traffic control, developing unmanned technologies, ensuring security, technological innovations, identifying, implementing and developing promising digital solutions, developing transport infrastructure, increasing the efficiency of the transport system, in this regard, along with the development of innovative digital solutions, it is necessary to study international experience, adapt, deploy successful turnkey solutions and services, taking into account the specifics of the metro in each individual country.

1. Key advantages of digital technologies on transport

1.1. Internet of Things

The Internet of Things (IoT) is a network of various devices interconnected and capable of interaction. The IoT has become an integral part of modern life. A huge number of devices that we use every day have the ability to communicate without human intervention. The IoT provides a huge amount of real-time data on how different vehicles function and are used around the world (Lapidus, 2017).

The development of IoT is not only an increase in the penetration of “connected” devices, but also the creation of a technological ecosystem - a set of technological solutions for collecting, transferring, aggregating data and a platform that allows you to process data and use it for solutions.

The number of “connected” devices in the world is growing (according to industry analysts, their number will reach 20-50 billion units by 2020) and with it - the number of examples of the use of the “Internet of Things” in the economy: energy, industry, housing and communal services, agriculture, transport, health care, etc¹.

In foreign practice, there are successful examples of IoT implementation at the initiative of both the state and business. For example, with the support of the state in the countries of the European Union, South Korea, China and India, smart city technologies are being introduced, which make it possible to increase the efficiency of energy consumption and traffic management. In the UK and the US, large-scale programs have been implemented to introduce smart meters to remotely control energy consumption in households. In Russia, IoT technologies have a number of features and application restrictions associated with the economic, technological, legislative, geographical and cultural specifics of the country.

¹Presentation “Internet of Things (IoT) in Russia. The technology of the future, available now”(2017), Electronic resource (retrieved from <https://www.pwc.ru/publications/iot/iot-in-russia-research-rus.pdf>).

IoT allows businesses to gain a competitive advantage by reducing costs and developing new sources of income. The constant and increasing exchange of data requires the development of new services that should connect us to the physical world around us. These services must also be built on completely new business models and provide new financial flows. With the help of the Internet of Things, the interaction of objects, the environment and people will be intertwined in many ways, which promises to make the world “smart” - more comfortable for humans.

The use of IoT for the digitalization of technological processes in the metro will provide and combine the main trends:

- improving customer service;
- reducing the cost of maintaining computing power and operating equipment;
- development of cloud technologies and Big Data (Vajgend, 2018);
- reducing the cost of data transmission;
- growth of labor productivity;
- the ability to increase the number of “connected” devices.

The usefulness of the implementation and development of IoT in metros lies in the use of visualization tools and the expansion of the functions of using mobile devices, which, in symbiosis, will improve the quality of passenger transportation. Also, with the help of IoT, it becomes possible to quickly identify serial flaws and analyze the trip.

Adjusting timetables and providing personalized services across modes of transport are helping crowded cities encourage public transport instead of personal transport and reduce traffic congestion. Technology can reduce costs and speed up service delivery. The issues of using the capabilities of “smart” systems in areas where extreme weather events, for example, floods, can cut off entire settlements from the mainland and block the operation of transport are being developed.

The road infrastructure includes many components - transport itself, security systems, electronic boards, surveillance cameras, and so on. Technologies that connect all these elements together are sensors and sensors (for example, GPS), as well as wireless data networks: Wi-Fi, Bluetooth, 3G, 4G, NB-IoT.

The organization of a transport network in metropolitan areas would be simply impossible without the IoT. The data collected by the turnstile sensors allow not only assessing the congestion, but also predicting the hourly passenger traffic. Metro trains also transmit information to a single server, which allows improving track parameters - for example, in this way it is possible to adjust train schedules in real time, reduce waiting intervals, and inform passengers about alternative routes. And all this is possible with minimal human involvement - in London, a network of sensors transmitting information to the cloud center independently monitors the entire underground transport system, including escalators, elevators and rolling stock. At the first signs of a malfunction, an alert is automatically triggered in the system, which indicates the need for preventive repair or emergency measures.

For example, the Moscow Metro has been operating since 1935 and during this time the infrastructure on the first lines (Sokolnicheskaya, Zamoskvoretskaya, Arbatsko-Pokrovskaya, etc.), as well as on the first lines of the London Underground



(Hammersmith and City, District, Ring, etc.) etc.), has reached its obsolescence. The risk of a system going out of control is enormous, as is the danger of inefficient operation. Therefore, the introduction of technologies based on the Internet of Things in the coming years will make it possible to modernize the maintenance of the transport system, improve travel conditions and increase the efficiency of the metro. Transport of London (TFL) is implementing IoT in the London Underground². The project has installed sensors on escalators, elevators, ventilation systems and subway tunnels. The result is monitoring of public address systems and video surveillance. In addition, the project has begun work to move isolated legacy applications to an improved cloud environment, making it easier to manage, monitor, and automate individual tasks.

In the metro, the IoT will be able to digitally transform data on the operation of the Infrastructure Directorate's operational divisions: energy supply, electromechanical and escalator services, track and artificial structures, signaling, centralization and blocking services, forming a large-scale centralized system and digital interconnection of these divisions. This will allow planning the utilization of capacities, in particular, energy. However, it should be noted that at present in the information technology market in Russia, the "Internet of Things" is at an initial level (Dobrynin *et al.*, 2016).

In the power supply sector, the widespread introduction of intelligent technologies, especially taking into account the length of linear facilities, can lead to increased reliability and lower operating costs. This will allow you to switch to network management "as per condition", and not to carry out repairs in accordance with strict regulatory terms.

In the generation of elements of the "Internet of Things", asset management systems of the ICS class are also used. They are installed in various combinations at all power plants in Russia and allow remote control and information on the operation of key systems. In the context of the Moscow Metro, as a major consumer of energy resources, the capabilities of the Internet of Things will not only save electricity, but also receive data on current costs (smart meters) in real time (Kranc, 2018).

In Europe, the task was to provide 80% of consumers with "smart meters" by 2020, which amount to 200 million electric and 45 million gas meters. In the United States, each state independently determines the policy for their implementation, but the number of "smart meters" in the country as a whole is already approaching 50% of the total (in six states, the share of "smart meters" was more than 80%)³.

The Internet of Things has penetrated much deeper into the transportation industry. In the industry, where the length of various types of tracks exceeds 1.6 million km., And the number of freight transport (road, rail, etc.) - 7 million units, in principle, it is impossible to do without remote monitoring (Public Transport

²CISCO (2019), Electronic resource (retrieved from <https://www.cisco.com/>)

³Smart manufacturing (2020), Electronic resource (retrieved from <https://iot.ru/wiki/umnnoe-proizvodstvo>).



Magazine, 2018). The “Internet of Things” is also used by the state to organize the transport system of Russia.

Cloud technology will also lead to platform solutions, which in turn will lead to new business models such as virtual forwarding. It will also contribute to the scalability and standardization of processes (Sutherl *et al.*, 2018). Therefore, in the world, logistics companies plan to direct 5% of their revenues to the digitalization of logistics. In logistics, the introduction of IoT technologies allows solving such urgent problems for the industry as reducing the cost of freight and delays in transit, increasing the transparency of transportation (including using RFID tags) and minimizing the influence of the human factor. The vehicles connected to the Internet and remote monitoring of the vehicle fleet will reduce operating costs by optimizing the repair and maintenance of equipment. In addition, the “uberization” of cargo transportation is widespread, which makes it possible to refuse the services of forwarding companies. At the same time, the potential for the implementation of the Internet of Things in the transport industry in Russia is very significant - both in railways, pipeline and other modes of transport. There are three markets for the application of IoT technologies:

1. Mass market B2C. This market is receptive to new innovative technologies and products based on these technologies. Consumers are shopping on trends. In the medium term, products based on “cloud” IoT solutions are expected to be in demand, for example, monitoring public transport, monitoring the load of public infrastructure (roads, subways, etc.), etc. Such products will be monetized through the sale of related services, advertising, and gaining access to large amounts of user data. The solutions of this market are mostly focused on “smart insurance”, “smart home”, monitoring of vital functions, telemedicine.
2. Market of commercial companies B2B. This market is more inert compared to the B2C market. Such a market is characterized by time for analyzing the external environment, realizing the need to apply new technologies, agreeing on investments and implementing projects. In Russia, there are a number of factors that complicate decision-making in favor of IoT, since a return on investment is not expected in the horizon of 2-3 years. Many Russian companies are not ready to increase flexibility, because in addition to the lack of return on investment in the short term, this requires a culture of transformation of the team, business partners and contractors.
3. Market for government agencies (B2G). Such a market has the maximum economic potential for the introduction of IoT technologies in terms of improving energy efficiency and reducing the cost of maintaining industrial assets. The main reason for the inertia of the market is a worn-out infrastructure, which requires high costs for renovation, repair and maintenance.

The IoT has entered a period of significant change in 2019. Promising trends that prevail in the IoT market:

1. Boundary calculations. Devices will become even more powerful, providing local data processing and artificial intelligence capabilities. This will reduce the amount of data transfer and dependence on cloud computing, as well as provide



- more flexibility. The impact will be on industries where an immediate response is needed based on sophisticated real-time data analysis (manufacturing and community activities), and where cloud communications may be limited.
2. Increased competition in the field of information security. The rivalry of large companies in the development of the most efficient and secure IoT solutions. The IoT market will focus on addressing key security challenges and addressing the Internet of Things vulnerabilities that previously hindered technology adoption.
 3. Dominance of large companies. Competition between tech giants like Amazon Web Services (AWS), Microsoft and Google is expected to intensify as large IoT platforms become commonplace. These companies will be able to capture most of the market and continue to expand their area of influence at the expense of adjacent small organizations, since they will be forced to focus on niche areas to survive.
 4. The growing use of “smart devices”. Especially relevant for the automotive industry. Market participants will implement IoT technologies to provide vehicles with data collection and monitoring, as well as their interaction with smart city services and other transport facilities.
 5. 5G helps to strengthen the interconnection of the elements of the modern world. This will drive IoT innovation further and provide the ability to collect, analyze and manage data in near real time.

According to the forecasts of the international consulting and audit network PricewaterhouseCoopers (PwC) in Russia, by 2025 the cumulative effect of the implementation of the Internet of Things in 6 segments (electricity, healthcare, agriculture, transportation and storage of goods, segments of the smart city and smart home) will be about 2.8 trillion. rubles, of which 542 billion rubles. in logistics, of which 39 billion rubles. - connected transport (railways)⁴.

1.2. Mobile applications

Another equally important technology generated by the digital economy is mobile applications. London Underground passengers receive real-time travel information (including train movements) using the Tube Map mobile application (see Table 1), which allows them to plan trips and perform many other operations. Since 2014, London's passengers have been able to pay for travel via smartphones that support the NFC short-range communication standard. The new cloud solution is expected to further enhance the passenger experience through improved infrastructure planning, process automation and proactive fault detection (Mesenbourg, 2018).

⁴Presentation “Internet of Things (IoT) in Russia. The technology of the future, available now”(2017), Electronic resource (retrieved from <https://www.pwc.ru/publications/iot/iot-in-russia-research-rus.pdf>).

Table 1. Applied mobile applications in subways

| № | City, Country | Mobile applicationname | Passenger rating, 5-point scale | Number of survey participants, thousand people |
|----|------------------------------------|--|------------------------------------|---|
| 1 | Moscow, Russia | Moscow metro | 4,7 | 28 |
| 2 | | Yandex.Metro - metro map and route times Yandex | 4,5 | 141,9 |
| 3 | SaintPetersburg, Moscow, Russia | Metro and transport with Citymapper Limited | 4,5 | 68,5 |
| 4 | Minsk, Belarus | Minsk - guide and travel guide TingBY Team | 4,5 | 4,03 |
| 5 | Kiev, Ukraine | Kiev Metro Guide KorsTech Inc. | 4,4 | 2,5 |
| 6 | Poland | Jakdojade: public transport CITY-NAV sp. z o.o. | 4,5 | 64,6 |
| 7 | Helsinki, Finland | HSL - Tickets, route planner and information Helsingin seudun liikenne | 3 | 0,96 |
| 8 | | SL:Journey planner and tickets AB StorstockholmsLokaltrafik | 2,6 | 2,4 |
| 9 | London, GreatBritain | Tube Map London Underground Visual IT Limited | 4,3 | 12,9 |
| 10 | | Tube Map – TfL London Underground route planner Mapway | 4,2 | 13,3 |
| 11 | Berlin, Germany | BVG FahrInfo Plus eos.uptrade GmbH | 4,1 | 16,1 |
| 12 | Germany | DB Navigator Deutsche Bahn | 4,0 | 125,3 |
| 13 | NewYork, USA | My Transit NYC Subway, Bus, Rail (MTA) My Transit™ | 4,7 | 20,6 |
| 14 | | New York Subway – Official MTA map of NYC Mapway | 4,4 | 8,2 |
| 15 | Paris, France | Next Stop Paris - RATP | 4,5 | 13,9 |
| 16 | | RATP : Subway Paris | 3,5 | 54,3 |
| 17 | Tokyo, Japan | Tokyo Subway Navigation 東京地下鉄株式会社 | 4,2 | 3,5 |
| 18 | Japan | TABIMORI | 4,4 | 545 |
| 19 | | Japan Travel –Route, Map, JR NAVITIME JAPAN CO., LTD. | 4,5 | 5,3 |
| 20 | | Japan Official Travel App Japan National Tourism Organization | 4,7 | 3,8 |
| 21 | SouthKorea | KakaoMetro - Subway Navigation Kakao Corporation | 4,1 | 42,7 |
| 22 | | 지하철정보 :메트로이드HDmetroid | 4,2 | 14,9 |



| | | | | |
|----|----------------------|---|-----|-------|
| 23 | | 지하철종결자 : Smarter Subway TeamDoppelGanger | 4,4 | 75,9 |
| 24 | Singapore | Singapore MRT and LRT FREE RoarApps | 4,4 | 4,7 |
| 25 | SaoPaulo, Brazil | São Paulo Metro - Official | 4,3 | 7,2 |
| 26 | Alma-Ata, Kazakhstan | Almaty-Metropolitan | 3,9 | 0,9 |
| 27 | Copenhagen, Denmark | Rejseplanen Rejseplanen A/S | 4,1 | 17,2 |
| 28 | Canada | Canadian Mortgage App Bendigi Technologies Inc. | 4,7 | 2,5 |
| 29 | Madrid, Spain | Transporte Madrid - EMT Interurbanos Metro TTP JSVM | 3,2 | 2,2 |
| 30 | | Metro de Madrid Oficial Metro de Madrid, S.A. | 4,0 | 5,5 |
| 31 | | MAPS.ME –Офлайнкарты | 4,5 | 995,8 |
| 32 | Aroundtheworld | GPS Navigation & Maps – Scout | 4,3 | 57,1 |
| 33 | | Google LLC Maps: navigation and public transport | 4,3 | 9713 |
| 34 | Aroundtheworld | Transit: Real-Time Transit App Transit App, Inc. | 4,2 | 46,6 |
| 35 | | Moovit Transportation App | 4,4 | 673,4 |

Source: Google.Play.

In the future, passengers with disabilities will be able to subscribe to an online service informing about the availability of certain services, for example, an escalator or an elevator. The cloud-based approach has a much broader scope: it will enable aviation, transport and logistics companies to improve their performance in the face of increasing regulatory requirements, cost burdens and competition.

1.3. Artificial intelligence and smart solutions

All industries - from the financial sector to retail, from mechanical engineering to healthcare, are striving to adopt artificial intelligence technologies. Public transport is no exception. It is here that smart technologies extend not only to technical solutions, but also have a social orientation.

The UITP Asia-Pacific Research Center conducted a study on the role of artificial intelligence in the development of public transport. The main objectives of the project, which began in December 2017, are to analyze the use of artificial intelligence in the sector, to study how technology can contribute to the development of the industry (including new opportunities for staff training), to study trends in technology adoption in the industry.

Artificial Intelligence is designed to improve productivity and set high standards for service delivery. How it will be used in the field of urban public



transport largely depends on the policy of the transport company - whether it is planned to use artificial intelligence to increase its competitiveness or expand its market share (Kazakov *et al.*, 2016).

When implementing smart solutions technologies, organizations need to understand what the employees who are assisted by artificial intelligence are capable of, and make development plans based on these abilities. The resource-based approach involves the transfer of personnel from performing routine tasks to a higher functionality, where creativity, empathy, and parallel thinking are present. In this sense, people will be ahead of artificial intelligence for a long time, if not always.

Currently, the city of Moscow, as one of the brightest examples of modern cities in the world with a complex infrastructure, where transport interchange hubs (TPU) are gaining relevance and development, does not do without the introduction of smart transport technologies, and this is especially true of the metro, as the most popular type of public transport. Most experts adhere to a complement strategy, where computer technology complements the human work, but does not replace it. High requirements for the safety of the transportation process, a large number of objects of control and management, the need for a quick, prompt response in response to constantly changing conditions in a huge, geographically distributed system make this type of transport truly intelligent. This is especially true of the Moscow Metro, as the main form of public transport. Man and artificial intelligence have to learn to work with each other.

For example, an urgent task for the Moscow Central Circle is to enter electric trains into the schedule in the event of various disruptions and delays in movement, which ensures prompt recalculation of the schedule of electric trains on the entire ring and selects the optimal solution to eliminate the backlog. To help dispatchers, it is necessary to develop an automated conflict resolution system based on multi-agent technologies.

Meeting the spirit of the times, in France, Systra offers the concept of a “smart” station, which implies online communication with the external and internal environment using sensors, CCTV cameras, as well as setting up information systems, lighting, ventilation (Public Transport Magazine, 2018). This technology lies in the same plane as the concept of a smart city. It promotes the development of new modes of transport and changes in the usual behavior of passengers. With the help of this concept, the integration of the metro into urban life is laid, to move away from the closed functioning of the transport circuit. Here the transition to a more friendly (less stressful) environment in relation to the consumer (passenger) is laid, as well as the issue of improving navigation and redistribution of passenger traffic. In real time, the work of the station elements that influence or control the passenger flow is adjusted - navigation elements, escalators, elevators, entry and exit groups.

To create a friendly environment, Systra has adopted an environment design methodology based on 3 main steps:

- 1) determine the parameters of the room and its functional load;
- 2) design the environment for the needs of various groups of passengers inside the premises;



- 3) ensure the coordination of the design of the room with the general design of the TPU.

An indicator of successful work is the behavior of passengers, when they, being unaware of the different “settings” of different TPU rooms, moving from one room to another, feel comfortable in each of them. The station or TPU should become a living place, where there would be a desire to come not only for the sake of changing to another mode of transport. An offer for the consumer (passenger) of a safe and comfortable environment in line with the modern trend - the desire of a person to be “flexible”, i.e. prefer to decide for themselves how they spend their time at the station.

Passengers note the demand for TPUs built by the Dutch agency ProRail. In 2018, 72.8% of passengers rated TPU services 7 out of 10, while in 2014 this figure was 65.7%. But TPU Nuevos Ministerios in Madrid pays special attention to the human factor. At the station, which occupies 7,600 square meters on five levels, there is a transfer to 3 metro lines and 5 directions of the commuter train. There are 12 elevators, 47 escalators, 30 ticket machines at the service of passengers. The station is equipped with tactile surfaces for the blind and visually impaired. Corridors and passages are wide enough for easy passage of passengers. Travolators on long passages facilitate the rapid movement of passengers and avoid congestion. Passages through the turnstiles are of standard width, there are also increased widths for passengers with luggage and disabled people. This is important because Nuevos Ministerios transfers to the metro line towards the airport. Passengers with bulky luggage pass without hindrance (Public Transport Magazine, 2018).

A new security system is being installed in the metros of developed countries of the world: cameras that scan passengers' faces, digital video analytics, thermal imagers and other accessories that will allow law enforcement agencies to monitor the movements of any of the passengers and be aware if a citizen of interest appears in the subway. Intelligent video surveillance systems will automatically receive notifications about emergency situations - from a simple bag forgotten in the lobby to smoke. The number of passengers in each seat is estimated by a video camera, the data is processed in a special center - the conventional “brain” of TPU. In case of an unauthorized hit of any object on the path, the camera “understands” this and raises an alarm (Lapiduset *al.*, 2016).

1.4. Smart manufacturing

The concept of smart manufacturing was formed quite recently and can be used to describe the implementation of robots, information technology, or any other innovation in production. One of the fundamental definitions of smart manufacturing was formulated by scientists from the University of Stuttgart - it is a production system that can take into account the context and help people and machines in solving their problems, thanks to the large-scale implementation of information and



communication technologies in the workflow management system (Smart manufacturing)⁵.

Smart manufacturing is inextricably linked to “Industrie 4.0” - a concept that appeared in the German government's strategy for the development of high technology, which involves the computerization of production. Industry 4.0 is a modern trend towards automation of production with widespread use of cloud technologies, the Internet of things and cyber-physical systems. Thus, the arrival of Industry 4.0 is impossible without the massive spread of smart manufacturing.

Many associate the development and establishment of Industry 4.0 with the fourth industrial revolution. Interestingly, the concept of the fourth revolution already exists, despite the fact that the third has not yet been completed.

Smart manufacturing involves the use of the following technologies:

- smart machines that can exchange information with other production systems and work with a high degree of autonomy, and advanced robots;
- industrial Internet of Things (IIoT). Devices and technologies that provide an Internet connection for all machines in production;
- cloud services that provide convenient and continuous network access to a common pool of configurable computing resources;
- enterprise integration platforms, the task of which is to receive data from equipment, analyze and aggregate them;
- Big Data technologies

2. Comparative analysis of the automation of the world's subways and barriers hindering digital transformation of the metro

2.1. The scale of the world's metros digitalization

Automation of traffic control processes plays the most important role in digital transformation of the metro. SAUP M are designed to automate the process of train control, including starting, acceleration, selection of the driving mode on the tracks, braking at platforms in order to improve the accuracy of the schedule.

According to the UITP classification, SAUP M is divided into 4 levels of automation (Grade of Automation):

1. GoA1 - manual control of rolling stock with the use of automatic train traffic safety (ATP). The driver controls the movement of trains, the position of doors and other elements;
2. GoA2 - semi-automatic rolling stock control. The driver controls the start of movement and the closing of doors. Automatically following the tracks, stopping at the station and opening doors. Full functionality of the ATP and ATO systems with the train driver in the control cabin is provided;

⁵Smart manufacturing (2020), Electronic resource (retrieved from <https://iot.ru/wiki/umnnoe-proizvodstvo>).



3. GoA3 - automatic control without the direct participation of the driver, but with the presence of the personnel who operate the doors and are able to take control in the event of emergency situations. The ATP and DTO systems are operational;
4. GoA4 - fully automatic control of rolling stock without the participation of any personnel on board (UTO) (Nikul'chikov, 2015).

As of 2016, according to the UITP, there are automated metro lines in 37 cities around the world. The number of such lines is 55, the deployed length is more than 800 km, and the number of served stations is 848. Thanks to the launch of new automated lines, their total length in 2017 was increased to 1000 km, lines were built in Beijing, Istanbul, Santiago, Seoul and Kuala Lumpur, which added to the total number of cities and lines where the metro operates using innovative train control technologies. In 2018, the total length of automatic metro lines was 1,030 km. By 2025, the rapid growth in the total length of automated metro lines is expected to continue, which will amount to about 2,300 km.

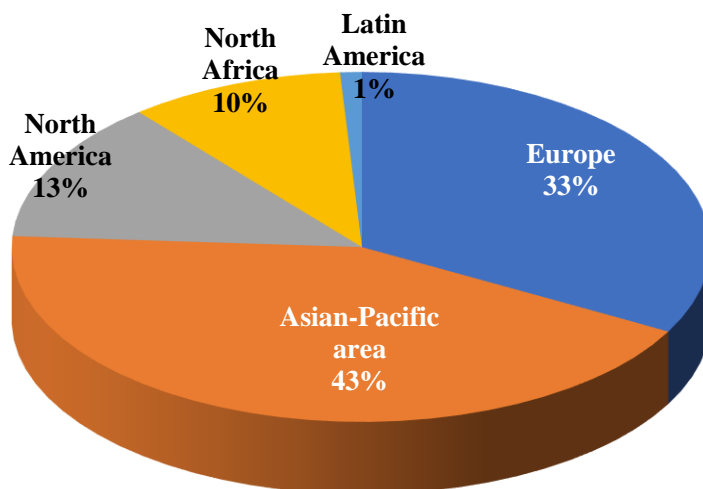
The first subway, where train traffic was organized without the participation of a driver, opened in 1981 in the city of Kobe, Japan. Regional analysis shows that the share of fully automated lines is noticeably higher in the Middle East and Europe, where they occupy 15% and 10% of the total length, respectively. In Asia - the leading region in the implementation of automated systems in the metro - the share of such lines is only 5%. Asia (43%) and Europe (33%) have 76% of the world's automatic metro. Only 13% are in North America, even though the region can be described as a pioneer in automation. Over the past decade, Latin America (1%) and the Middle East (10%) have become actively involved in this issue, with the latter showing the highest rates of development (see Figure 1).

50% of the automatic metro infrastructure is located in 4 countries: France, South Korea, Singapore and the United Arab Emirates (UAE). France continues to lead with a share of 16%, South Korea is approaching these indicators, reaching 15%. The three cities with the longest automatic lines are not in Europe. These are Singapore (93 km), Dubai (80 km) and Vancouver (68 km).

Initially, the usage decisions were mainly for lightly loaded lines, but in the last decade they have been increasing for medium to heavily loaded systems.

The busiest metro lines in Europe and Asia - with the exception of the 4th line in São Paulo in Latin America: with more than 32 thousand passengers per hour, it is one of the busiest lines in the world. Over the next 10 years, the introduction of automated systems in the metro is mainly concentrated in the Middle East, Europe and Asia - together they account for 88%. Only 11% of the planned growth will come from Latin America.



Figure 1. Distribution of automated metro systems in the regions of the world

Source: authors' representation.

In Europe, 26% of the length of new lines to renovated projects. Following the successful conversion of the U2 line in Nuremberg in 2009 and the L1 in Paris in 2012, European cities have announced preparations for metro conversion projects in the next decade: Glasgow - G. Subway line, London - Docklands, Lyon - LA & LB, Marseille - L1 & L2, Paris - L4, Vienna - U5.

The London Underground is expected to become fully automatic by 2022. By 2025, Asian countries will have 33% of the total length of modern automated metro systems, 30% in Europe and another 25% in the Middle East.

Most subways in Russia have implemented the so-called "simple" (Traditional) first-level systems with manual control, equipped with ALS-ARS (ATP - Automatic Train Protection). If the permissible speed is exceeded, the train is forced to stop. Separate lines of St. Petersburg, as well as the line of the Kazan metro, equipped with security and driving systems, to the second level systems (road train operation - ATR + ATO). In them, the driver controls the arrival and departure of the train from the station, takes control in emergency situations. So, in the complex system "Movement" developed by the St. Petersburg "Research Institute of Precision Mechanics" in the automatic mode, when approaching the station, it can manually urgently reduce the speed of the train, for example, in the event of a person falling on the track. The driver also has access to the function of confirmation (permission) of departure from the station in case of emergency (when the doors are closed).

On the trains of the third level Driverless Train Operation - DTO (Driverless with onboard staff - without a driver, but with the presence of personnel on board)



often there is not even a driver's workplace, nevertheless, there are specially trained personnel. In emergency situations, specialists can manually remove the damaged train from the line under the control of the security subsystem or without its participation.

Level 4 systems have become widespread over the past 15 years. More than 50 Unattended Train Operation - UTO (Driverless Unattended) projects have already been implemented in 25 cities around the world. This number is expected to increase fivefold over the next ten years. Today systems of the third and fourth levels are not used in Russia. In 2011, for the first time in the CIS, the Korean system of the third level ATDP SVTS-class (Communication Based Train Control - control of trains using telecommunication technologies, in particular, a radio channel with Wi-Fi of the Hyundai-Rotem corporation) was implemented. It has been introduced on the line of the Almaty Metro. The system of the fourth level of SVTS-class of the French company "Alstom" is included in the project of the Omsk metro line.

Systems of the second - fourth levels are based on modern hardware and software. They differ in the algorithms for the use of on-board safety equipment and automatic guidance in case of its malfunction. On some foreign lines with the highest level of automation of technological processes, the functions of station attendants are transferred to line dispatchers and automation. In this regard, it is very important that the personnel - dispatchers, "escorts", station attendants - are well trained.

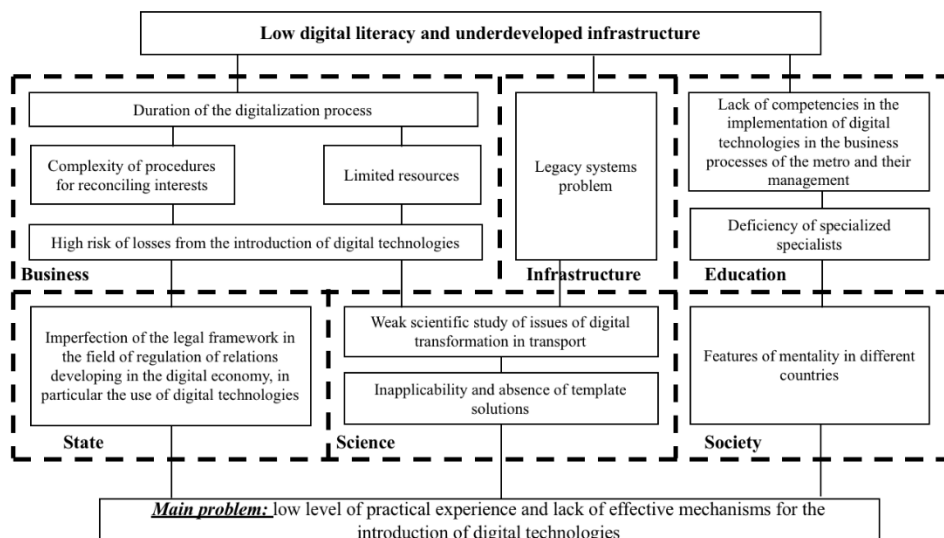
In the systems of the fourth level of leading foreign manufacturers, priority is given to traffic safety, tranquility of passengers and comfortable work of dispatchers. At the same time, other aspects of operation are provided for. For example, from the workplace of any line dispatcher, you can urgently disconnect the voltage from the contact rail. Thanks to the linking of the TETRA standard radio communication system with the on-board devices, dispatchers can negotiate with passengers, and notify them via loudspeaker communication.

Data exchange channels are organized between the train and traffic control points. They are designed to receive and transmit automatic fire alarm signals from the equipment diagnostics subsystem on trains and transmit images from video cameras installed in carriages to the dispatch center to the station.

2.2. Problems of world's metro digitalization

Digital transformation on transport is a complex, multi-level process that requires a certain level of development of technologies, infrastructure and society as a whole. However, at present, all countries are faced with different problems of digitalization of metros, which can be structured, highlight common problems, as well as "problems of cause" and "problem-effect" based on decomposition modeling. All problems are categorized into 6 groups: "state", "business", "society", "science", "education" and "infrastructure" (see Figure 2).



Figure 2. “Problem tree” of the world's metros digitalization

Source: authors' representation

The main problem of digitalization of subways is determined - the low level of practical experience and the lack of effective mechanisms for the introduction of digital technologies. At the same time, solving the problem of low levels of digital literacy and underdeveloped infrastructure will make it possible to solve most of the identified problems in all of these six categories.

For example, the development of relevant educational programs for students, graduate students, as well as advanced training of employees of all levels will expand competencies in the new digital reality and use the acquired skills for business development in the context of mass digitalization of all spheres of life.

Underdeveloped infrastructure is at the heart of all the identified problems. The solution to this problem is possible with the help of state subsidies for underground enterprises, as well as targeted investments in research and development, accompanied by scientific research in this area (Baranovet *et al.*, 2019).

The introduction of digital technologies is also often associated with the imperfection of the legal framework of countries in the field of regulation of relations developing in the digital economy, as well as the peculiarities of the mentality in different countries. In this case, it is advisable to develop template solutions for the digitalization of individual business processes that can be adjusted to the specifics of conducting production activities, depending on the region and legislative norms.



3. A reference model for the implementation of metro digital transformation

In order to increase the level of development of the digital economy in the world, traffic safety and the quality of passenger transportation, a model has been built for implementing the digital transformation of the metro by introducing modern information technologies for the transmission, storage and processing of large amounts of data, digital modeling of objects and processes, generation of decisions of a statistical and event nature. forecasting and planning the activities of the enterprise, taking into account the dynamic changes in external and internal conditions (Kitaev *et al.*, 2017).

The metro digital transformation implementation model is a system of measures aimed at optimizing business processes and improving the quality of the provision of passenger transportation services based on the massive introduction of digital technologies.

Figure 3 shows the constructed model, which includes 6 stages of digital transformation, i.e. transition of the metro from the state “analog” to “digital”. Let's take a closer look at each stage of digital transformation.

Stage 1. Preparation of infrastructure and rolling stock for the implementation of digital control systems:

Inspection of infrastructure facilities and rolling stock to determine the volume of analog and digital equipment with the aim of subsequent modernization for inclusion in digital process control systems.

Survey of existing control and safety systems in order to determine the possibility of integration into digital process control systems.

Description of the existing technological processes for managing the maintenance and repair of infrastructure facilities and the rolling stock in order to determine the need for adaptation in the event of the introduction of digital process control systems.

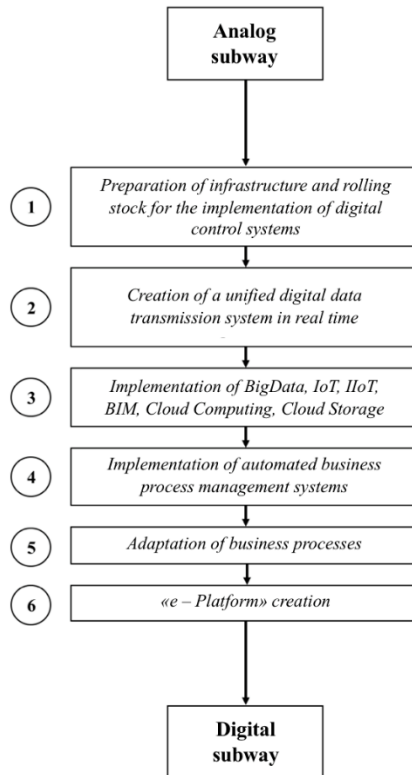
Determination of the degree of readiness (qualification) of personnel for the implementation and operation of digital process control systems.

Updating the normative and technical documentation governing the existing business processes of management, maintenance and repair of infrastructure facilities and the rolling stock fleet.

Stage 2. Creation of a unified high-speed data transmission system:

1. Survey of infrastructure and rolling stock for equipping with analog and digital devices and communication systems in order to determine the volume of construction of digital technological and corporate data transmission systems.
2. Creation of a digital technological (high-speed) data transmission system to ensure operability and real-time control of technological processes and services that ensure the transportation of passengers.
3. Creation of a digital corporate (high-speed) data transmission system that provides management of passenger services and enterprise resources.
4. Creation of a high-tech center for storing and processing large amounts of data.

Figure 3. Model of digital transformation of the metro and the creation of an “e-Platform”



Source: own representation.

Stage 3. Implementation of Big Data, IoT, IIoT, BIM, Cloud Computing, Cloud Storage technologies:

- Implementation of Big Data technology:

1. Formation of a strategy for the phased implementation of technology as an information technology tool that allows parallel processing of large arrays of unstructured data of business processes carried out by an enterprise in real time, with the ability to statistically predict negative and positive trends.
2. Creation of a working group for the organization of implementation and formation of a responsible subdivision at the enterprise to support the technology, appointing the owner of the process of ensuring the operation of the technology.
3. Preparation of the enterprise hardware and software infrastructure for the implementation of the technology. Mostly - the creation of a single digital, high-speed data transmission network and high-tech data processing centers (stage 2



- of the model) using cloud technologies, integration with existing information systems.
4. Step-by-step implementation of the technology in test mode, development of the “work without failures” resource.
 5. Updating the existing and forming new normative and technical (legal) documentation regulating the work and operation of the introduced technology.
 6. Training and advanced training of the personnel of the enterprise involved in the work and operation of the introduced technology.
 7. Putting the technology into operation in full.
- Implementation of technologies “Internet of Things” and “Industrial Internet of Things”:
1. Formation of a strategy for the phased implementation of technologies as a technological tool that allows real-time interaction of digital devices, machines, equipment, mechanisms and systems (programs) involved in the business processes of the enterprise.
 2. Creation of a working group to organize the implementation of technologies.
 3. Restructuring of the existing ones and the formation on their basis of a new responsible subdivision at the enterprise to support the technology, appointment of the owner of the process of ensuring the management and operation of the technology.
 4. Preparation of infrastructure facilities and rolling stock, software and hardware infrastructure of the enterprise for the implementation of technology. Mainly - equipping or retrofitting with built-in digital technologies for autonomous control and self-diagnostics (technical) with the ability to analyze the health status and generate proposals for the further management and operation of digital devices, machines, equipment, mechanisms and systems (programs) involved in supporting the business processes of the enterprise in the real time, integration with existing information systems.
 5. Step-by-step segment introduction of the technology in test mode, development of the “work without failures” resource. When implementing technologies, it is necessary to provide for segmentation based on the level of responsibility for ensuring the operation of technological processes and services, passenger and corporate services.
 6. Updating the existing and forming new normative and technical (legal) documentation regulating the work and operation of the technologies being introduced.
 7. Training and professional development of the personnel of the enterprise involved in the work and operation of the introduced technology.
 8. Putting the technology into operation in full.
- Implementation of the Building Information Modeling technology:
1. Formation of a strategy for the phased implementation of information modeling technology for enterprise facilities and management of their life cycle (at all stages: construction and reconstruction, operation and repair) based on digital

data about the object and data related to the object, considered together at one point in time.

2. Creation of a working group to organize the implementation of technology.
3. Restructuring of the existing ones and the formation on their basis of a new responsible subdivision at the enterprise to support the technology, appointment of the owner of the process of ensuring the management and operation of the technology.
4. Preparation of infrastructure facilities and rolling stock, software and hardware infrastructure of the enterprise for the implementation of technology. Mostly - the formation of digital passports of objects: buildings, technological structures, tunnels, bridges, stations, transport hubs, electric depots, etc. etc., creation of a unified electronic register of enterprise objects, integration with existing information systems.
5. Updating the existing and forming new normative and technical (legal) documentation regulating the work and operation of the introduced technology.
6. Training and advanced training of the personnel of the enterprise involved in the work and operation of the introduced technology.
7. Phased introduction of technology into operation.
 - Implementation of technologies “Cloud data storage” and “Cloud computing” (perspective):
 - 1. Formation of a strategy for the use of technology as an online storage of data not related to the operation of the enterprise's technological processes.
 - 2. Appointment of a responsible subdivision at the enterprise for technology maintenance, appointment of the owner of the process of ensuring the technology operation.
 - 3. Preparation of the enterprise hardware and software infrastructure for the implementation of the technology. Mostly - the creation of a single digital, high-speed data transmission network and high-tech data processing centers (stage 2 of the model), integration with existing information systems.
 - 4. Updating the existing and forming new normative and technical (legal) documentation regulating the work and operation of the introduced technology.
 - 5. Training and professional development of the personnel of the enterprise involved in the work and operation of the introduced technology.

Stage 4. Implementation of automated business process management systems:

1. Development of a strategy for the implementation of automated business process management systems (technological and corporate).
2. Creation of a working group to organize the implementation of automated systems.
3. Restructuring of the existing ones and the formation on their basis of a new responsible subdivision at the enterprise for the maintenance of automated systems, the appointment of an owner of the process of ensuring the management and operation of automated systems.
4. Preparation of the hardware and software infrastructure of the enterprise for the implementation of automated systems. In the areas of automated dispatch



control of infrastructure and train traffic, automated control of technological and production processes (maintenance and repair), automation of diagnostics of the technical condition of infrastructure and rolling stock, automation of corporate processes and enterprise management processes, etc.

5. Step-by-step implementation of automated systems in the indicated areas in test mode, development of the “work without failures” resource.
6. Updating the existing and forming new normative and technical (legal) documentation regulating the work and operation of the automated systems being introduced.
7. Professional retraining (retraining) of dismissed personnel, training and advanced training of the personnel of the enterprise involved in the work and operation of the automated systems being introduced.
8. Phased commissioning of automated systems.

Stage 5. Adaptation of business processes:

1. Development of the concept of enterprise management as an interconnected set of business processes in real time.
2. Conducting an audit of the current business processes for duplication of the functionality of the company's divisions.
3. Carrying out the actualization of the existing business mechanisms for the maximum efficiency of the implementation of business processes.
4. Conducting an audit of existing business processes for the need and the possibility of automation (mathematical modeling).
5. Development of new business processes (tools) necessary for the formation of analytics and assessment of existing business processes, development of proposals for the optimization and improvement of business processes.
6. Redistribution of business process management.
7. Updating the normative and technical documentation regulating the implementation of business processes (functions and operations).
8. Professional development and training of the company's personnel.
9. Creation of a subdivision for the implementation and maintenance of the “e-Platform”.

Stage 6. Development of the “e-Platform”:

1. Development of a strategy for the phased implementation of the “e-Platform” using the management concept of process management of the organization, considering business processes as enterprise resources.
2. Modeling business processes of an enterprise and creating a unified automated platform for managing business processes in aggregate in real time.
3. Software and hardware preparation of the enterprise IT infrastructure and the implementation of the “e-Platform”.
4. Organization of training for personnel to acquire competencies in the digital economy.
5. MTBF of the e-Platform in test mode.



6. Updating and revising the mechanisms for the implementation and management of business processes.
7. Putting the “e-Platform” into commercial operation, the formation of analytics about the work of the system.

Automation of all business units of an enterprise can be achieved through the introduction of digital technologies that will optimize and improve the quality of the metro's activities, all business processes of which can be controlled on a specialized virtual platform in real time. Thus, the introduction of digital technologies into the business processes of the metro is an integral process in the modern world to improve the methods and methods of ensuring safety, comfort and reducing the time for transporting passengers. The study made it possible to identify the following effects of digitalization of metro business processes.

Social Effects:

- increasing the attractiveness of the metro as a public transport in terms of increasing comfort, mobility and the level of transport safety;
- increasing the attractiveness of work at the enterprise for young professionals.

Economic effects:

- reduction of overhead costs of the enterprise as a result of the introduction of equipment maintenance technology “on condition”;
- reducing the need for space for the placement of telemechanics devices and hardware for automation, signaling, communications and security;
- optimization of the personnel of the enterprise of operational services and the release of areas (rest rooms for drivers, first-aid posts and other premises at the stations) by automating the business processes of the enterprise;
- reduction of power consumption for traction due to the automation of train traffic control;
- the use of resource-saving techniques to reduce the consumption of electricity for traction of trains.

Technological effects:

- reducing the time for coordinating the actions of the participants in the passenger transportation process due to the introduction of a unified information platform for the exchange of statistical and operational dispatch information;
- increasing the uniformity of train movement intervals in case of disruption of the normal operation of the line, reducing the time for restoring normal movement after the elimination of the violation;
- minimization of the influence of the “human” factor in the implementation of business processes of the enterprise through automation;
- minimization of the voice commands of the dispatcher and negotiations on train and dispatch communications;
- transition from planned maintenance of equipment to maintenance technology “on condition”, reducing the time for maintenance and repairs due to the automation of diagnostic systems;



- timely diagnostics of the technical condition of infrastructure equipment and rolling stock and its systems, reducing the risk of rolling stock malfunctions during operation on the line;
- decrease in the number of violations of the timetable by a single train, as well as violations of the timetable in general;
- rejection of traffic light signaling as the main train traffic control system.

Conclusions

In the context of the digital race for leadership in digitalization, many countries are developing draft laws and state programs for the development of the digital economy, paying special attention to those industries that have reached the greatest readiness for digital transformation.

As the results showed, each of the European countries considered in the research, including the Russian experience of digitalization of the Moscow metropolitan, has achieved some success in one form or another of digitalization. However, at present, the key problem of digitalization of European and Russian metropolitan is the lack of a comprehensive digital transformation of this transport infrastructure object. In this regard, this study presents a reference model of digital transformation of the metropolitan, which, according to the authors, will allow in the short term and at the lowest cost to switch from an analog “metro to a “digital” one.

In addition, as an innovative solution for automating metropolitan management, it is proposed to create a specialized e-Platform that will allow to monitor all metro business processes in real time, as well as to make decisions in emergency situations, which will increase the safety and comfort of passenger transportation.

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INSTRUMENTS OF EU EASTERN NEIGHBORHOOD POLICIES APPLIED IN THE REPUBLIC OF MOLDOVA: EFFECTS AND PROBLEMS

Grigore VASILESCU*, Cristina MORARI**

Abstract

The paper provides theoretical, institutional and legislative analyzes, but also emphasizes the practical dimension of issues related to EU instruments within the Eastern Neighborhood Policies applied in the Republic of Moldova, including the cross-border cooperation and the implementation of various programs and partnership projects with the participation of civil society, etc. This study focuses on literature analysis, on research conducted during the application period of the EU Eastern neighborhood instruments, as well, it is based on the ENACTED Focus Group Research: Testing the efficiency of EU's Neighborhood Instruments, developed by authors, participating experts from the Republic of Moldova. The paper outlines the situation in the area and presents some conclusions and recommendations that may contribute to the increase of efficiency of EU Eastern neighborhood instruments.

Keywords: EU, Eastern neighborhood, regional policy, instruments, efficiency

Introduction

The European type of contemporary integration processes, taking place in fact all over the world, differs radically and has a character based on law, as it is a legal type of integration, on institutions, due to its institutional type of integration, and on policies, since one of the activity methods of European integration and unification, within the European Union, is elaborating and implementing common policies in all fields - economics, politics, social, culture, etc.

Among policies developed and implemented by EU, the European Neighborhood Policies hold a special place. Policies designed to achieve certain goals, that have, already, a background and accumulated an implementation experience, have highlighted, as well, some problems, difficulties and uncertainties. Since the launch of neighborhood policies, a range of mechanisms and instruments

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have been developed for their practical application. The effectiveness, results and effects of these mechanisms and instruments, as well as neighborhood policies, have been evaluated differently in the literature of the field, in experts' studies, by European institutions and by beneficiaries, citizens of states where these policies are applied.

Along with a range of achievements, results of the applied European neighborhood policies, particularly in the Eastern neighborhood that includes the Republic of Moldova, in fact achievements of relatively modest success, according to some assessments, even disappointing ones, in this area were highlighted also many difficulties and problems that obviously should be analyzed, and further research is needed as neighborhood remains to be a neighborhood, requiring to be studied, examined, even rethought and corrected, as we discussed in a previous publication (Vasilescu and Morari, 2018).

Thus, considering the subject poorly researched in the national literature of specialty, the goal of this article is to analyze main instruments of European neighborhood policies also applied in the Republic of Moldova. Moreover, the study is aimed to outline the results of European neighborhood policies' implementation in the Republic of Moldova, as well, to address problems this domain copes with.

To carry out the objectives, the study focused on opinions and observations developed by some authors regarding the issue and on special methodology of data analysis collected within the focus-group research that involved experts from the Republic of Moldova. So, based of these data was possible to identify some realities and recommendations that may contribute to the improvement of European neighborhood policies, in general, and of applied instruments in the Republic of Moldova, in particular.

1. European Union neighborhood policies: overview, principles and priorities

The European Neighborhood Policy (ENP), by definition, is an instrument of the European Union's external relations that aims to bring Eastern and Southern European countries closer to the EU. Launched more than a decade and a half ago, following the largest enlargement of the European Union on 1 May 2004, the European Neighborhood Policy, as it is interpreted in literature, represents a new stage in the development and construction of the European continent, consolidating the role of the European Union as international player (Solcan, 2008, p.78).

Historically, the first initiatives and attempts to draw up a European Neighborhood Policy date back to 7 August 2002, when EU Secretary General Javier Solana and Commissioner Christopher Patten signed a joint letter "Enlarged Europe". This was followed by the European Commission's Communications "Enlarged Europe - Neighborhood: A New Framework for Relations with Eastern and Southern Neighbors", of 11 March 2003, and "Preparing the Way for a New Neighborhood Instrument" of 1 July 2003. In March 2004, the European Neighborhood Policy Strategy was adopted and since then began a qualitatively new stage in the development, based on strengthening and deepening, of relations



between the European Union and its neighbors, among which the Republic of Moldova.

The essence of the ENP, according to Romano Prodi, former President of the European Commission, is to establish a "circle of friends" around the Union (Liotti, 2018; Prodi, 2002) in order to create an area of prosperity, stability and security in the EU neighborhood, which would be in the interest of both the EU and the partner countries. The European Neighborhood Policy has well-defined goals and objectives. Respectively, the ENP regulates privileged relations with neighboring states that go beyond general cooperation, including respect for the principles of market economy, sustainable development and free trade, based on the economic integration of neighboring states into the EU internal market, focusing on poverty reduction, strengthening cross-border cooperation, networking and providing sound financial assistance, in exchange for strengthening the rule of law in neighboring countries, democracy, respect for human rights, good governance, promoting market reforms, promoting social cohesion, jointly providing for cooperation on foreign policy objectives, such as the fight against terrorism and the non-proliferation of the means of mass destruction.

Essential to the European Neighborhood Policy, however, are two main goals. First, it is the need to avoid new dividing lines in Europe. This is ensured by erasing the classic significance of borders and establishing interconnections in various areas based on the common interests of the EU and neighboring states. Second, is the need of in-depth development of relations with neighboring countries at both continental and international level, given the necessity to take into account the economic and political interdependence of the ENP with the foreign policy of international actors, such as the Russian Federation policy towards the Eastern neighborhood of the EU, including the Republic of Moldova, as well as the necessity to solve transnational and cross-border problems related to certain socio-economic issues, political instability in neighboring areas, fragility of state structures, due to negative phenomena as organized crime, illegal migration, frozen conflicts, etc.

The European Neighborhood Policy is based on certain principles, such as: the geographical principle, the principle of interdependence or common commitment, the principle of differentiation, the principle of progressivity. In short, these principles can be characterized as follows:

The geographical principle. This principle of proximity to EU borders is used within ENP to identify the states that are part of the European Union's neighborhood. According to the ENP Strategy, these are the neighboring states or those that have approached the EU as a result of European enlargements. And because there are several such states, depending on the degree of proximity to the EU and the bilateral legal basis, these states were divided into four groups: I. Eastern European states, including the Republic of Moldova, which have as strategic goal the European integration and have concluded Partnership and Cooperation Agreements or Association Agreements with the EU, but do not have a clear prospect of EU membership, although this is not excluded; II. Mediterranean states that



concluded Association Agreements with the EU, but do not aim at EU membership; III. Candidate countries, with some prospects of EU membership, such as the Western Balkan states that are part of the Stabilization and Association Process and although are EU neighbors are not a part and subjects to ENP; IV. States of the European Economic Area (EEA) and Switzerland, that want to maintain their existing status.

The principle of interdependence or common commitment. Provided by the ENP Strategy it stipulates that ENP should be jointly designed and implemented by both the European Union and the neighbor state. The essence of this principle is to establish a privileged partnership and interdependence/ a common commitment, and the goal is to promote good neighborly relations. The ENP Strategy, elaborated by the European Commission, regarding this principle emphasizes the following: "Interdependence or common commitment in this process, based on awareness of shared values and common interests, is essential" (European Neighborhood Policy Strategy Paper, 2004, p.8). The principle has been implemented, for example, in the case of joint elaboration of Moldova-EU Action Plan by the EU institutions - the European Commission, the EU Presidency, the High Representative for the Common Foreign and Security Policy and the Republic of Moldova.

The differentiation principle. Initially, the European Neighborhood Policy was conceived as common and coherent for all states bordering the EU. However, an innovative element of ENP with the EU is to differentiate the relations of each state in the process of implementing the neighborhood policy, especially during the negotiation and adoption of Action Plans between the EU and the partner state. The differences are highlighted in the set of priorities for those states. The main elements taken into account in order to use the principle of differentiation are the following: 1) the geographical position of the partner state vis-à-vis the EU within ENP; 2) the socio-economic and political situation of the partner state; 3) bilateral relations established between the EU and the partner state; 4) the capabilities and needs of the EU and partner states; 5) mutual interest between the partner state and the EU.

The principle of progressivity. According to this principle, EU offers areas of cooperation combined with incentives depending on the progress made by the partner countries. Areas of cooperation and incentives can range from the use of the EU's main instruments to achieve the Union's foreign policy objectives to providing stronger financial assistance and the development of new contractual relations with the EU.

The European Neighborhood Policy, in addition to its aims, objectives, principles, also focuses on certain **priorities set out in the ENP Strategy**. Two broad areas of priorities established between the EU and the partner states are the following: 1) priorities oriented towards commitments undertaken to accept or adhere to common values and to some objectives in the field of foreign and security policy; 2) priorities oriented towards commitments undertaken to bring the partner state closer to the EU in concrete areas. These priorities are specified in: **priorities related to common values** (such as freedom, democracy, respect for human rights and freedoms, the rule of law, as well as the judiciary reform, the fight against



corruption and organized crime, respect for basic labor standards, etc.); **political priorities** (strengthening political dialogue, cooperation in the fields of conflict prevention and crisis management, dialogue in the CFSP, cooperation in the areas of global governance, solving global problems, combating common security threats, etc.); **economic and social priorities** (preferential trade relations, high technical and financial assistance, the possibility to participate in the EU internal market, convergence of economic legislation, opening of EU and neighboring economies, reduction of trade barriers, improvement of the investment climate in neighboring countries, etc., and in the social field - socio-economic development, reduction of poverty and inequality, structural reforms, job creation and improvement of working conditions, raising the efficiency of the social assistance system, reforming the national welfare system, etc.); **trade priorities** (harmonization of legislation in this field, including customs, for the free movement of goods, capital, services and people, creation of free trade areas or liberalized trade areas, improvement of administrative cooperation, elimination of non-tariff barriers, development of necessary infrastructure, insurance of the origin of goods, priorities in line with European standards in the sanitary and phytosanitary fields for agricultural products); **priorities in the field of justice and home affairs** (migration and border management, trafficking of human beings, the fight against terrorism, as well as cooperation in the field of migration, asylum, visa facilitation, combating of organized crime, drug and arms trafficking, money laundering and economic and financial crimes); **priorities in the fields of energy, transport, environment, research and innovation** (strengthening energy networks and interconnections, security of energy supplies, expanding the EU internal market to neighboring partner countries, integration into European transport networks, preventing environmental degradation and pollution, protecting health human resources, rational use of natural resources, water, air, waste quality management, etc.); **priorities in the field of interpersonal contacts** (refers to the fields of education, culture, youth, public health, civil society); **priorities in the field of regional cooperation** (development of cooperation between neighboring states, between regions and EU, connecting different regions, cooperation between neighboring states within the European institutions, cooperation within euro-regions at local level, cross-border cooperation).

ENP during its implementation has gone through several stages, registered some certain results, so we cannot state that it was completely inefficient. However, one of the main aims of the ENP to create a "circle of friends" around the Union and to create an area of prosperity, stability and security in its neighborhood was not achieved in the form it was conceived for several reasons. One reason is, as we have argued before (Vasilescu, 2015), the collision in its Eastern part of two neighboring areas - that of the European Union and of Russia (with its alleged interests in its "near neighborhood") and, another one is necessary geopolitical expansion of EU. On the contrary, in the EU neighborhood, both eastern and southern, a series of conflicts have arisen, several problems, difficulties, new risks and threats have



emerged. In these circumstances, the EU had to reconsider its neighborhood policies. Thus, the first serious revision of the ENP took place in 2011, as a result of the riots in the Arab world, also known as Arab Spring. The revised EU ENP objective was to support partners to undertake reforms in the field of democracy and human rights, to contribute to their inclusive economic development and to promote the market economy. The renewed ENP focused on the strengthening of cooperation in the political and security spheres, support for development, economic growth and job creation, the stimulation of trade and the strengthening of cooperation. Under the new ENP, a new incentive-based approach ("more for more") began to be applied for the first time, offering partner countries a modulating regime of financial assistance based on the progress made by ENP states, basically, in the field of democratic changes and respect for human rights. The new ENP had a series of advantages, especially in the economic field that can be quite considerable. Compared to the agreements signed by the EU with neighboring countries, the ENP plays a more significant role, especially in carrying out structural reforms and implementing sound macroeconomic policies, depending on the commitments of neighboring partner countries in the ENP processes.

The second major review of the ENP took place in 2015, when Federica Mogherini, EU High Representative for Foreign Affairs and Security Policy, and Johannes Hahn, European Commissioner for European Neighborhood Policy and Enlargement Negotiations, presented the *Joint Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Review of the European Neighborhood Policy*. As experts have estimated, the need to revise the ENP has been determined, in particular, by the awareness that the EU is not able, by itself, to solve all the problems of the region, that its influence is limited, and that the new ENP would help to create the necessary conditions for a positive development of relations with the ENP States (FPARM, 2015). The purpose of the ENP review was to find ways for the EU and its neighbors to build more effective partnerships in the neighborhood. According to European officials, the EU should shift from the idea of being the center, surrounded by neighboring countries, to the idea of a new partnership based on cooperation.

2. Mechanisms and instruments for implementing EU neighborhood policies

In implementing the European Neighborhood Policy one of the main questions was and remains the issue of applied mechanisms and instruments. Although, any policy, no matter how wonderful and attractive may be, it can just be written on paper while not supported and provided with tools, effective mechanisms for its practical application.

Regarding the European Union, the issue of mechanisms and instruments within ENP has been constantly in the attention of the European institutions, especially within the process of reviewing European neighborhood policies. Thus, when the European Commission and the European External Action Service (EEAS) launched the consultation process for ENP review in March 2015, one of its main



objectives was to adapt the policy instruments to take better account of the specific aspirations of the partner countries (European Parliament, 2019). In this context, the European Parliament adopted a resolution, on July 9, 2015, stressing the need for a more strategic, targeted, flexible and coherent approach to the ENP. On November 11, 2015, as result of consultations, a communication from the EEAS and the Commission on this subject was presented. Similarly, in 2014 the European Union launched the European Neighborhood Instrument (2014-2020) by Regulation (EU) no. 232/2014, which replaced the European Neighborhood and Partnership Instrument (ENPI) established in 2007. The instrument aimed to create an area of common prosperity and good neighborliness between EU and partner countries by:

- promoting human rights, the rule of law, sustainable democracy and citizen participation;
- sustainable and inclusive economic, social and territorial growth and development, including through progressive integration into the EU internal market;
- mobility and interpersonal contacts, including student exchange programmes;
- regional integration, including cross-border cooperation programs (IEV – Instrumentul european de vecinătate (2014-2020)).

At the same time, it was emphasized that respect for human rights, democracy and good governance would be considered important criteria that influence the allocation of funds to partner countries. In terms of instruments, the ENP is based on existing legal agreements between the EU and its partners - the Partnership and Cooperation Agreements (PCAs) and the newly created Association Agreements (AAs), including the Eastern Partnership as part of the ENP aimed to accelerate political association and deepen economic integration between the EU and its Eastern neighbors, including the Republic of Moldova. Bilateral action plans and partnership priorities established between the EU and partner countries hold a central place within ENP, setting out political and economic reform programs on short- and medium-term priorities (3-5 years). The ENP Action Plans as well as the Partnership's priorities are based on interests, needs and capabilities of EU and each individual partner. The most important fact is that EU supports the achievement of ENP set objectives by providing financial support, political and technical cooperation. Financial assistance for the ENP implementation is provided through the European Neighborhood Instrument (ENI) and, according to the data, amounts in the EU financial year 2014-2020 to about 15.4 billion Euros (Romanian Ministry of Foreign Affairs).

The European Neighborhood Instrument (ENI) has four components:

- bilateral component (intended for bilateral relationship between the EU and each partner state. This component represents most of the ENI funds);
- inter-regional ENI component (Erasmus Mundus, TAIEX, twinning, Neighborhood Investment Facility / NIF);
- component of ENI Regional East and ENI Regional South (dedicated to regional projects);



- ENI-CBC component (intended to finance cross-border cooperation programs).

Additionally, more instruments and programs were proposed, such as *Civil Society Facility*, used to fund the ENP. Moreover, the Commission provides financial support in the form of grants to partners, also the European Investment Bank and the European Bank for Reconstruction and Development provide support through loans. Meanwhile, new instruments were developed under ENP to promote the access to the European market, as through negotiation of deep and comprehensive free trade agreements, agreements to improve mobility and migration management, including agreements on visa liberalization, and in 2016 a specific financial instrument was launched - the Mobility Partnership Instrument.

The EU is constantly looking for new mechanisms and tools within ENP. Thus, the architecture and functioning of the EU's external financing instruments, including ENI, are currently being re-examined in the discussions on the future Multiannual Financial Framework (MFF) for 2020-2027. On April 18, 2018, the European Parliament adopted the Report on the Implementation of EU External Funding Instruments, including the 2017 mid-term evaluation and the future post-2020 architecture. Regarding the ENI, the report called for more flexibility, better use of the 'more for more' approach, the incentive-based approach and better coordination between regional programs (European Parliament, 2019). Also, in the context of the search for new instruments for the ENP, in June 2018, the European Commission published a proposal for a Regulation of the European Parliament and the Council establishing the Instrument for Neighborhood, Development and International Cooperation (NDICI). The proposal aims to simplify the current way of financing EU external action for the next MFF period and integrates several financial instruments into the new NDICI, including the ENI. In 2019, the Parliament adopted this proposal, while requesting additional funding, a greater role in decision-making on policy options, as well, the suspension of assistance in the case of human rights violations.

3. EU's neighborhood policies implementation in the Republic of Moldova: methodological aspects

In the Republic of Moldova, among first remarks on the ENP implementation level is mentioned in 2008, in a work published on the occasion regarding the end of three-year implementing period set for EU-Moldova Action Plan (EUMAP) – one of the main instruments applied by EU in the framework of neighborhood policy. The paper refers to the evolution of ENP outlined in the Preface as "significantly influenced the initial expectations and behavior of targeted countries" (Bușcăneanu, 2008). A broader analysis of the ENP implementation in the Republic of Moldova was conducted in 2015 by a group of researchers, including Igor Botan, Denis Cenușă, Mariana Kalughin, Adrian Lupușor, Iurie Morcotilo, Polina Panainte (Botan *et al.*, 2015). The study was carried out within a project implemented by the non-governmental organization ADEPT and Expert-Grup with the support of the US Agency for International Development (USAID) through the Eastern European



Foundation and FHI 360. The Progress Report provides an analysis and summarizes major developments and progress in the field of political dialogue and economic sphere during years 2005-2014, but also identifies key issues and formulates a set of conclusions and recommendations for authorities. The analysis is performed in most areas of ENP application - justice reform, Transnistrian conflict, trade relations, population welfare, rural and regional development, sanitary and phytosanitary issues, social policy, movement of persons, social insurance, services, public procurement, politics competition, industrial policy, transport, information society, public health, macroeconomic and macro financial policies, functional market economy, etc.

Thus, the Republic of Moldova registered relatively modest success in implementing the EU's neighborhood policies and met a series of difficulties in that process. We proposed the ENACTED project to analyze the efficiency of the neighborhood instruments at the experts' level and to observe their perceptions and feedback on ENP/EaP instruments, also on the approach of improving the cross-border cooperation (CBC) between EaP and EU. For this purpose, to carry out a research, the ENACTED Focus Group: *Testing the efficiency of EU's neighborhood instruments* was created. Taking into consideration the research subject, the focus group of the Republic of Moldova included 8 participants, representatives of governmental structures and different civic society organizations. Issues addressed to experts covered the following:

1. Do you consider the overall cross-border cooperation of the EU at its eastern borderlands efficient?
2. How would you evaluate the civil society (from your region) involvement in the Europeanization process of your country?
3. EU's eastern borderlands: barriers or drivers of cooperation? Is the CBC diminishing the administrative border effects in the region? If not, which of the factors that hinder cross-border cooperation do you consider as being the most important?
4. How visible do you consider EU's instruments (JOP RO-UA, JOP RO-MD, Erasmus+, Euroregions, etc.) in the Eastern neighborhood? Have you ever been involved in a CBC project? Please indicate your status in the project (coordinator, implementation team, beneficiary, etc).
5. Which are the most important effects you have noticed of EU's instruments and actions in your region/country?
6. When it comes to the European versus national legislation, are there any legal and administrative differences which hinder cross-border cooperation between the EU and its eastern neighbors? If they exist, how could they be overcome?
7. Considering the legislative differences, but also all the other factors that hinder better transnational cooperation (distance, administrative cost, etc.) could you offer some recommendations on how to reduce the complexity, length and cost of cross-border interactions at the Eastern flank of EU?



8. Do you perceive the public-private partnership helpful in consolidating cross-border cooperation? Can you indicate some ways to improve the public-private partnership?
9. Bilateral versus multilateral programmes: Will the new framework bring added value to cross-border cooperation?
10. Lessons learnt from previous CBC programmes: Are the current programmes the result of a pragmatic progress? Is the new management and implementation framework more efficient?
11. How do you foresee the medium and long-term impact of European CBC instruments upon your region/country?
12. What perspectives and strategies for the future of borderland cooperation between the EU and your country do you envisage, considering the regional context altered by the international/regional political crisis and the existing tensions?

The focus group objective was to provide perspectives of experts on the European neighborhood policies also on progress and difficulties of instruments. Working with a focus group, our goal was to interpret and analyze the situation in the area in the Republic of Moldova. Results are presented in the following section.

4. EU's neighborhood policies implementation in the Republic of Moldova: realities and problems

The focus group allowed authors to identify the perceptions, opinions and appreciations of the EU's neighborhood policies implementation in the Republic of Moldova. Thus, considering the first question, majority of experts appreciate as efficient the overall cross-border cooperation of the EU at its eastern borderlands. The underlined pro arguments are the role of Eastern Partnership, which encourages and empowers the cross-border cooperation between its 6 members; the role of EU4business, EU4energy, EU4youth, EU4Innovation programs through which have been implemented various actions across the EaP countries, including Moldova, with considerable outcomes; and projects supported by the EU, designed to contribute to the development of the country in strategic areas, such as education, security and border control, infrastructure, agriculture, healthcare, media, civil society etc. However, it is mentioned that for implementing cross-border, regional and trans-national strategy, the Republic of Moldova faces lack of financial instruments that can lead to economic and social development, as well, there is not fully utilized the social and economic potential that have vast opportunities for collaboration in various fields. Some tangible results may be visible in collaboration with Romania, as ecology, culture, healthcare or education. On the other hand, cooperation with Ukraine remains somewhat affected by the Transnistrian conflict and its economic and political ramifications. Also, there is an opinion that the overall cross-border cooperation of the EU at its eastern borderlands is not very effective, due to many untapped areas of cooperation in this direction. Nevertheless, both Moldovan and EU sides have to be more determined in this regard, aiming to make use of all



opportunities provided through the EaP instruments, so that Moldova could raise its status from the receiver to contributor status of good governance, rule of law, democratic society, security provider, climate change supporter etc.

Regarding the second question, we note that two national Platforms are currently active on the relation EU-Moldova: Eastern Partnership National Platform (established in 2011) and the EU-Moldova Civil Society Platform established in 2016 as consultative body under the EU-Moldova Association Agreement. It is certain that the involvement of the civil society in policy-making, reform, governance and service delivery are critical for achieving the development objectives, including the implementation of the Association Agenda (AA) and Deep and Comprehensive Free Trade Area (DCFTA). Experts argue that the last 5 years, the civil society organizations became a sound voice in Moldova, being an outstanding supporter of the Europeanization process, due to implementation of projects supported by the EU and EU member countries. Often there are critical opinions concerning the lack of consultative and delegation systems to/from smaller grassroots organizations and citizens. But, generally, the civil society is an active and important actor in Europeanization process. Its role has increased with the involvement of youth, who started to manifest a stronger interest to EU academic instruments as Erasmus+ programs and involvement in volunteering activities, such as enrolling themselves in the Young European Ambassadors movement. Nevertheless, argue experts, most of the active MD CSOs are located in Chisinau or in big cities of Moldova. The local CSOs are more or less active because of their dependence on foreign funds and support, as well because of poor or lack of institutional capacity, expertise or experience. Also, the opportunities for social dialogue between the central government and civil society are limited. Dialogue prevails between the Government and business organizations on economic development issues. However, the NGOs represent value tools and promoters of Europeanization process at the local level, and it requires guidance to reach the potential they have. Most of them managed to have an impact on MD citizens' life through their activities promoting critical thinking, media literacy, gender issue aspects, rule of law, EU values and principles, encouraging people to be more civic engaged in the community at different levels etc.

Reflecting on EU's Eastern borderlands, experts have identified a range of barriers that hinder cross-border cooperation. Among them we mention the weak state institutional capacity, expressed by the insufficient human resources for the existent workload along with the ineffective institutional reform, high bureaucracy that leads to considerable delays and the political instability, which again causes delays in the decision-making and execution processes within the state; corruption, low or lack of transparency, the absence of an information office for the potential beneficiaries. Also, the lack of economic development in Eastern countries, low level of democracy and migration processes are considered the main reasons, that create additional difficulties for effective cooperation, implementation of new projects and formation the favorable business environment in the region. At the same time, the



frozen conflict related to Transnistria could be presented as a big barrier, both, for bilateral relation with the direct neighbors (Romania and Ukraine) and in relation with European Union. Anyway, ENI is a driver instrument and activities supported by the programme directly mobilized a large number of individuals and organizations coming from different levels of government and various civil society sectors. The cooperation and exchange among actors from different countries and professional backgrounds significantly improved the intercultural and cross-sector understanding. As some experts have mentioned, the Republic of Moldova is privileged to be eligible for CBC programmes, with its entire territory. The potential beneficiaries could benefit to create their own partnerships and to apply for a common action. The programmes components are quite large and suitable for practically all the cooperation domains.

In this context, The Republic of Moldova benefits from a cross-border cooperation program (CBC), regional programs (especially in the fields of transport, energy and environment) and inter-regional programs (Tempus, Erasmus, TAIEX and SIGMA). It can be pointed out that in the period 2007-2013 Moldovan beneficiaries were involved in 171 projects within all eligible CBC/TNC programs. Therefore, it can be assumed that through the CBC programs, Moldova achieved - and further achieves - progress in economic development, environmental protection and development of the social, agricultural, small and medium enterprise (SME) sectors. Through well-known and visible EU's instruments are highlighted mainly Erasmus+ and EU4Business instruments. The Erasmus+ program is very familiar especially among students and teachers, both parties benefiting from studies in EU universities. The other instruments are less known, being somewhat used by the business environment or public authorities.

As to the most important effects of EU's instruments and actions in the Republic of Moldova, in the opinion of experts, are those reflected upon the civil society engagement and media independence, gender equality in institutions, education etc. A special impact is observed upon the local business climate, international trade (esp. export to EU) and digitalization of public services, business processes and commerce. The JOP, for example, supported the existing interrelations to achieve a better social and economic integration of the area. The cooperation across the border was considered as an instrument to tackle common problems of the neighboring regions in a wide variety of areas. Consequently, the JOP was built from the bottom up, based on local/regional initiatives and harmonized with the national and regional strategies of each country (see "relevance"), to be in line with local and regional partners on each side of the border. Considering the size and nature of the CBC programme, global and macro-economic impact indicators (impact on GDP, unemployment, education qualifications, population growth, etc.) were not formulated. However, limited and simple indicators focusing on the programme contribution to European cross-cutting themes were introduced. It was also vitally important in terms of the overall objective that the programme stimulated greater cooperation across the border through collaboration and exchange of experience activities including the creation of networks. All achievements were reached as part



of the EU's territorial cooperation activities under the Regional and Cohesion Policies. Thus, EU's instruments are practically the unique instrument offered to the Republic of Moldova beneficiary to apply directly for actions and to be directly responsible for the implementation, even for the actions with the infrastructure component.

When it comes to the European versus national legislation, Moldova implements its commitments provided by the Association Agreement, thus, since 2014 the national legislation has been heavily aligned to the EU *acquis* with considerable progress in this respect. Moreover, a Legislation Harmonization Centre is established within the State Chancellery of the Republic of Moldova. Basically, note some experts, all the national legislation was adapted to the European legislation (Government decision no. 377/2018 and no. 576/2017). In this context, the process of harmonization and compliance of national legislation with European legislation is ongoing process and do not represent an overall barrier in implementing the EU financed Programmes. Nevertheless, a constraint is related to limited capacities of local and regional authorities in implementing CBC projects and applying PRAG procedures. There still exist several impediments that hinder the CBC in trade with EU, linked to higher standards imposed for goods imported in the EU member states. Finally, is argued the vague understanding of the potential of cross-border cooperation with EU countries, as business and other sectors are not enough proactive in penetrating the EU area.

Therefore, participants of the focus group, considering the legislative differences, but also all other factors that hind better transnational cooperation, have advanced some recommendations on how to reduce the complexity, length and cost of cross-border interactions at the Eastern flank of EU: implementation of jointly operated border crossing points to facilitate the border controls and customs procedures; long-term investment in national infrastructure (roads and railroads); mutual recognition of Authorized Economic Operator(AEO) certification; better prioritization of projects that primarily need external assistance (financial and technical); use at the most of the EUHLAM, TAIEX, Twinning and other EU assistance instruments; establishment of a permanent information Office; organization of more frequent working meetings with the managing authorities and national managing authorities through more available means of communication (video conferences). Also, as a recommendation on reducing the complexity of CBC programmes was stated that the monitoring systems of the programmes need to be improved. Measuring the effectiveness of the programme based on the achievement of the indicators at programme and project levels should be possible. The assessors in the project selection procedures should take account of the applicant's projections of indicator values on and after completion of the project when scoring proposals (i.e. link the indicators to the assessment process). The beneficiaries should be required to improve the quality of their project performance frameworks (logical frameworks and indicators) before contract signature. The beneficiaries should be required to calculate the value and provide evidence for indicators (at output,



outcome and impact levels) as part of their monitoring and reporting duties, with support from the JTSs. At the JTS (or Contracting Authority), the monitoring data need to be processed to allow for an evaluation of the programme effectiveness, efficiency and impact.

Next, analyzing the public-private partnership, participants of the focus group consider that, generally, the CBC programmes contributed significantly to the formation of cross-border networks and long-term partnership frameworks. These networks served as a starting point for building up more joint and durable problem-solving capacity in the future. There were identified several ways for its improvement as well. Increase of awareness regarding the existent programs the representatives from private sector can benefit of; concentration of the partnership on activities that consolidate the competitiveness of national sectors and focus on international operations; letting the public institutions be the facilitator for cross-border cooperation by creating the “bridges” to foreign markets and partners, justice reform, financial and banking reform, clear and transparent competitive rules for stakeholders are some of these recommendations.

The experts also pointed out that for the Republic of Moldova equally bilateral and multilateral programmes were with a great impact. It was underlined that bilateral programs are more focused and can be better monitored. Multilateral programs are more social oriented. Thus, The Republic of Moldova will benefit both bilateral and multilateral programmes by: transformation of the border from a line of separation into a place for communication between neighbors; overcome mutual hostilities and prejudices between peoples of border regions which result from historical heritage; strengthen the democracy and the development of operational regional/local administrative structures; overcome national isolation; promote economic growth and development and the improvement of the standards of living; rapid assimilation into or approach towards European integration etc.

Regarding the 10th question, just one expert could present a comprehensive answer, while others found it difficult, due to the lack of experience. So, some of lessons and conclusions learned from previous CBC programmes are considered to be: the need to create a co-financing mechanism at the national level; the lack of co-financing mechanisms represented an impediment to civil society; very long decision-making time (about 18 months from launch to signing the contract); procedures should be simplified and aligned for all partners; difficulty in finding credible partners; difficulty in completing project documents due to lack of qualified staff; difficulties of administrative procedures (e.g. submit one original and 3 copies of supporting and financial documents; requiring agreement from of all partners for a small change in a partner's budget; approval of visibility materials; per diem were considered ineligible); simple and more transparent rules of procedure are needed.

Regarding the last two questions, the experts expect CBC to increase in the near future as the Moldova -EU relationship deepens. These should target both economic and social-political cooperation resulting in mutual benefits. The highest risks are determined by the political factors, or the recent political arrangements do not seem to be in the same direction. Also, it is noted that medium and long-term



impact of European CBC instruments upon the Republic of Moldova depends on further domestic and regional political developments, and which path of Moldova's development will be a priority – the European or Russian one. As well, the eagerness of the EU community to give a clear perspective of association of the EaP countries (not referring to Association Agreement). In terms of increasing efficiency (maximizing the benefit of EU funding), but also effectiveness, impact and sustainability, a greater focus should be put on a narrower and more targeted set of objectives and outcomes that offer a higher probability of sustainable socio-economic impact in the border regions. This could be achieved by carrying out preliminary studies in preparation for 2021-2027 programming (funded under the TA priority), as well as by involving the relevant line ministries for the chosen thematic priorities in the programming process.

Conclusions

The goal of the article, to analyze main instruments of European neighborhood policies and to highlight the results of implementing the European neighborhood policies in the Republic of Moldova, as well to identify problems in this area, was fulfilled. Based on the focus group findings was possible to identify some realities and recommendations that may contribute to the improvement of European neighborhood policies, in general, and applied instruments in the Republic of Moldova, in particular. Thus, according to experts, the overall results of European neighborhood policies in EU eastern borderlands are efficient, as they do contribute to the development of the country in strategic areas: education, security and border control, infrastructure, agriculture, healthcare, media, civil society etc. As to the most important effects of EU's instruments and actions in the Republic of Moldova, in the opinion of experts, are those reflected upon the civil society engagement and media independence, gender equality in institutions, education etc. In this context, is underlined the necessity to increase the role of civil society in implementing the EU instruments. This is due to their ability to promote the Europeanization process at the local level, to produce an impact on the life of citizens in Moldova through their activities, promoting critical thinking, media literacy, gender issue aspects, rule of law, EU values and principles, encouraging people to be more civic engaged in the community at different levels etc.

As well, some barriers and problems in implementing the EU neighborhood policies in the Republic of Moldova were underlined. Among them could be mentioned predominantly: weak state institutional capacity, low level of transparency, low level of democracy and of economic development, frozen Transnistria conflict, etc. Thus, the perspectives and strategies for the future of borderland cooperation between the EU and the Republic of Moldova depend on political will and democratic political parties and their leaders who should unite their forces. In addition, the EU should decide on the future format of cooperation within the Eastern Partnership mechanism, to express more clearly the EU accession



perspectives, which will give an impulse to interested countries, including Moldova. Nevertheless, the perspectives to cooperate with EU are quite promising and encouraging, the implementation of strategies and action plans will be very tough and challenging in striving to reach the long-awaited achievements.

Therefore, the most important aspect of EU instruments applied in Eastern Neighborhood is the efficiency and motivation of the government in Chisinau. On it largely depends if all offered tools are used and all necessary reforms needed for the democratic development of the country will be realized. In this way, European integration of the Republic of Moldova must be the guideline in the country's development. EU's technical and financial assistance are vital for the development of Moldova, as the country does not have a better integrationist alternative.

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The recent international events underlined the multiple challenges that both EU and its Eastern Neighbourhood are constantly facing and to which they need to answer. From the Ukrainian crisis to the recent developments in Belarus, or the economic handicap of Eastern regions, a plethora of issues requires constant attention from the European international actors.

Under these premises, the Centre for European Studies organized this year a conference seeking to bring additional insights into the way the EU policies are being framed and adapted in order to hamper the imbalances in the borderlands between the EU and non-EU states in Eastern Europe. Besides the main topics of the event gravitating around the theoretical conceptualization and factors underpinning the EU role in the Eastern neighbourhood, additional topics were also approached: regionalization initiatives, sustainable development, EU governance and the borderlands between EU and the non-EU countries.

