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Cross-Border Youth Interaction: Importance and Experience of the EU

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Abstract

The aim of this paper is to explore the experience of young people cross-border mobility development and support programs. Cross-border interaction is one of the most important factors that develops and strengthens the commitment of young people – both as employees of an organization and as citizens of a state – to participate in public life and share cultural experiences. The mobility of young people can have a variety of motivations, but mobility for educational purposes is the most researched because of its potential transformative impact.

At the same time, researchers and enthusiasts have not sufficiently reflected on how these processes help the young generation to associate their decisions and demands from the standpoint of a stronger national identity and a positive attitude towards their country, as well as a vision of organizational and public policy. By applying elements of hindsight, induction and deduction methods, the authors update the significance of the cross-border youth interaction phenomenon and highlight the particularities of its development programs implementation.

Moreover, of particular relevance to the present research is global experience, which includes practices and programs aimed at fostering cross-border youth interaction. In this regard, the authors consider the key attributes of the methodologies of educational and socio-cultural institutions and organizations to provide young people with opportunities for multinational communication and assimilation.

Keywords: cross-border interaction, cultural transformation, national identity, youth, social mobility.

1. Introduction

Cross-border mobility refers to physical mobility within the EU countries, which, unlike migration, takes place for an intentionally limited period of time, after which its participants return

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home. This type of mobility may include, for example, interaction with peers and friends, conferences and conventions attendance, participation in educational exchange programs and international creative activities (Biermaier, 2019).

The possible results of cross-border experiences during such an important period of personal development are very broad and cover many areas, such as learning outcomes, linguistic competences, and career guidance. Moreover, there is some evidence that mobility promotes autonomy and adequacy in achieving goals and gaining control - typical developmental tasks of young people, which prevents feelings of isolation and alienation.

In recent decades, the mobility of young people and their interaction with each other through involvement in educational programs and organizational projects have increasingly been studied in terms of the further development of a national identity in young people. Most researchers refer to theoretical approaches that share an emphasis on the importance of communication and interaction between people of different national and cultural backgrounds.

German social communication theory provides valuable insights into the process of community and group identity formation: transactionalists emphasize the importance of "social communication" as a mean of identity formation both within the nation state and within transnational communities. By "social communication" or "transactional communication" the authors mean the development of sustained and widespread personal interaction between different groups. Thus, networking that connects people in multiple ways is important for the formation of a common identity and sense of belonging to the community in which one lives and develops (Mazzoni et al., 2017).

It is important to note a number of studies focusing on students' cross-national experiences in order to explore the role of mobility in reinforcing aspects of European citizenship, positive attitude towards the EU and the formation of a European identity. For example, British students who studied in continental Europe for a year were more pro-European and had a stronger European identity than students who did not study abroad (Oboruna, 2013).

In this context, it is necessary to designate Europe as a region in which cross-border cooperation programs are not limited to local initiatives and activities, but are reflected in national documents and strategic social and economic development plans. The European Union (EU) authorities actively support mobility within its borders, resulting in significant increase of the number of students participating in some comprehensive forms of education abroad in recent decades. Young people are consequently more likely to relocate to another country and adopt different cultural norms.

The borders and territories of small countries are structured in such a way that most of the European territory can be considered a border region. According to the definition of the European Commission, border regions are territorial units located directly on a state's land border. According to this definition, 21.5 % of the territory of the European Union can be considered a border region (Regions, 2018).

Throughout history, borders and border regions have played different roles by expanding and limiting European territory. The function of modern borders can be understood in different ways: as barriers, corridors, opportunities for mobility and attributes of national identity.

Regarding the first function of borders as barriers, the formation of the single European market made the limitations of state borders as economic barriers to the single market operation more evident than before. The removal of obstacles and restrictions to the free mobility of labor, capital, goods and services did not mean the end of borders – it rather involved various forms of regulation and re-regulation at both EU and global levels. The fall of the Iron Curtain marked a rapid growth of the cross-border network even along the external EU border and facilitated the role of borders as corridors providing opportunities for mobility and cross-border interaction.

At the same time borders are also a source of economic and socio-political opportunities for states and many other interest groups and social institutes. In this sense, borders can act as a source of certain resources.

The borders of the current EU states still differ between heterogenous national and regional economic systems, welfare regimes, legal, political, and cultural traditions. Borders remain optimal locations for large multinational investors due to lower labor costs, environmental regulations specifics and subsidies availability, although European integration policy aims to counter many of these trends.

In this context, cross-border cooperation is the interaction of different cultures that leads to mutual learning and integration. This environment of intercultural dialogue is an area where societal innovation is inevitably born.

Cross-border cooperation in general refers to institutionalized partnership between contiguous sub-national authorities across national borders. Cross-border cooperation is an essential element for overcoming the barriers of national borders and achieving economic, social, and territorial cohesion.

Based on the above it is advisable for the present study to consider the correlation between the export of educational services as part of non-resource exports and economic development by proving the following hypothesizes:

H1: The level of national economic development shapes the status of a foreign students recipient country;

H2: Transplantation of economic development level through cross-border educational activities in a developing economy causes a gauge effect in the development of the country as a recipient of foreign students;

H3: The education services import rate by recipient states with emerging economies is specifically accelerated by cross-border student interactions in advanced economies through recipient-donor agency relationships.

2. Materials and methods

The development of European cross-border cooperation is almost impossible to describe without the European Territorial Cooperation (ETC), better known as the Interreg initiative. The Interreg was launched in 1990 with the aim to involve border regions in "strengthening economic and social cohesion within the European Union by promoting cross-border, transnational and interregional cooperation and the balanced development of the European Union territory". Thus the Interreg program is focused on borders and border area related actions and projects implemented by the EU, its member and non-member states.

Since 1995, the Interreg Community Initiative has evolved to its current configuration consisting of three strands. Strand A for cross-border cooperation exists for the longest time and focuses on cooperation between neighbor regions and aims to develop cross-border social and economic centres through common development strategies. Strand B, which is devoted to transnational cooperation, emerged at the end of the 1990s, while the Strand C interregional cooperation programs were launched in 2000.

Conversely the Interact program has been part of the Interreg Community Initiative since 2002 and is built on the outcomes and lessons of past years to improve efficiency in subsequent decisions of future programming periods (Table 1). The core of the Interact program is the establishment of information and communication networks, defining information frameworks and flows, actively disseminating information and stimulating the exchange of experiences. Another EU funded initiative in this field is the European Spatial Planning Observation Network (ESPON), which unites the Member States for national spatial planning with a particular focus on territorial and regional development trends in Europe.

Table 1. Evolution of the Interreg initiative (INTERREG, 2021)

Criterion	Interreg I (1990-1993)	Interreg II (1994-1999)	Interreg III (2000- 2006)	Interreg IV (2007-2013)	Interreg V (2014- 2020)
Legal status	Public Initiative	Public Initiative	Integrated into the Structural Funds legislation	Integrated into the Structural Funds legislation	Own regulatory framework
Beneficiary Member States	11	15	25	27	28

(internal borders)					
Financial liabilities (current prices)	€1.1 billion	€3.8 billion	€5,8 billion	€8,7 billion	€10,1 billion

Interreg has outlined a kind of classification to lay out priorities activities and achieve the cross-border development goals and objectives. This classification outlines areas of high importance for the program and includes the following areas ([30 years of INTERREG, 2020](#)):

- Transport;
- Information Technologies (ICT);
- Power Industry;
- Environment/Quality of life;
- Threats;
- Cultural and cross-border social interaction;
- Growth, employment and competitiveness;
- Knowledge sharing/Innovation/Research;
- Education/Vocational training;
- Remote and rural development.

In the context of cross-border youth interaction, it is important to pay particular attention to such areas as "Cultural and cross-border social interaction", "Knowledge exchange/Innovation/Research" and "Training/Vocational training".

Cross-border cultural and social interaction activities and programs are considered to play significant role within the border regions. The ideas of culture and cross-border social interaction define and complement the most of the Interreg projects topics. The attractiveness of cultural and cross-border social interaction projects does not depend on factors such as the size of the population. Moreover, areas with a lower level of cultural development are also oriented towards cultural and cross-border social interaction.

The concentration of culture and social interaction is partly concentrated on the border between the old and new Member States in Central Europe, possibly due to the border regime changes due to the accession to the EU, which provides opportunities for population of these countries to participate in exchange programs more actively.

Moreover cross-border cultural and social projects can be popular precisely in areas where social, political and economic cultures do have fundamental differences and interesting features. As the example of the Finnish-Russian and Finnish-Estonian programs shows, Estonia was much closer to Finland culturally and historically than Russia. This probably explains why in the case of Finland-Russia cultural and social projects were relatively more popular: they were aimed at overcoming cultural exclusion, as in the case of Finland this was not an issue. The Finnish-Russian example also demonstrates the high popularity of economic projects. This is clearly the result of a significant gap in the levels of economic development between Eastern Finland and Russian Republic of Karelia. This gap serves as a stimulus for the development of cross-border business relations ([SEFR CBC, 2014](#)).

The "Knowledge Exchange/Innovation and Research" dimension is the second largest thematic area addressed within Interreg projects. Knowledge exchange has indirect impact on building intellectual and technology capacity in the regions. The emphasis on networking, research, innovation, knowledge exchange and institutional learning is one way to develop social and human capital through cross-border cooperation and to encourage regions to try to take a leading position in the global information society.

Thus, the experience of the Erasmus+, the European Union's non-profit student and staff exchange program between higher education institutions located the EU member states, as well as Iceland, Liechtenstein, Northern Macedonia, Norway and Turkey, contributes to changing attitudes to the concept of United Europe by highlighting the level of EU support.

About 10 % of all Interreg projects can be classified as the "Education/Training" track initiatives. Projects belonging to this direction usually deal with different types of education and

training ranging from university level courses to vocational education and training of civil servants. The importance of this theme can also be reflected in education and training as a method used to achieve cross-border integration (Cross-border cooperation, 2007).

3. Results

In December 2017, EU leaders proclaimed creation of a European Education Area as a priority for the period until 2025. The key features of this area include the following positions:

- academic mobility in learning should be the norm and the benchmark;
- universities should be able to work across borders without hindrance;
- bilingualism in addition to mother tongue should be encouraged;
- school and university degrees should be automatically and mutually recognized;
- creating conditions for everyone to feel they belong regardless of their background;
- Europe as a continent of excellence in the field of education and training.

However, these goals achievements will depend on the initial state and readiness of the national education systems in the EU Member States and external partners (Figure 1) (Erasmus 30th Anniversary, 2017).

The European Universities Initiative, which was launched in November 2019 with 17 European universities alliances and a budget of almost 85 million euros, is intended to contribute to existing problems resolution. The program paves the way for universities of the future by increasing the quality and attractiveness of European higher education and intensifying cooperation between institutions, their students and staff, thereby developing cross-border interaction between young people. The project participants list includes a wide range of the EU higher education institutions from universities of applied sciences, schools of engineering and fine arts to universities with resource-intensive research projects.



Fig. 1. Educational polarization of European Education Area program countries (Järviemi, 2016)

The selected European universities are fundamentally transforming their institutions, becoming tightly intertwined, more competitive and attractive, sharing common long-term educational strategies with stronger links to research, innovation and service to society. These education institutions as such aim for a systemic, structural and sustainable impact on society.

While some alliances comprehensively cover many fields of study, others focus on particular topics as urban coastal sustainability, social sciences or global health. Each alliance consists of an average of seven higher education institutions from across Europe, leading to new partnerships.

A kick-off event with ministers responsible for higher education, rectors and students took place in Brussels on 7 November 2019, with more than 1,000 people in the field and 7,000 people online ([Erasmus+ Annual Report, 2019](#)).

The European Commission has also launched the European Student Card program. In its first phase, it has affected more than 2,200 higher education institutions. The full buildup of this initiative in cooperation with CEF (Connecting Europe Facility) is awaited within upcoming Erasmus+ program initiatives. With financial support from the CEF, work is underway to ensure the secure identification and authentication of European students for the mobility purposes when applying for events aimed at cross-border interaction of young people as well as accessing the creation of a strong and visible European student identity ([European Solidarity Corps Report, 2019](#)).

Particular attention needs to be paid to the EU Youth Strategy, adopted at the end of 2018, based on three key objectives: engaging, uniting and empowering young people as part of cross-border youth engagement. The 2019 European Youth Week, which brought together some 120,000 young people across Europe, provided a valuable opportunity for youth engagement within the EU Youth Strategy platform.

The Youth Week was held under the motto "Democracy and Me" being focused on youth participation in decision-making and the participation of young people in society as a whole. An expert group of the conference carried out activities to review and develop the policies of selected areas of EU legislative bodies relating to youth, with the aim of creating a monitoring system for the EU Youth Strategy. About 20 Member States joined the "Future National Activities Planners" platform, providing an opportunity to share and coordinate their policy priorities in the youth field and identify cooperation needs ([Youth Strategy, 2019](#)).

The European Commission and the Council of Europe youth partnership creates proper framework for common actions on the priorities in social sphere, including youth participation and youth work. More than 174,000 young people and youth workers have benefited funding from the Erasmus+ program: either through academic exchanges or through development opportunities for youth workers. Within the ambit of these actions, the Erasmus+ program has reached a significant number of young people who would normally have had lower access to such opportunities.

Erasmus+ focuses on the principles of equal opportunities, inclusion and equity promotion. More than 67,500 people with disabilities have been part of activities aimed at developing effective communication skills through cross-border interaction practices with a wide range of cultural ideas.

The budget allocated to youth mobility projects and youth workers in 2019 reached a total of €107 million. The number of contracted projects related to youth exchanges and youth workers increased by 13.5 % in 2019 compared to 2018, and the number of participants who received funding continued to grow, reaching almost 175,000. With an average €25,000 grant per project to 25,000 institutions involved in all kinds of actions, the program demonstrates its ability to reach and assert influence over a large number of young participants and organizations.

Youth exchanges bring young people from different countries together to study outside their national education system. With an initial budget increase of more than € 70.5 million in 2019, the Erasmus+ Mobility of Students and Staff Key Action has enabled appr. 120,000 young people to take part in cross-border projects and events and develop new skills and competencies.

Youth exchanges are particularly suited to inclusive education, as evidenced by the large number of young people with special needs. Since the launch of the Erasmus+ program in 2014, more than 15,000 projects have been funded, involving 670,000 participants from program participating and partner countries with different backgrounds, proving the success of this mobility opportunity and the sustained interest of youth organizations in promoting and disseminating the principles of cross-border interaction.

Since the start of the Erasmus+ program, almost 240,000 young workers have been provided with opportunities to develop key skills and competencies through transnational training courses and seminars including cross-border interaction between participants, joint events, study visits and work shadowing by prominent business representatives, large business entities, thanks to the mobility projects for youth workers. More than 7,600 projects focusing on topics relevant to youth work and youth policy were funded, including active citizenship, democratizing young people's views and developing their aspirations to promote inclusion and equality.

The number of Erasmus+ program activities and participants continued to increase in 2019, with almost 1,700 activities involving more than 45,000 young people, compared to 1,400 activities and 37,600 participants a year earlier. The success of the campaign is also evidenced by the high satisfaction rate among participants, which was almost 95 %. Young people reported an improvement in their competencies and high satisfaction with the development of their professional (88.6 %) and personal qualities (95 %), which had been achieved through cross-border interaction and exchange of cultural and professional experiences ([Erasmus+ Annual Report, 2019](#)).

Moreover, positive feedback on participation in the Erasmus+ credit mobility program was linked to the development of cross-border contacts. Comparing incoming and returning students to the EU, it was noted that the dichotomy of passive and active citizens would be defined precisely by their mobility level, dividing citizens into active as those who are mobile and have an EU civic identity, and passive as those who stay in the country but have a strong cultural national identity.

Nevertheless, the cross-border mobility and youth interaction in the context of strengthening European civic mobility may also provoke some negative feelings among the program participants. The analysis of the experience of the Erasmus+ students from the UK and European students, who decided to spend a semester abroad in the UK, shows that long-term mobility can cause homesickness and therefore result in distress ([Downsides, 2017](#)).

The Erasmus+ program in general is oriented towards promoting the internationalization of the education, renewal, relevance and accessibility of higher education in the partner countries, as well as cooperation and exchange between program participating countries and partner countries in the field of cross-border youth development. In 2019, particular attention was paid to geographical representation diversity and least developed countries priority, as well as to the inclusion of people from disadvantaged socio-economic backgrounds and participants with special needs.

The budget for this action reflects EU external priorities and is supported by appropriate financial instruments. Capacity Building in Higher Education (CBHE) projects are multi-stakeholder partnerships between higher education institutions (HEI) from program countries and partner countries. They can also involve non-academic institutions (NGOs, enterprises, associations etc.).

There are two types of CBHE projects, each lasting for two to three years. Joint projects aim at upgrading and reforming higher education institutions, developing new curricula, improving governance and management principles, and building relationships between higher education institutions and the wider economic and social environment. Structural projects can also address policy themes and issues, paving the way for reform and change in higher education as well as in specific areas, in cooperation with national authorities and representatives of the private sector.

In 2019, 163 out of the 840 applications received were selected for funding with 142 joint projects and 21 structural projects among them. More than a third of the applications were submitted by partner countries. Islamic Republic of Iran, Iraq and Yemen submitted the largest number of applications, followed by Asia, largely due to intensive and focused regional promotion as well as online activities.

The increased involvement of higher education institutions serving not only as partners but also as facilitators in least developed countries (LDCs) is also worth noting. Good progress was also recorded in the Western Balkans and Southern Mediterranean countries, while in the other regions the situation remained largely comparable to previous years.

Almost a half of the joint projects were aimed at updating the teaching system by developing new and innovative courses and methodologies in higher education institutions in the partner countries. The most preferred disciplines in the HEIs were Engineering, Education and Environment, which accounted for about 50 % of the total number of curriculum development projects. The project partners have made great efforts to develop curricula that are better suited to the labor market offers in the partner countries. As a result, the participation of industry and socio-economic actors in project partnerships is increasing.

In 2019, ongoing CBHE projects selected under the 2016, 2017 and 2018 calls for proposals were closely monitored by the European Commission with the support of Erasmus+ national offices in the partner countries which were formerly part of the Tempus program. In addition to desktop and local monitoring of particular projects, cluster meetings between representatives of ongoing projects were organized, institutional field monitoring visits were conducted and modern online tools were used to ensure high quality project implementation and close control over these

processes. The monitoring activities have inter alia showed that multi-country and multi-regional projects tend to be more ambitious and face serious challenges due to differences between national education systems and regulatory frameworks.

Moreover, special attention is given by officials and private sector representatives to youth organizations operating in Erasmus+ participating countries and other partner countries worldwide. Such organizations share good practices and address the more professional and career needs of young people by equipping them with the skills and knowledge they need to tackle challenges and build resilience. These activities also contribute to the external objectives of EU activities through projects in four areas including the ACPALA area (ACP countries, Asia and Latin America), the Western Balkans area, the Eastern Partnership area and the Southern Mediterranean area.

In 2019, a total funding amount of €14.3 million was distributed among 121 projects, 55 of which were selected in Africa, the Caribbean, the Pacific, Asia, Latin America (ACPALA). These projects allowed participants to exchange good practices in non-formal learning methods, volunteering and youth work. They facilitated policy dialogue, collaboration, networking and the development of methods, tools and materials for working with young people ([Joint Evaluation, 2018](#)).

Another efficient way to ensure cross-border interaction of people of all ages within the framework of Erasmus+ program is creation of knowledge alliances which are structured partnerships that bring together businesses and higher education institutions to develop new ways to create, disseminate and share knowledge. These are collaborations in the development and implementation of new curricula that encourage creativity, employability and entrepreneurship and contribute to the European innovative development potential ([Youth Strategy, 2019](#)).

Knowledge alliances cover a wide range of fields of study as well as economic and social activities. The main advantage of such projects is their focus on innovative excellence and responsiveness to social needs. They stimulate and facilitate interdisciplinary and cross-border activities for the benefit of both academia and the business sector.

The projects funded in 2020 have good potential for achieving a robust level of university-business cooperation and thereby outstanding results in various areas such as agriculture, health, education, social innovation, which also relate to green entrepreneurship.

As a general objective, a number of projects will develop innovative concepts in response to the challenges faced by Europe due to digitalization, technological revolution and globalization. Furthermore, in order to face the disruptive effects of a dynamic and unstable economy, specific approaches must be implemented to enable young people to be competent, creative, flexible and entrepreneurial.

European universities alliances established within the European Universities Initiative are transnational clusters of higher education institutions from across the EU that share a long-term strategy and promote European values and identity. The initiative aims to significantly enhance student and staff mobility and to contribute to the quality, inclusiveness and competitiveness of European higher education.

The selected European universities alliances include a variety of different types of higher education institutions not limited to continent-leading research centres, but also institutions with a particular focus on applied sciences, technical fields of study and artistic specializations. These alliances have proved their willingness to change by developing their partner ties, sharing the same values and development goals in higher education with proper links to research, innovation and service to society. As a result, their joint actions will lead to systemic, structural and sustainable impact on their activities and European educational system as a whole.

Higher education institutions are capable of building an integrated system of European universities. Their long-term vision is to become the universities of the future for the graduates of the future, and to this end they are committed to constantly upgrade their teaching, learning and research methods in order to produce and disseminate innovation.

Such projects opt for finding a proper balance between education on the one hand and research and innovation on the other. To make their vision a reality, European universities are working on specific interdisciplinary challenges. They will address these issues through transnational and transdisciplinary teams of students, professors, researchers, public bodies and businesses.

In terms of the Russian Federation's participation in cross-border educational mobility, it is worth noting that, in accordance with Decree of 07.05.2018 No. 204 of President of the Russian Federation it is necessary to double the numbers of foreign nationals studying at higher education institutions and scientific organizations, as well as to implement a set of measures to employ the most talented of them in the Russian Federation.

Moreover, the goal of educational export increase has been set on the governmental level within the comprehensive plan to attract foreign nationals to study in Russian higher education institutions. This point has found its reflection in the Export of Education federal project, which is as part of the Education national project, approved by the Presidium of the Council under the RF Ministry of Education and Science in 2018.

In this context, Melikyan A.'s opinion in her paper "Internal Factors of Education Export Performance in Russian Universities" acquires a particular value. The author believes that in order to enhance their export performance, universities must develop market orientation, be ready for innovations, expand alliances with foreign universities that are active in the market, and take a professional approach to promotion of educational services by attracting marketing professionals and integrating various education marketing strategies (Melikyan, 2018).

An econometric model of the export of educational services, focusing on economic development, as well as conditions on the time lag and structure of the influence of factors, has been generated to test these hypotheses:

$$\left(\frac{FS_t^j}{FS_{t-1}^j}\right) = \beta_j \cdot \frac{GDP_{t-lag}^j}{GDP_{t-lag-1}^j} + \gamma \cdot \sum_{i=1}^n \left(\alpha_i + \beta_i \cdot \frac{GDP_{t-lag}^i}{GDP_{t-lag-1}^i}\right)$$

$$lag: R^2 = \frac{\sum_{i=1+lag}^{n-lag} \left(\left(\frac{FS_t^R}{FS_{t-1}^R}\right)_i - \left(\frac{FS_{t-1}^R}{FS_{t-1}^R}\right)\right)^2}{\sum_{i=1+lag}^{n-lag} \left(\left(\frac{FS_t^R}{FS_{t-1}^R}\right)_i - \left(\frac{FS_{t-1}^R}{FS_{t-1}^R}\right)\right)^2} \rightarrow 1$$

$$\beta_R + \gamma \rightarrow 1$$

where FS_t^j – the number of foreign students in country j in period t, GDP_t^j – is the gross domestic product (hereinafter referred to as GDP) in country j in period t, β_j, γ – composition ratio, α_i, β_i – extra factors.

The presented model has been tested during the analysis of situation in the Russian Federation and Federal Republic of Germany, which are considered as exporting educational services countries with high level of students taking part in cross-border interaction.

The following trends have been identified for the countries studied. The number of foreign students in Germany in 2020 equals 287,100, which is 366 % higher than in 2000. The number of foreign students in Russia averaged 57,400 and 330,600 in 2000 and 2020 respectively (Figure 2). At the same time it is necessary to mention that two data sources, which can be used to estimate the number of foreign students in Russia, provide contradictory data: according to the report of the Russian Ministry of Education and Science there were 324,000 foreign students in Russia while the Education in Figures statistical collection of the Higher School of Economics amounted their number as 337,100. For the purpose of the present study, it was decided to use the average value.

The second exposure for the model proposed was the GDP values of Russia and Germany, which are presented in current prices in local currency in order to ensure the most accurate economic development level definition, as the aggregate determining the cross-border mobility of students as agents of educational imports (Figure 3).

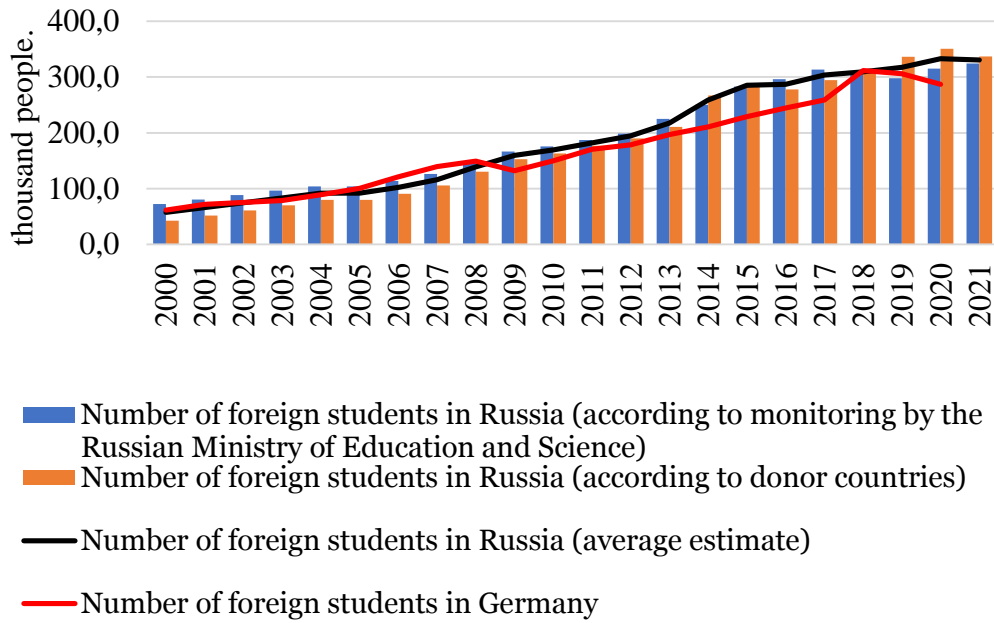


Fig. 2. International students numbers in Russia and Germany
Source: Compiled by authors

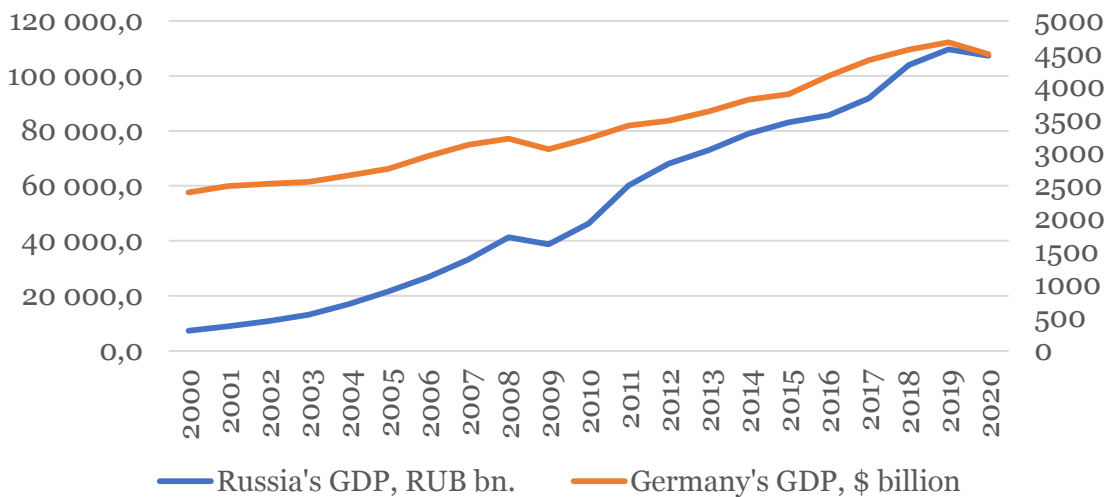


Fig. 3. GDP in Russia and Germany
Source: Compiled by authors

The average annual GDP growth rate for these countries under these conditions between 2000 and 2020 was 15.19 % and 3.36 % for Russia and Germany respectively (Figure 4).

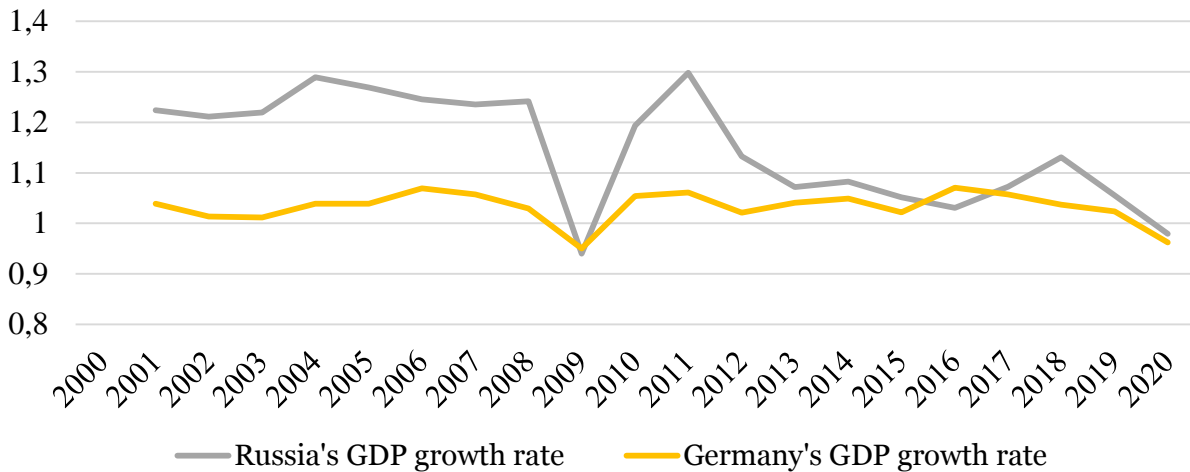


Fig. 4. GDP growth rates for Russia and Germany
Source: Compiled by authors

Thus, based on the data presented, the following model approximation results were obtained:

$$\left(\frac{\widehat{FS}_t^R}{\widehat{FS}_{t-1}^R}\right) = 0,425 \cdot \frac{GDP_{t-4}^R}{GDP_{t-5}^R} + 0,537 \cdot \left(\frac{\widehat{FS}_{t-4}^G}{\widehat{FS}_{t-5}^G}\right)$$

$$\left(\frac{\widehat{FS}_t^R}{\widehat{FS}_{t-1}^R}\right) = -0,574 + 0,425 \cdot \frac{GDP_{t-4}^R}{GDP_{t-5}^R} + 1,120 \cdot \left(\frac{GDP_{t-4}^G}{GDP_{t-5}^G}\right)$$

lag = 4: $R^2 = 0,9946$
 $\beta_R + \gamma = 0,425 + 0,537 = 0,9615$

The time lag for Russia is defined as 4 years based on the standard duration of a bachelor’s degree study program in Russia delivered in a face-to-face mode. The determination coefficient reaches its maximum value (0.9946) with the specified value of the time lag.

The qualitative characteristics of the generated model are presented in the [Table 2](#) below.

Table 2. Characteristics of the evaluated model

Factors	γ	β_R	β_G	α_G
Value	0,537	0,425	2,085	-1,070
Standard error	0,187	0,133	0,375	0,387
t-statistics	2,872	3,195	5,565	-2,764
F-statistics	1300		31	
Degree of freedom	14		18	

Source: Compiled by authors

Furthermore, in order to prove the hypotheses assigned, it is possible to use the developed model to analytically approximate the growth rates of foreign students in Russia and Germany ([Table 3](#)) taking into account a forecast for the lag period, i.e. 4 years for Russia.

Table 3. Model approximation results

Time period	The approximated growth rate of the number of foreign students in Russia	Growth rate of foreign students number in Russia	GDP growth rate in Russia	The approximated growth rate of the number of foreign students in Germany	Growth rate of foreign students number in Germany	GDP growth rate in Germany
t	$\left(\frac{FS_t^R}{FS_{t-1}^R}\right)$	$\frac{FS_t^R}{FS_{t-1}^R}$	$\frac{GDP_{t-4}^R}{GDP_{t-5}^R}$	$\left(\frac{FS_{t-4}^G}{FS_{t-5}^G}\right)$	$\frac{FS_{t-4}^G}{FS_{t-5}^G}$	$\frac{GDP_{t-4}^G}{GDP_{t-5}^G}$
2001	N/A	1,150	N/A	N/A	N/A	N/A
2002	N/A	1,130	N/A	N/A	N/A	N/A
2003	N/A	1,115	N/A	N/A	N/A	N/A
2004	N/A	1,103	N/A	N/A	N/A	N/A
2005	1,109	1,000	1,224	1,097	1,165	1,039
2006	1,075	1,115	1,211	1,044	1,052	1,014
2007	1,076	1,132	1,220	1,039	1,041	1,011
2008	1,137	1,201	1,289	1,097	1,137	1,039
2009	1,128	1,147	1,269	1,096	1,124	1,039
2010	1,152	1,063	1,246	1,161	1,206	1,070
2011	1,134	1,075	1,235	1,136	1,151	1,057
2012	1,105	1,067	1,242	1,077	1,071	1,029
2013	0,889	1,121	0,940	0,912	0,884	0,950
2014	1,113	1,188	1,193	1,128	1,135	1,054
2015	1,165	1,104	1,298	1,143	1,141	1,061
2016	1,050	1,005	1,133	1,060	1,046	1,021
2017	1,046	1,058	1,072	1,100	1,102	1,041
2018	1,060	1,019	1,083	1,118	1,071	1,049
2019	1,016	1,025	1,051	1,061	1,087	1,022
2020	1,062	1,049	1,030	1,163	1,069	1,071
2021	1,065	N/A	1,073	1,134	1,058	1,057
2022	1,067	N/A	1,131	1,093	1,204	1,037
2023	1,020	N/A	1,055	1,065	0,982	1,024
2024	0,919	N/A	0,979	0,938	0,938	0,963

Source: Compiled by authors

Based on the data on the number of foreign students in Russia growth rate, it is possible to estimate the indicator absolute variation. Thus, according to the forecast 358,300 students will study in Russian education institutions in 2022, in 2023 their amount will be 365,400 thousand learners, and in 2024 it will decrease to 335,900 people (Figure 5).

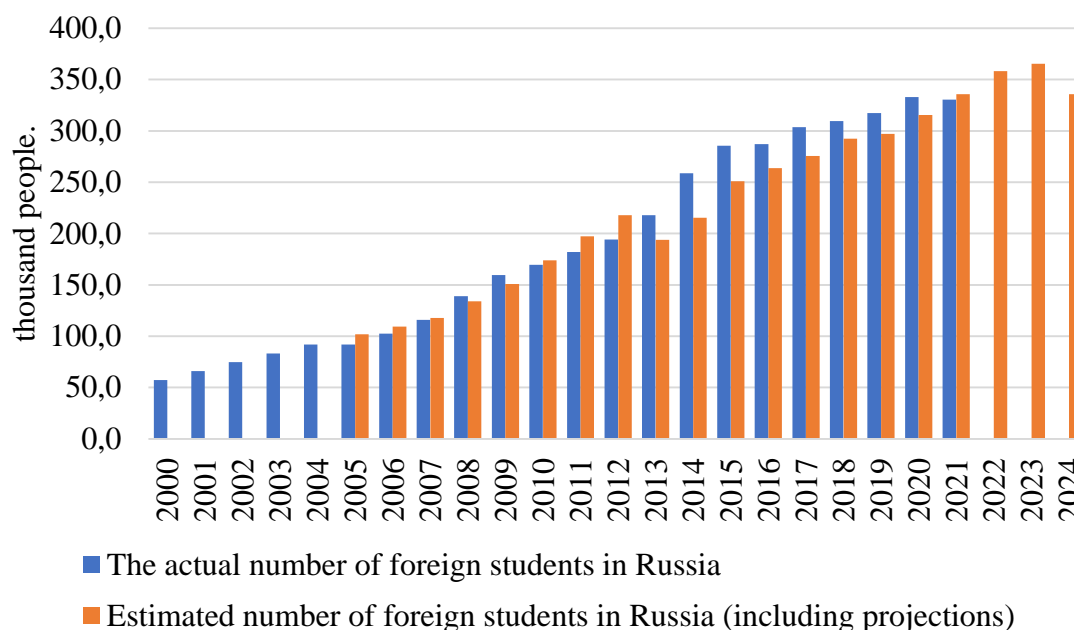


Fig. 5. Current and estimated numbers of foreign students in Russia from 2000 to 2024
Source: Compiled by authors

A less accurate forecast for the period to 2030 sets the number of foreign students in the Russian Federation at 458,300 with a standard deviation rate of 110,700. This forecast is made on the hypothetical average annual growth rate of foreign students of approximately 4.24 % from 2020 to 2030 (NB: from 2000 to 2020 the average growth rate was 9.69 % per annum).

Besides that, according to the Export of Education federal project, the number of foreign nationals studying in Russian higher education system should reach 425,000 by 2024, which is 7.27 % lower than the predicted indicator value and could approve the estimate made within the framework of the present study.

4. Discussion

Having regard to the above, it is possible to conclude that all formulated hypotheses have been verified.

Firstly, the two countries (Russia and Germany) GDP growth rate study shows a directly proportional correlation between these indicators and the foreign student number growth rate. In other words, national economic development of a country ensures its sustainable position in the international education market.

Secondly, the effect of economic development is short-term in developed countries (with a time lag of 0 to 1) and preventive (with a time lag of less than 0) for countries with expectations for accelerated socio-economic development (Figure 6).

The effect of economic development on education services export in developing countries is determined with a time lag of more than 1, i.e. more than one year is needed for cross-border mobility. This shortcoming is based on such external conditions as unstable character of national economy and high level of geopolitical externalities influence.

Thirdly, the recipient-donor agency relationship is able to condition economic development transplantation according to the size of the structural coefficient in the model presented, which is carried out through the transfer of socio-cultural values, specific mentality, as well as the quality of primary and secondary education.

Among the challenges faced by contemporary young people in cross-border and regional cooperation, the following aspects should be noted:

- Lack of knowledge and awareness on cross-border and regional cooperation, including participation in projects such as the Erasmus+ program or Council of Europe youth projects;

- Problems related to higher education institutions enrolment, lack of information and mechanisms for youth participation in policy development and its implementation on local and regional levels;
- Lack of youth engagement and motivation to participate in cross-border and regional cooperation.

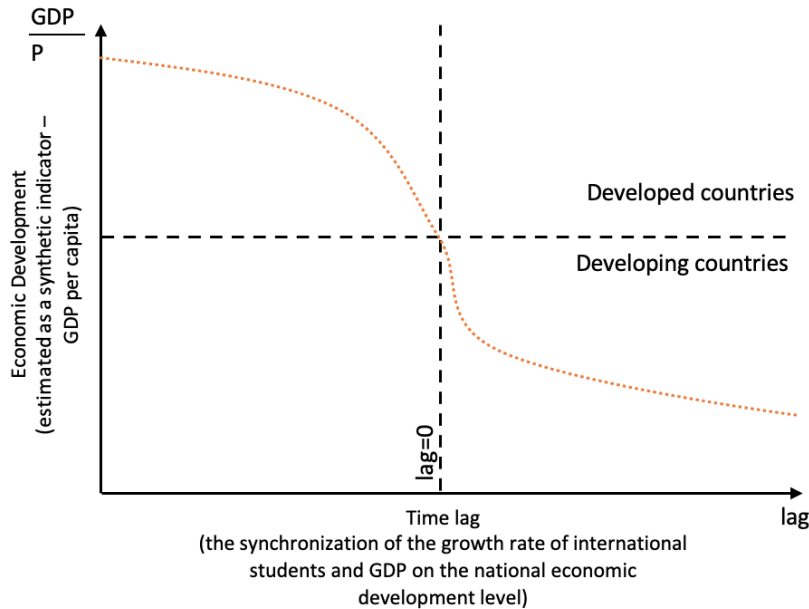


Fig. 6. Time lag graph in the synchronization of the international students and GDP growth rate on national level

Source: Compiled by authors

Economic development strengthening through the autocorrelation impact of exports of educational services within the framework of the presented model is possible through the implementation of the Formation of an educational export support and development program by reference groups of partner countries and territorial and sectoral segments of the global market in order to effectively provide export-oriented sectors of the Russian economy with highly qualified personnel key action of the Export of Education federal project within the framework of providing grants in the form of subsidies from the federal budget based on the Decree of the Government of the Russian Federation No. 569 dated 08 May, 2019.

Thus, plurality of national affiliation within cross-border student mobility is driven both by economic development itself and by imbalances in economic development between donors and recipients, but also has the potential to renew and strengthen the process complex of educational exports.

5. Conclusion

Mobility becomes the key to the young people success in the context of social change and societal change. Being the most open to solving the problems of stereotypical attitudes, which prevent society from making the most effective decisions in its most diverse fields, this population group is also more flexible and adaptive to different social and cultural experiences.

In order to overcome existing challenges, it is necessary to develop a set of measures able to cover the limitations of cross-border interaction of young people not only when implementing programs abroad, but also in the context of promoting the principles of cross-border youth interaction in Russia by adoption of the EU best practices. The following actions and measures could be included into the potential list of problem-solving tools:

- Encourage youth networking with a view to regional and cross-border cooperation;
- Supporting youth-oriented regional and cross-border ideas and activities, initiating a platform for the exchange of ideas and a dialogue between youth and experts, empowering youth to initiate and implement cross-border, regional and transnational cooperation;

- Shaping new ways of ideas and projects dissemination.

To sum up, young people themselves predetermine the uniqueness and success of many projects in the international sphere, including the development of cross-border interaction being the exact social group to effectively use the contact function of the border for interaction with representatives of different cultural and political backgrounds. In this connection young people play a decisive role in the implementation of cross-border interaction and cooperation projects developing intrinsic motivation and personal involvement in the solution of state tasks by increasing the level of involvement in the transboundary interaction processes. This factor will encourage the society as a whole to reach a new level of interaction, through which the goals and objectives towards improving the quality of life of the population and strengthening relations between countries will be finally achieved.

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