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## Analysis of Transnational Cooperation Programmes in the European Union

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Prof. dr hab. Marek Proniewski<sup>1</sup>, mgr Emilia Jankowska-Ambroziak<sup>2</sup>

**Abstract:**

**Purpose:** The aim of this paper is to denote the most intensive cooperation among transnational cooperation programmes in the programming period 2007-2013.

**Design/Methodology/Approach:** To measure the intense of transnational cooperation the authors have used two taxonomic methods that are: Perkal's Indicator and Taxonomic Measure of Development.

**Findings:** The study indicates that the programme 'Azores-Madeira-Canary-Islands (Macronesia)' is characterised with the most intensive cooperation. The factors of cooperation determined through the study are mainly a longrun cooperation that have started long before the EU structures evolved and a low number of countries cooperating within the programme.

**Practical Implications:** The paper shows factors determining the intensity of cooperation and points the EU regions where the cooperation is the most intensive. It may be a prerequisite for further studies on the regions distinguished through the study and the structures, and relationships that determine successful transnational cooperation in.

**Originality/Value:** Publications concerning transnational cooperation are not numerous in scientific literature. Most of the existing ones are prepared by European Commission and the analysis are based mainly on methods involving a survey. Due to the lack of analysis based on other methods and the lack of holistic view on the matter, the paper will contribute to the development of literature.

**Keywords:** Transnational cooperation, cohesion policy, taxonomic methods.

**JEL codes:** C10, R11

**Paper type :** Research article.

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<sup>1</sup>Professor, Faculty of Economics and Finance, University of Bialystok, Poland, [marek.proniewski@uwb.edu.pl](mailto:marek.proniewski@uwb.edu.pl)

<sup>2</sup>Research and Teaching Assistant, Faculty of Economics and Finance, University of Bialystok, Poland, [e.jankowska@uwb.edu.pl](mailto:e.jankowska@uwb.edu.pl)

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## **1. Introduction**

Transnational cooperation is a part of European Territorial Cooperation (ETC). ETC has been recognized as the third objective of the Cohesion Policy for 2007-2013, among convergence and regional competitiveness and employment (first and second goals respectively), and in the later programming period as the second goal. In earlier programming periods, ETC was not mentioned separately. Noticing the need to distinguish cooperation through Cohesion Policy, demonstrates its growing importance. It may be caused by globalization and its effects weakening the autonomy of states and their interdependence with others. The ETC is financed entirely from the European Regional Development Fund (ERDF). It was transformed from the INTERREG III Community Initiative from the previous programming period 2000-2006. Currently, ETC is divided into three types of programmes: cross-border cooperation programmes, transnational cooperation programmes and interregional cooperation programmes (Europejska Współpraca...).

ETC serves to solve problems that go beyond national borders and to develop the potential of various areas. Territorial cooperation has been noticed by the European Union (EU) and has been included in it for several programming periods. The Green Paper on Territorial Cohesion is also devoted to territorial cooperation as an important factor. The main task of the ETC is to support territorial competitiveness and to promote harmonious and balanced development of the territory of the European Community. The ETC introduces added value in the pursuit of territorial cohesion and spatial planning. Added value is understood here as an additional benefit over that achieved by national and regional authorities and the private sector (Colomb, 2007, p. 347). The above-defined added value resulting from the ETC is manifested in solving specific spatial development problems.

Transnational cooperation is carried out in large areas that are adjacent. Local, regional and national authorities are involved in its implementation (TERCO 2010). Forms of transnational cooperation vary depending on the area. They are focused on integrated spatial planning by supporting accessibility, sustainable urban development, innovation and environmental protection. Transnational cooperation tasks include support for innovation through international knowledge transfer, implementation of innovation strategies, stimulation of cooperation between scientific and research institutions, the production sector and universities, as well as by developing transnational strategies for managing demographic change and improving the accessibility of SMEs to information technology. Improvement of the access to the programme area and inside of the programme area under transnational cooperation is achieved by supporting activities in the field of ensuring multimodal transport, increasing access to information, and increasing transport safety. Another task is to increase the competitiveness of cities and regions by enabling long-lasting cooperation of metropolitan areas, reducing the negative effects of demographic changes, as well as using cultural heritage. The last task is the management of the natural environment by reducing the occurrence of disaster risk and disaster effects, and creating joint

ventures to manage protected areas. To sum up, Transnational Cooperation Operational Programmes are based on the cooperation of states. The objectives of the programmes are therefore transnational (Lechwar, 2008).

Transnational cooperation aims to organize activities conducive to integrated territorial development linked to the priorities of cohesion policy. The European Commission adopts a list of areas to be part of individual transnational cooperation programs. Delimitation of areas takes place with particular regard to the continuity of cooperation under previous programmes.

## **2. Transnational Cooperation Programmes**

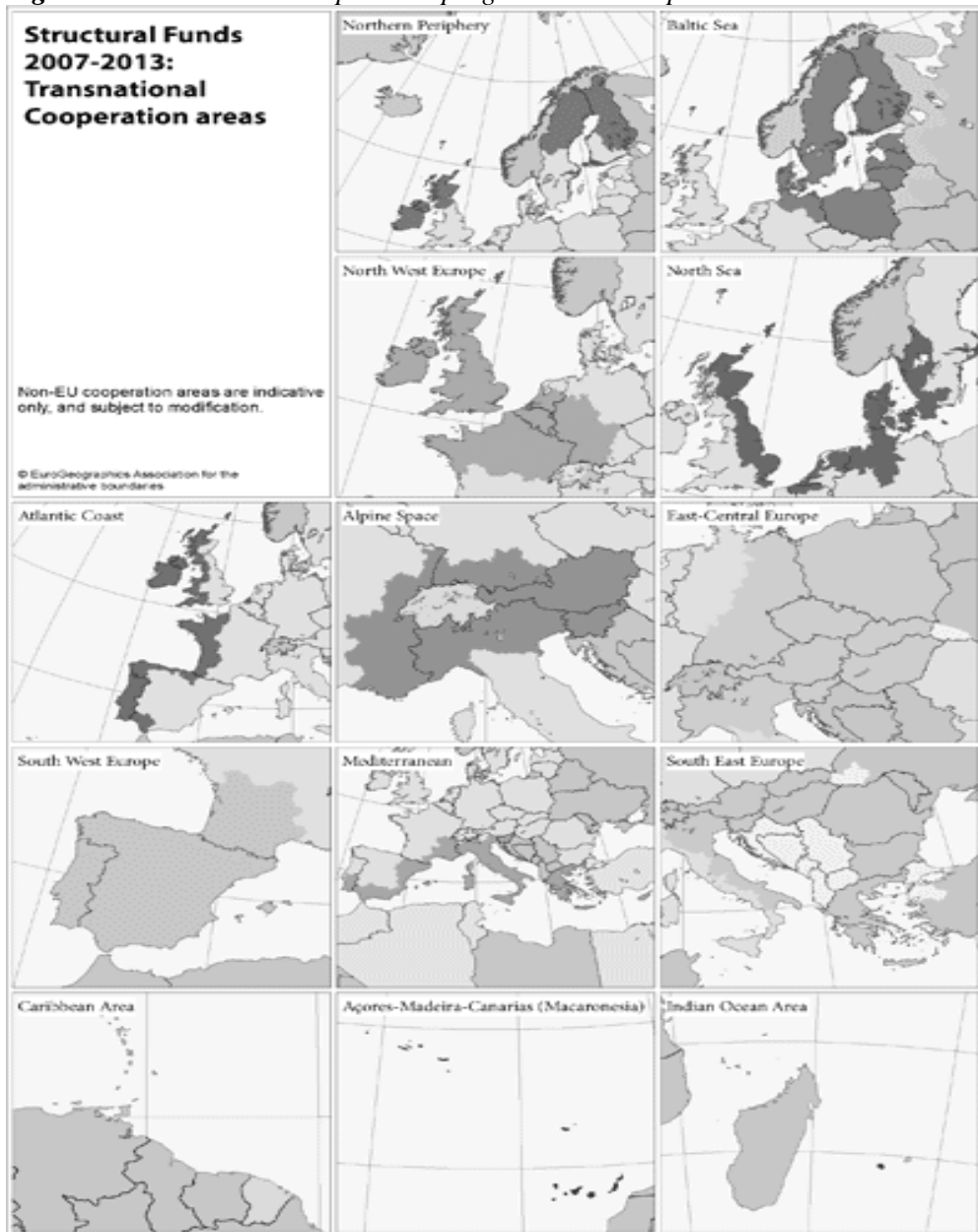
Transnational cooperation during the 2007-2013 programming period consists of 13 programmes (Figure 1). In order to select the programmes for the study one criterion was adopted: the supported areas should belong to the EU and be located within the territory of the Community. Due to this criterion, two programmes called 'Indian Ocean Area' and 'Caribbean Area' were rejected. On the Indian Ocean there is the island called Reunion, which is a French overseas territory. Along with Madagascar, Mauritius, Seychelles and Comoros, they received support under the 'Indian Ocean Area' transnational cooperation programme. The programme had a budget of 47 million euro. The second excluded programme was the 'Caribbean Area' which covered the French overseas territories of Guadeloupe, French Guiana, Martinique, the overseas communities of France - Saint Barthelémy and Saint Martin, and several other non-EU countries, in particular those belonging to CARIFORUM. The programme's budget was 64 million euro.

The remaining 11 programmes will be analysed in terms of the intensity of cooperation in programming period 2007-2013. Among the selected programmes, three deserve special attention. The programmes are 'Baltic Sea', 'South-East Europe' and 'Central Europe'. They include Albania, Belarus, Bosnia and Herzegovina, Moldova, the former Yugoslav Republic of Macedonia, Russia (Kaliningrad Oblast and North-West Russia), Serbia and Ukraine. In other words, the programmes cover a cooperation with non-EU countries. In such a case, the programmes are financed not only from ERDF but also from European Neighbourhood and Partnership Instrument (ENPI). Member countries receive support from the ERDF, and other countries from the ENPI.

In the transnational cooperation programmes also members of the Schengen area (but not EU-members) can take part in the implementation. They are Norway, Liechtenstein and Switzerland. Their areas take part in the programmes: 'Baltic Sea', 'North-West Europe', 'Alpine Space' and 'South-East Europe'. These countries do not receive EU support. They can participate in cooperation by making their own financial contribution.

The last distinguished programme is 'Azores-Madeira-Canary Islands (Macronesia). It is a programme involving three island archipelagos. It is the smallest area analysed, with the smallest number of inhabitants and located quite far away from the continental Europe. Surprisingly, it achieved great results in the area of cooperation, even though it experienced many problems.

**Figure 1.** Transnational cooperation programmes in the period 2007-2013



Source: ec.europe.eu.

Preliminary classification of transnational cooperation programmes can be done in terms of three basic indicators, i.e. population, area and population density (Table 1). The 'South-East Europe' programme is the one with the largest number of inhabitants. It has a population of about 175 million, which represents 37% of the EU's population. Bulgaria, Greece, Italy, Hungary, Austria, Romania, Slovenia, Slovakia, Croatia, Albania, Bosnia and Herzegovina, Moldova, The former Yugoslav Republic of Macedonia, Serbia, Ukraine participate in the implementation of the programme.

However, the program is ranked eight in terms of population density. Its area is second biggest but it is not densely populated. In the first place in terms of the density is the programme 'North-West Europe', i.e. Belgium, Germany, Ireland, France, Luxembourg, Netherlands, United Kingdom and Switzerland cooperation (254,20 persons per km<sup>2</sup>).

**Table 1.** Population, area and population density of transnational cooperation programmes in 2007-2013

Rank	Programme's name	Population	Area (Rank)	Population density (Rank)
1	South-East Europe	175155900	1971932 (2)	88,82 (8)
2	North-West Europe	143262100	563560 (8)	254,20 (1)
3	Central Europe	140908914	979769 (3)	143,82 (4)
4	Baltic Sea	104869116	3560760 (1)	29,45 (10)
5	Mediterranean	103619000	776621 (5)	133,42 (5)
6	South-West Europe	67495300	782455 (4)	86,26 (9)
7	Atlantic Coast	61547767	599012 (7)	102,75 (7)
8	Alpine Space	60167138	390626 (9)	154,03 (3)
9	North Sea	46398100	379322 (10)	122,32 (6)
10	Northern Periphery	7619600	617649 (6)	12,34 (11)
11	Azores - Canaries – Madeira	2427100	10571 (11)	229,59 (2)

*Source:* Own elaboration based on Eurostat database, 01.07.2019.

In terms of the area, the biggest one belongs to the 'Baltic Sea' programme. At the same time, it is almost the least populated one (29,45 people per km<sup>2</sup>). The programme covers large, sparsely populated areas of northern and north-west Russia, as well as Sweden, Finland and Norway, which are also characterised by low population density, especially in the northern part. The programme with the smallest area and population is 'Azores - Madeira - Canary Islands (Macronesia)'. However, in terms of population density, it ranks second. Madeira is the most densely populated (324 people per km<sup>2</sup>), and the least are Azores (105,7 people per km<sup>2</sup>).

An important criterion for the classification of programmes are indicators connected with their implementation. These are the budget, projects and partners taking part in the projects. These criteria will be used to present projects classification in the context of the intensity of cooperation on the transnational level.

### 3. Cooperation Intensity of Transnational Cooperation Programmes

The intensity of transnational cooperation will be measured with two methods that are Perkal's Indicator (PI) and taxonomic measure of development (TMD). The results will also form a kind of classification of transnational programmes in terms of implementation indicators. Three observations were adopted for the study, for which data were collected from the final reports of programmes, programme documents and Eurostat databases:

- X1 - budget per 10 000 inhabitants;
- X2 - number of projects per 10 000 inhabitants;
- X3 - number of project partners per 10 000 inhabitants.

The observations were characterized by a coefficient of variation of 128,8%, 76% and 179% respectively, which means that the features show very strong variability. All of them were strongly correlated (correlation coefficient ranged from 0,811 to 0,962. At the significance level of 0.05, the critical value of the correlation coefficient was 0,9969.

The Perkal's indicator method uses a simple indicator based on the arithmetic mean of selected variable observations:

$$PI = \frac{1}{n} \sum_{j=1}^n y'_{ij} \quad (1)$$

where  $y'_{ij}$  is the standardised value of j-th feature in the i-th object and  $n$  is number of objects. The values of the indicators were first standardised according to the formula:

$$y_{ij} = \frac{x_{ij} - \bar{x}_j}{s_j} \quad (2)$$

as all were considered stimulants what means that the growth of their value should have a positive impact on the intensity of cooperation.

The PI method allows one to determine the size of the unit on the basis of the features examined, allowing to arrange them, as well as to investigate the proportionality of the studied phenomenon. It was used in many works on regional development, including (Bem, Ucieklak-Jeż, Siedlecki, 2016), (Malkowska, 2015), (Namyślak, 2007) and (Perło 2014). In this study, the method allows to create a ranking of transnational cooperation programmes in terms of selected observations and to group them. Calculation results of the Perkal's Indicator usually divide the obtained values into four classes (Table 2). None of the programmes qualified for the fourth class, which

corresponds to a low intensity of cooperation. Thus, 11 transnational cooperation programmes were divided into three classes in terms of the level of intensity of cooperation measured by the features X1, X2 and X3. Only the program 'Azores-Madeira-Canary Islands (Macronesia)' qualified to the first class according to the PI indicator. The programme achieved a result significantly different from the others (2,97). Due to the low population density, the programme budget per 10 000 inhabitants is high (27 euro). This is a very high value compared to other transnational programmes. However, comparing the total budget, it is the smallest among all transnational cooperation programmes. As many as 122 projects were implemented in the programme area with the participation of 1809 project partners. These are the second and first values in the ranking. The 'Azores-Madeira-Canary Islands (Macronesia)' programme distinguishes itself very positively from the others. Despite receiving a low total budget, in the programme area it was possible to implement a great number of projects and to involve many project partners.

**Table 2.** *Classes of intensity of transnational cooperation for PI and TMD*

Class	Range	Intensity of cooperation
1	$PI/TMD > \bar{x} + s$	very high
2	$\bar{x} + s > PI/TMD > \bar{x}$	High
3	$\bar{x} - s < PI/TMD < \bar{x}$	Medium
4	$PI/TMD < \bar{x} - s$	Low

Next programme that is 'Northern Periphery' is in the second class. It has the highest budget per 10 000 inhabitants (12,38 euro). In terms of the number of projects (43) and partners (331), this programme ranks last. However, when calculated per 10 000 inhabitants, these achievements are much better. This is due to the fact that 'Northern Periphery' is an area with a very small number of inhabitants.

The remaining nine programmes were in the third class, which corresponds to the average level of cooperation intensity. The programme taking the last place in the ranking is 'North-West Europe'. It had the highest budget granted under transnational cooperation (696 million euro). However, in terms of budget per 10 000 inhabitants, it ranks fourth. The intensity of cooperation would not be the weakest, if one looked at the total numbers such as 114 projects implemented with the participation of 1414 partners. Despite this, with such a great number of inhabitants, these values are the poorest when divided by the population in comparison with other regions.

To compare the results, another method of programme classification was used. The Taxonomic Measure of Development (TMD) according to Hellwig's concept was used before in the works of (Becker and Becker, 2009), (Pietrzak, 2014) and many others. As a part of this method, a synthetic development indicator is constructed based on partial measures, which illustrate selected aspects of the development, in this case - the intensity of cooperation:

$$TMD = 1 - \frac{d_i}{d_0} \quad (i = 1, 2, \dots, n) \quad (3)$$

where:  $d_0 = \max d_i$  and  $d_i$  - is the distance from the  $i$ -th object of the pattern determined according to the formula:

$$d_i = \sqrt{\sum_{j=1}^m (z_{ij} - z_{oj})^2} \quad (i = 1, 2, \dots, n) \quad (4)$$

where  $z_{ij}$  is a standardised value of the  $j$ -th feature in the  $i$ -th object and  $z_{oj}$  is the development pattern for which the object with the highest values was considered.

To construct TMD indicator the features X1, X2 and X3 were chosen, the same as for the PI calculations. The values were standardised basing on the (2) pattern and in the end they were grouped into classes using the method from Table 2.

**Table 3.** Perkal's indicator and TMD results for transnational cooperation programme in 2007-2013

Programme's name	PI	Class		Class	TMR	Programme's name
Madeira - Açores - Canarias	2,98	1		1	0,0075	Madeira - Açores - Canarias
Northern Periphery	0,29	2	←	2	0,0039	South-West Europe
South-West Europe	-0,13	3	←	2	0,0032	Mediterranean Sea
Mediterranean Sea	-0,22	3	←	3	0,0028	Northern Periphery
North Sea	-0,29	3	←	3	0,0027	South-East Europe
Atlantic Coast	-0,39	3	←	3	0,0026	Atlantic Coast
South-East Europe	-0,41	3	←	3	0,0025	Alpine Space
Alpine Space	-0,41	3	←	3	0,0025	Central Europe
Central Europe	-0,44	3	←	3	0,0022	Baltic Sea
Baltic Sea	-0,46	3	←	3	0,0020	North Sea
North-West Europe	-0,52	3	←	3	0,0016	North-West Europe

**Source:** Own elaboration based on Eurostat database, keep.eu database, programmes' documents and evaluation reports, 10.06.2019.

In this method, the classification of programmes looks quite similar (Table 3). The TMD also divides the given indicators into four classes. But, as in the case of PI, the fourth class, representing a low intensity of cooperation, was not created. The first class is also the 'Azores-Madeira-Canary Islands (Macronesia)' programme. However, there are significant differences in the second class. In the case of TMD, it includes two programmes: 'South-West Europe' and 'Mediterranean'. The 'Northern Periphery' programme lost its second position and is the first programme in the third class (fourth position in the ranking). The third class consists of eight programmes that appear in a different order than in the case of PI. The largest decrease was recorded for the 'North Sea' programme - by five positions. There were no changes in case of the last place.



The introduced classification is an attempt to rank the transnational cooperation programmes, choose the best and worst ones in terms of cooperation intensity. It is also an attempt to further analysis of the factors influencing the cooperation between different regions. The study points 'Azores-Madeira-Canary Islands (Macronesia)' programme as the one with the highest intensity of cooperation. Its budget per 10 000 inhabitants is the highest and this factor could be the key for successful cooperation. However, it is not the only one. This situation is strongly influenced by the fact that the region was territorially and historically integrated. Analysing the social and economic background of the programme area one could observe that the cooperation has appeared in there much earlier than the INTERREG started. Many other cases of cooperation prove that the longer it lasts the better its results are. Time allows to solve problems, enhance the relations between the regions and thoroughly indicate the topic of cooperation. Although the regions are far apart and have a great barrier in the form of sea borders, the similarity of the area and previous connections have facilitated the identification of common priorities and needs (Ex-post evaluation...). Both 'Azores-Madeira-Canary Islands (Macronesia)' area and also parts of 'Northern Periphery' area are considered to be peripheral regions (Proniewski, 2012) in terms of their location. This disadvantage did not lead to worse usage of the EU funds.

Another factor determining the success of cooperation among the archipelagos is the small number of participant countries cooperating. In case of 'Azores-Madeira-Canary Islands (Macronesia)' only two countries cooperate, in case of 'Northern Periphery' – four countries and in case of 'South-West Europe' – three countries cooperate. When the number of cooperating sides is smaller it could be much easier to set common goals and approach common problems. However, the 'Mediterranean' programme consists of seven cooperating countries and its result is quite high too. It is the programme with the highest intensity level among the ones with greater number of members, that are almost all the programmes in the third class (according to PI indicator). What is more, the first three programmes' participants are the "Old Union" countries, meaning that their seniority in the EU structures is long. Longer seniority may have a crucial impact on the experience with gaining cooperation partners and knowledge of cooperation structures needed to hold it effectively. The 'Mediterranean' is again an exception as some its participants were countries that were not EU members at all (seniority is not the case).

The worst in terms of cooperation intensity is 'North-West Europe' programme. The programme is fourth in case of the budget per 10 000 inhabitants, though in its area the least projects were done and they engaged the smallest number of partners. In the programme the sea border barrier exists only for Ireland and Great Britain. The other member countries are located in continental Europe and are close neighbours. Even though no such barriers occur these, the programme is the last one in both PI and TMD rankings. Due to the division of the values per 10 000 inhabitants the programme results are not so high. For such a big population they were expected to be higher (taking into account quite a high budget). The potential of the great number of inhabitants could cause more activity in the area of creating projects and participation

of partners. However, there were programmes where despite the fact that the area is sparsely populated like in the 'Northern Periphery', the intensity of cooperation in the programme was very high.

Transnational cooperation is being continued in the 2014-2020 programming period. It consists of 15 programmes. Analysing the scope of this level of cooperation in the long term, some changes are noticeable. Main changes are new areas included in the cooperation, changes in the names or in the area of some programmes. Another change is the switch of paradigm from spatial planning to thematic cooperation in some programmes. Issues that need to be revised in the future concern the agreement by the whole governance with the aim to create such a financial cooperation tool and prevention of overlaps of thematics and areas of cooperation in the programmes (Louwers, 2018).

#### **4. Conclusion**

Territorial cooperation is a very complex issue to discuss. One of the most important factors determining the success in this field are common relations between the regions that cooperate. If they are good the cooperation is usually more successful. Such factors as common culture and language also determine the cooperation. Another dependence is also the fact that the bigger number of regions cooperate the more difficult the cooperation is. That is why, the cooperation on cross-border level is considered to be more successful when compared to the transnational one. On cross-border level the average number of cooperating countries is two (Jankowska-Ambroziak, 2019), whereas on the transnational level usually about seven countries cooperate together under one programme. However, larger area in which the transnational cooperation is implemented presents a different dimension. Thanks to that it ensures spatial coherence on a larger scale, what is impossible on a cross-border level. That is why spatial coherence is one of the main goals of transnational cooperation.

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