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ARTICLE



# A multidimensional measurement of the integration between European border regions

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## ABSTRACT

Cross-border integration in Europe is a complex and multifaceted process, which has contrasted impacts on border regions. In order to contribute to better depict it, this paper provides, with the help of statistical indicators, a systematic and multidimensional analysis of cross-border integration along all the EU internal borders. It highlights the similarities and discrepancies that can be observed between the different European regions with regards to the intensity of cross-border practices (the functional dimension of cross-border integration), the level of mutual social trust between border populations (the ideational dimension), and the involvement of stakeholders in cross-border cooperation projects (the institutional dimension). The different patterns that emerge from this analysis show that there can be no unique cross-border cooperation strategy at the EU scale to accompany the dismantlement of EU internal borders.

## KEYWORDS

Cross-border integration;  
border region; perceptions;  
cross-border cooperation;  
Europe

## Introduction

For the inhabitants of border regions within the European Union (EU) and more specifically within the Schengen area, it is fascinating to measure the extent of the changes that have occurred since the times when borders still constituted obstacles to the flows of people. There have been many achievements since the creation of the European Coal and Steel Community in 1952; the first step toward the creation of the European Economic Community. The objectives of this first supranational structure were at this time to pool resources in order to create economic relationships that would be so strong they would discourage anyone from engaging in a new conflict. 'The solidarity in production thus established will make it plain that any war between France and Germany becomes not merely unthinkable, but materially impossible'. (Declaration of 9 May 1950 delivered by Robert Schuman). Since then, references to peacekeeping in Europe have disappeared from the institutional rhetoric of the EU in favor of territorial cooperation and cross-border cooperation. Peace seems probably so much embedded in collective perceptions that its evocation is no longer politically profitable to support the European integration project, even if the recent history in the neighboring regions of the EU should force us all to be far more cautious.

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The European integration policy has largely influenced the way borders can be crossed, and interactions and flows on both sides of the border have boomed over recent decades. The first areas to benefit directly from the opening of borders are border regions, which have become places of economic and social exchanges, but also fertile ground for territorial cooperation and institutional innovation (De Sousa 2013). For some researchers, border regions thus constitute the 'laboratories of Europe' (Kramsch and Hooper 2004, 3). They are spaces of friction, of meetings, sometimes of tensions, but also of emulation and institutional invention. The European construction, which has enhanced the regional scale (Paasi 2009) by creating in 1975 the European Regional Development Fund, has paid particular attention to the border regions with the establishment of the Interreg tool, the first program of which started in 1989. From its conception until the current program period, which will end in 2020, approximately 30 billion euros will have been spent 'to promote cooperation between border regions' and 'to address common challenges and activate the potential for economic growth', to reuse the EU rhetoric. The recent communication by the European Commission entitled 'Boosting Growth and Cohesion in EU Border Regions' (2017) places the emphasis on what are considered to be the most important current issues for border regions: the improvement of connectivity between border territories, economic growth, and more so the multiplication of projects dedicated to the protection of the environment and public health. The Commission also regards border regions as spaces 'where the European integration process should be felt most positively – studying, training, working, caring and doing business across borders are all daily activities that should be possible regardless of the existence of an administrative national border' (European Commission, 2017, 3). This rhetoric in favor of increased exchanges and reduced differences around borders has led to the emergence of the policy paradigm of cross-border integration. However, and from a more academic perspective, the concept of cross-border integration remains quite vague, even though the changes of the nature of borders in Europe have generated an impressive multiplication of publications about the interactions that exist between border regions. The diversity of these approaches complicates the development of a consensual theoretical framework that is shared and accepted by the scientific community (Kolossoff and Scott 2013), and raises the question whether a border theory is possible or not just an 'unattainable dream' (Paasi 2011, 11). Nevertheless, it seems that there is still a need for analytical grids that articulate theoretical and applied approaches to cross-border integration.

The purpose of this article is to contribute to such an objective by presenting a systematic approach about the cross-border integration process at work along the internal borders of the EU. Its scope is more descriptive and comprehensive, and does not claim to provide any explanatory elements to the phenomena it depicts. It is indeed impossible to identify causal relationships or explanatory factors given the multiplicity of spatial, historical, cultural and legal contexts that constitute the European patchwork of border regions. The contributions of this work are therefore (i) to cover all the European borders, (ii) to observe cross-border integration through different lenses, which refer to the different dimensions of the concept, and (iii) to pinpoint the different patterns of cross-border integration in the different EU regional groupings. In doing so, the aim is to better recognize the diversity of cross-border configurations, which is a necessary first step toward the identification of priorities for political action.

The article first provides a brief 'state of the art' regarding the different scientific approaches employed to investigate the cross-border integration process and to categorize it, with the help of typologies. The objectives of the literature review are to show how the

concept of cross-border integration has been approached by border scholars so far and to highlight the different typologies on cross-border integration conceived in relation to these approaches. This overview of the scientific literature will help the reader to properly understand the purpose of the typology that we will present in the second part, which aims at filling a gap between, on the one hand, case-study approaches, and on the other hand, theoretical approaches that aim to provide general insights but often lack empirical validations. In the second part, the theoretical foundations and the methodology used in this work to depict the cross-border integration process will be explained. Lastly, the results will be revealed through a set of maps and a regional typology of cross-border integration patterns in Europe.

## Overview of approaches to cross-border integration

For the last thirty years, the issue of cross-border integration has been addressed through research works on the mutation of borders and on the progressive constitution of cross-border regions, whether through a process of institutional formalization or through the multiplication of flows and exchanges that *de facto* generate functionally integrated spaces across borders. This abundance of scientific outputs was stimulated by the major geopolitical events of the late 1980s and early 1990s. For some authors, these events seemed to predict the end of state borders in a double context of the building of European unity on the one hand and the fall of the Berlin Wall and of the Soviet Union on the other. The concept of a 'borderless world' (Ohmae 1990) thus translated this faith into a supposed disappearance of borders and ultimately of nation states, understood as mere political constructions that had become obsolete, especially for companies. However, the socio-cultural approaches very quickly brought out the fact that, far from disappearing, borders were mutating and reflected 'the processes in which territories and their contested meanings are socially and culturally constructed' (Paasi 2001, 16). These changes have obviously pushed researchers to examine the cross-border interactions and the dynamics of convergence within cross-border regions, as well as the 'engine of connectivity' or the opportunities provided by the cross-border context (Johnson et al. 2011). The spectrum of approaches to the cross-border integration issue has been opened up, and currently it is broadly diversified. In the next section, we propose to classify the existing works according first to their thematic and second to their heuristic scope: do they focus on a case study or do they aim to contribute to a general theory about borders?

## The diversity of the thematic approaches to address cross-border integration

Van Houtum (2000) categorized in a synthetic way the three main approaches used by the scientific community to investigate borders and border regions: the 'flow approach,' the 'cross-border cooperation approach,' and the 'people approach.' It is also a relevant basis to distinguish the different approaches to cross-border integration. The 'flow approach' is inspired by economic geography, and tends to identify borders as barriers to economic flows. In this branch of literature, numerous works have been carried out to study the impacts of border effects on regional trade patterns notably through the use of a gravitational framework model (McCallum 1995) or the measurement of supply-side border effects (Cappello, Caragliu, and Fratesi 2018a). Furthermore, recent works have shown that at the opposite from general belief *'under-endowment and inefficiency in the*

*use of internal resources are relatively uncommon*' in border regions (Cappello, Caragliu, and Fratesi 2018b, 775). By extending the definition of the flow approach, we could also imagine attaching to this category of works all that has been written about cross-border exchanges and practices. Indeed, the opening up of borders has allowed individuals to exploit the differences that exist on either side of borders (with regard to prices, taxation, and regulatory constraints for a variety of products and services), thus leading some scholars to consider borders as 'assets' or 'resources' (Van Geenhuizen and Ratti 2001; Sohn 2014). From this perspective, House (1980) theorized several cross-border integration models based on the nature of flows (labor, capital, and public services) and the direction of transactional flows. The flow approach tends to associate the cross-border integration process to the emergence of functionally coherent cross-border spaces due to the rise of market-driven interactions.

The second approach is illustrated by an important strand of literature focusing on the invention of new forms and tools of cooperation and on the establishment of actors' networks to frame the cross-border governance. Typologies seeking to categorize cooperative approaches between actors have thus been produced. Perkmann (2003) distinguished several types of institutional border regions, based on three dimensions: their geographical scope, their cooperation intensity, and the type of actors involved. Deducted from observations in North America and Europe, Blatter (2001) proposed not a typology but rather ideal-types of cross-border cooperation structures that stem from the combination of the fundamental nature of institutions and the ways they are produced, either formally or informally.

The third approach is more sociological and puts to the fore the people, their perceptions, cognitions, reactions and identity formation in border or cross-border contexts. While the lifting of customs and tariff barriers has greatly facilitated all types of exchanges between countries, borders continue to differentiate and separate social groups and to be used as markers of these differences. However, to our knowledge, there is no typology of border regions based on the perceptions that individuals have of their foreign neighbors, even if there are many case-study analyses on these aspects and on the resilience of borders in people's minds. A broad spectrum of approaches is mobilized to address these issues. Mostly, they are case studies highlighting the differences existing on either side of the borders, or by contrast, underlining the similarities that bind the border populations. The vast majority of these works adopt historical (Stoklosa and Besier 2014) or anthropological perspectives (Wilson and Donnan 2012), which reveal people's perceptions through narratives. The 'Border Identities' research project is an excellent example of this strand of research. Comparisons exist between border regions, but they often occur at the national level and emphasize differences and/or cultural similarities, expansion, or interpenetration of linguistic areas (e.g. Haarmann 2011).

These three strands to approach cross-border integration show that this process is a multidimensional one, and that a single reading of this phenomenon can be misleading or can potentially give too much importance to one dimension at the expenses of the others. This is why we claim that in order to understand it as a whole, cross-border integration should be analyzed through a multidimensional approach. In addition, and beyond the question of the theme addressed, it seems important to differentiate the works related to cross-border integration according to whether they focus on a case study or whether they try to provide theoretical insights, for instance through modelling approaches.

### *Case-study approach, modelling approach and systematic observations*

Border studies are confronted with a frequent problem in social sciences, which is the articulation of the general and the particular, or in other words, between idiographic and nomothetic approaches. Although a general border theory is not achievable and should not be attempted (Paasi 2011, 27), complementary theoretical frameworks and a deeper understanding of the different contexts (spatial, historical, economic) of border regions and how they influence cross-border relationships and interactions are still needed. However, how to develop a theoretical framework that can help to unpack the complexity of borders when each border region has a particular history and territorial identity, and is in permanent evolution? Is such a theoretical framework the 'unattainable dream' that Paasi evokes when he refers to a border theory (2011)? Opting for an intermediate choice between the case study approach and an attempt toward generalization, many studies have favored comparative approaches between two or more case studies (Perkmann 2007; Medeiros 2010; Decoville, Durand, and Feltgen 2015). Nevertheless, these works remain limited by the number of observations they rely on. These attempts have often led to the production of typologies, based on a limited set of observations. Among these typologies, Strassoldo defined four types of border regions based on the degree of permeability of the borders and on the nature of the power relations that are exerted by a state on the national or neighboring border space (1974). The typology of Martinez (1994) focuses on the dynamics of cross-border interactions and proposes four models of interactions: alienated, coexisting, interdependent, and integrated. In so doing, he highlights that the relations between the inhabitants of the border regions are far from being established on an egalitarian basis, and that relations of domination (in particular economic ones) can exist. The work of Decoville et al. (2013), which deals more specifically with metropolitan cross-border areas, shows that cross-border interactions can lead to three standard models of integration: specialization, polarization, or osmosis. Lastly, other typologies of border regions have placed more emphasis on the political or historical aspects of states and borders, such as the typology of Bufon and Markelj (2010). Ratti and Schuler (2013) also proposed another typology that differentiates border regions by crossing the spatial expression of the border (line–zone–global) with conceptions associated with it (fixed–mobile–opened to the 'horizon'). All these works are attempts to categorize cross-border spaces based on standard models of cross-border integration.

Finally, other types of work have provided systematic observations of cross-border integration contexts at EU level, but most of the time focusing on a single dimension of the process. Some descriptive typologies of border regions put emphasis on spatial aspects, in particular through projects carried out within the framework of ESPON (the European Observation Network for Territorial Development and Cohesion). In the report entitled 'Study on Urban Functions,' a theoretical classification of cross-border urban areas in Europe is proposed, based on the morphological and functional characteristics of the functional cross-border urban areas (ESPON 2007). In another work, Topaloglou et al. (2005) have incorporated quantitative and qualitative data on the socioeconomic dynamics of NUTS 3 regions and highlighted a strong heterogeneity of regional profiles. They have shown a clear distinction between border regions of the countries that joined the EU before 2004, and those of countries that joined it after. More recently, a report

also determined a socioeconomic typology of border regions in Europe, which aims at revealing the potential for relationships between border regions (complementarity, dependence, unfavorable profile of border relations, etc.) (RIATE 2016).

### ***Synthesis of approaches to cross-border integration and the positioning of this contribution***

Beyond the major distinctions already emphasized, others can be made. While some of the approaches analyze cross-border integration in a static way, and therefore record a situation at a given time, for example, by measuring cross-border integration through a relational approach with social network analysis tools (Svensson and Nordlund 2015), others focus on the dynamic aspect and therefore allow to highlight how the situation of cross-border integration is evolving with regard to the different possible paths of 'bordering/de-bordering/re-bordering' or even 'a-bordering' (Durand and Perrin 2017), or 'unbounding and rebounding' (Zielonka 2017). This brief overview of the different types of works illustrates the wide variety of approaches used to address cross-border integration (Table 1).

These different approaches of cross-border integration show that there is still a need for works which describe this process through a multidimensional and systematic approach. In the following section, we present the methodology and the data used. Then, we propose a regional typology of internal EU cross-border areas which relies on the similarities and differences that can be observed regarding the dynamics of cross-border integration.

### **Theoretical framework and methodology**

Based on the three research trends identified by Van Houtum (2000) and mentioned in the first part, this article relies on the idea that the cross-border integration process encompasses three main dimensions (Decoville and Durand 2016, 2018). The three dimensions for analyzing cross-border integration processes are the functional, the institutional, and the ideational. In this paper, the three dimensions are illustrated and measured using statistical indicators based on variables that were collected in the same way in all the cross-border regions of Europe.

From a conceptual perspective, the functional dimension points out all the cross-border flows and interactions initiated by individuals, companies, and other collective actors. The institutional dimension refers, in a broad manner, to all the more or less formalized and flexible exchanges that occur, at the cross-border scale, between different types of actors, such as public institutions, civil society, entrepreneurs, etc. It considers the cross-border

**Table 1.** Diversity of the approaches followed in border studies concerning cross-border integration.

Scope of analysis	Range of variation	
	narrow ←	→ broad
Thematic	monothematic	multi-thematic
Spatial coverage	case-study	systematic, comprehensive
Observation period	snapshot	dynamic
Objective	descriptive	explanatory



networks of actors who work together towards greater integration. Lastly, the ideational dimension indicates encompasses the perceptions and representations that a border society has of the neighboring foreign society; between openness and rejection, trust and mistrust, attraction and repulsion. This dimension is steeped in history and symbols, and is therefore more complex to systematically investigate than the other dimensions. It is nonetheless fundamental, because it certainly explains a great deal of the behavior that works in favor of or against more interactions and cooperation. For instance, Cappello and colleagues have shown that *'a lack of trust in neighboring regions and/or different languages spoken, generates a discontinuity in the traditional spatial decay function, and limits the access to intermediate goods and to geographically close labor markets'* (Cappello, Caragliu, and Fratesi 2018c, 502). Taking these three dimensions into account and addressing them provides a relatively comprehensive perspective on cross-border integration processes.

Two different datasets were used to enable the measurement of the three dimensions. The indicators related to the functional and the ideational dimensions make use of the same dataset, which was produced in the frame of the Eurobarometer survey 422 (European Commission 2015a), for the European Commission's Directorate-General for Regional and Urban Policy, and coordinated by the Directorate-General for Communication. In total, 123 border regions were investigated, which represent the 54 different cross-border cooperation programs. 40,619 people responded to the survey by telephone in June 2015, and it remains the most comprehensive survey on cross-border practices and perceptions. The value that we use to characterize the degree of interpenetration (functional dimension) reflects the average number of cross-border activities realized yearly by the people that were interviewed within the framework of this survey. All the border regions that were taking part in an Interreg A program (dedicated to cross-border cooperation) were investigated, and the results are provided at the NUTS 3 spatial level. The question selected is: 'How often do you go to [country from program] for each of the following reasons?' The potential answers are: 'to visit family,' 'to visit friends,' 'to use public services,' 'to shop for goods or services,' 'for work or business purposes,' and 'for leisure activities including tourist visits.' For the purpose of the current paper, the results were weighted by the frequency given by each interviewee. For those who responded 'once a month or more often,' the value of 18 annual activities in the neighboring region per year was given, for 'several times a year,' the value of 6, and for 'once a year or less often,' the value of 0.5. An estimation was then obtained, which reflects the overall number of activities realized in a neighboring foreign region per interviewee and per year, by dividing the total score by the total number of respondents in each region<sup>1</sup>.

The institutional dimension relating to cooperation and networking is approached through the number of actors formally involved in Interreg A projects (under the Interreg A program for the period 2007–2013), weighted by the number of inhabitants of each NUTS 3 taken into account in our study. The data used comes from a 2015 study carried out for the European Commission<sup>2</sup> (2015b). The spatial restitution of this information was chosen to ease comparisons with the other indicators. The institutional dimension's indicator provides information about the dynamic of cooperation approached by the concrete involvement of actors within cross-border projects during this period of the Interreg A program. It does not accurately reflect the degree of involvement of each actor in the implementation of a project, but it nevertheless offers a general idea of the willingness of stakeholders to join a cross-border consortium and



to get involved in cooperation projects. Of course, the potential findings should be nuanced by the fact that some Interreg projects are implemented for opportunistic reasons in order to obtain public subsidies (Scott 1999), without really serving the objective of improving cross-border institutional integration.

As already mentioned, the ideational dimension of cross-border integration is the most complex one to measure systematically across all European borders, because it stems from collective representations that result from very different causes, always ingrained in a local context. While no single indicator can claim to provide a fully satisfactory representation of this ideational dimension, the Eurobarometer 422 survey has the merit of providing respondents' answers to a question that was presented the same way in all the EU internal border regions that belong to an Interreg A cooperation program, thereby allowing cross-comparisons. For our study, the relevant question is: 'Would you personally feel comfortable or uncomfortable about having a citizen from [another country in the Interreg A program in the respondent's region] as (i) your manager, (ii) your work colleague, (iii) your neighbor, (iv) a family member?' The percentage of people who answered that they feel comfortable with all the social categories was selected as an approximation of the quality of perception that border societies have of their foreign neighbors. This question was aimed at revealing the level of social mutual trust that the residents of border regions have with regard to their foreign neighbors.

This paper does not aim to unravel the reasons why the process of cross-border integration is taking place in a differentiated way within the EU's internal borders, but more modestly to propose a systematic analysis of the different borders contexts, using the indicators mentioned above. However, before proceeding further, it seems important to point out the limits of the empirical approach followed here. The collection of data via the Eurobarometer survey and via the study for the European Commission on Interreg A projects involves some methodological biases that should be kept in mind when interpreting the results. First, the Eurobarometer survey was conducted in regions that were eligible for the Interreg A funds, and the size of these geographical entities vary substantially from one cross-border region to another. Since people who live closer to a border are more likely to cross it frequently than those who live further from it, we can assume that the figures obtained in the different regions do not reflect in a fully comparable way the propensity of people to cross the border or to have trust in their neighbors at a given physical distance from the border. Secondly, both data sources are only 'snapshots,' and do not allow any assessment of the evolution of the situation. Last but not least, if the dataset used and the indicators produced offer a certain perspective about the three dimensions of cross-border integration on all Europe's internal borders, they represent only a part of each dimension. The complexity of this multidimensional process cannot be entirely addressed through a limited number of indicators. De facto, the simplification introduced by indicators cannot generate a fine interpretation of a complex phenomenon (Decoville 2018), but merely can contribute to highlight its main features.

## **Measurements of the level of cross-border integration of border areas in Europe**

In a first step, the results obtained for each of the three indicators presented above are analyzed individually and mapped, thus allowing us to identify some tendencies in space. In

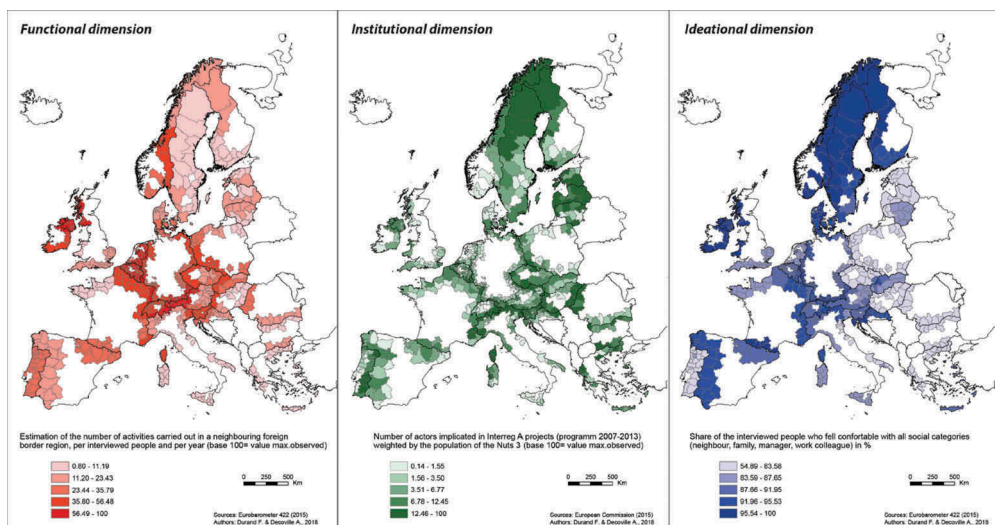
a second step, a ranking of the cross-border integration of border areas based on a synthesis of the three dimensions is realized.

### *Three indicators of cross-border integration*

In order to be able to compare the results obtained by each region for each of the three indicators more easily, all the indicators were standardized to the maximum value, so that the figures are between 0 (the theoretical minimum value) and 100 (see [Map 1](#)). This standardization is necessary to produce the synthetic index presented later.

First, each map reveals the strong heterogeneity of the border contexts, which is expressed by the variations of intensity of the phenomena and also by the convergence (or divergence) that exists on both sides of the borders.

With regard to the functional dimension, the estimates of the number of cross-border activities carried out per year and per person vary between a maximum value of 18.25 activities for the territories of Midden-Limburg and Zuid-Limburg in the Netherlands, and a minimum value of 0.15 for the Taranto region in southern Italy. The average number of cross-border activities recorded for the whole EU per person per annum is close to 6: one every two months. According to the respondents, the territories of residence of people who engage in more than 10 cross-border activities per year are mainly the Netherlands, Belgium, Luxembourg, Germany (Bavaria and the Rhine area), Switzerland, Austria, France (the border of the Grand-Est and Haut de France regions), Northern Ireland, the Republic of Ireland, and Scotland. Socio-spatial practices are therefore mainly concentrated in the historic heart of the EU. On the other hand, the border territories where the number of cross-border activities is lower than three per year and per person are in the Baltic countries, a large part of the Nordic countries, certain regions of Eastern Europe (Romania, Bulgaria, and Greece) and England. Several factors can be evoked for these strong heterogeneities in cross-border socio-spatial practices. In the first place, the presence of a sea or the poor accessibility of the neighboring border territory constitutes a material hindrance to the



**Map 1.** Multidimensional mapping of the cross-border integration process.

circulation of populations. In addition, linguistic and cultural differences can also be psychological barriers to border crossings. Cross-border practices seem to be related also to the concrete benefits that exist for people such as price differentials, wage differentials for cross-border workers, tourist attractions, etc. In addition, the duration of being in the EU seems to play a role as well, and this is of course largely explained by the fact that cross-border practices need time to become ingrained in the habits of border populations.

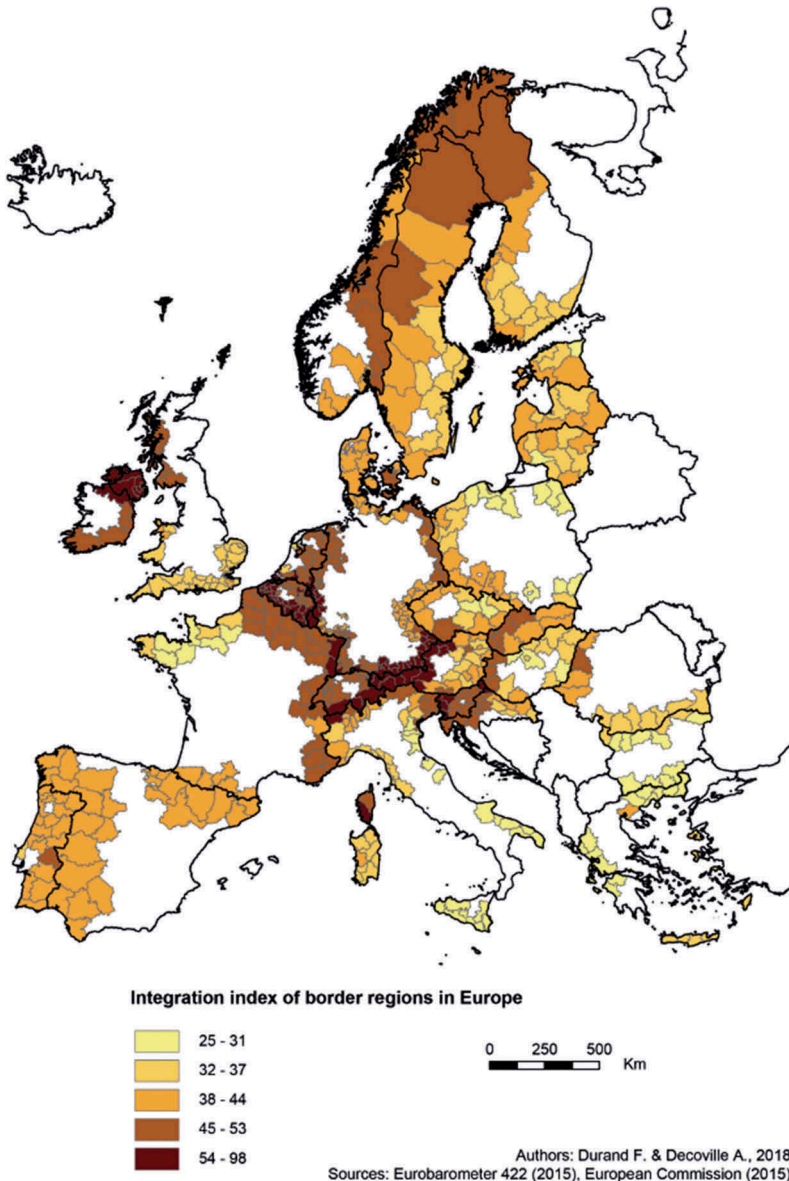
With regard to the institutional dimension, it is interesting to note the significant differences in the density of actors involved in cross-border cooperation projects. In general, there is a correlation between the number of actors involved in projects and the total population of a NUTS 3 border region ( $r^2 = 0.42$ ), but a closer attention shows that large variations might occur. For example, the Goriška region of Slovenia, which has a population of only 120,000 inhabitants counts no less than 186 actors involved in cross-border projects, while, on the other hand, 110 NUTS 3 border territories eligible for Interreg A funds have less than 5. This indicator tends to show that there are more actors involved in cross-border projects in Central Europe, Baltic countries and northern Scandinavia than in the average of the EU border NUTS 3 regions. Clearly, the Interreg cooperation tools are used in very different ways throughout Europe. It is also important to mention that the number of actors involved should be differentiated from the budgetary envelopes that are allocated to the different Interreg areas, which is defined using the eligible population as the criterion for calculating the indicative breakdowns by member state. Generally speaking, it is difficult to observe clear territorial trends, but in any case the densities of actors involved in cross-border cooperation projects appear to be high in the regions that have recently joined the EU, showing an important use of the tools available.

With regard to the ideational dimension, the mutual social trust indicator reflects the perceptions that people in one border region have about their foreign neighbors. On average at the EU scale, 85% of the people that were interviewed answered that they would be 'comfortable' with the possibility of having someone from the neighboring region as a manager, a work colleague, a neighbor, or a family member. However, beyond this first observation which can appear quite favorable to the European ideal, strong differences exist between the European border areas. The populations of northern Europe, eastern France, and the Germanic world show scores that are above 90. On the other hand, the values are much lower in eastern and southern Europe. It is fairly obvious that cultural and linguistic proximities, such as the history of cross-border relations, play key roles. The 'pacified' borders of Scandinavia, for example, show a high level of trust between populations, whereas mistrust is more prevalent in regions that have been torn apart by conflicts during the 20th century.

### ***Cross-border integration index of European border regions***

In order to take into account the multidimensionality of cross-border integration and measure the overall level of this process, a synthetic index was produced, based on the aggregation of three above-mentioned indicators. For this purpose, each of the three initial indicators was previously standardized to the maximum value of 100 in order to prevent an indicator with a large range of answers (for instance the one about cross-border activities) from dominating another one with a smaller range, such as the one concerning social mutual trust.

The map that is obtained shows a wide variety in the degree of cross-border integration of European border regions. The most long-standing part of the EU is the area that seems to be the most integrated (Benelux, North and East of France, Germany), together with Northern Ireland and Scotland, followed by Scandinavia (see [Map 2](#)). On the other hand, the regions that belong to an Interreg A program but are separated from their neighboring regions by seas present (logically) lower scores, since physical distance has a strong constraint on the flows of individuals as well as on the establishment of mutual social trust and cooperation. This is particularly the case for the Adriatic coast in southern Italy, the Channel between France and England, the Greek coast, Sicily,



**Map 2.** Integration index of border regions in Europe.

and Sardinia. Eastern Europe, as a whole, also presents weak values, to which the next section pays closer attention.

### **Toward the definition of different models of cross-border integration in Europe**

The previous map showing the synthetic score of cross-border integration is in itself unsatisfactory to describe and compare the diversity and complexity of the process of cross-border integration along the EU's internal borders. The purpose of this section is to go further and to see whether similarities regarding the different indicators can be identified at the scale of large European Regions that share or have shared common histories or geographical settings. The aim is to highlight, at the level of these large European regions, the dominant dimension(s) of the cross-border integration process or, by contrast, the weakest one(s).

The **Eastern European model** of cross-border integration is mainly characterized by an indicator of mutual social trust between populations living on either side of the border that is much lower than the European average. This model is also defined by a low interpenetration of neighboring border territories by the populations (few cross-border activities are observed) and by the implication of numerous actors in the Interreg A program quite recently (in 2004 or 2007). The geographical areas covered by this model are the borders of the Baltic countries, Romania, the northern and southern borders of Poland, the eastern borders of Hungary and Slovakia, and the Greek borders.

The **Northern European model** of cross-border integration differs from the other models by a strong mutual social trust between the populations living on either side of the border. There is a fairly strong cross-border cooperation dynamic, with emblematic cases such as Copenhagen-Malmö or Haparanda-Tornio, on the northern shore of the Gulf of Bothnia. In addition, cross-border activities appear to be relatively weak. This is partly due to the problems of delimitation of the survey areas, since large territories were investigated and therefore the border is physically far removed from many respondents. The low density of the regions constitutes another limitation to the development of cross-border activities, since the incentives to cross the border are reduced accordingly. The case of the border territories of Norway is slightly different, with numerous cross-border flows. Some 78% of the Norwegians that were interviewed answered that they cross the Swedish border at least yearly to make purchases, since the prices of goods are lower.

Border territories belonging to the **Maritime model of cross-border integration** constitute a special category distinguished by low levels – on both sides of the border – of cross-border activities, of trust toward foreign neighbors, and involvement in cross-border cooperation projects. The presence of the sea is obviously a physical barrier that limits cross-border interactions. Border territories belonging to this category are the Interreg A program areas located on the North Sea, the Baltic Sea, and the Adriatic Sea coasts.

The **Western Continental model** is defined by very strong functional integration: cross-border flows are numerous and frequent. A certain degree of symmetry of these flows is also observed. The level of confidence is relatively high on both sides of the borders, but the number of actors involved in cross-border cooperation appears relatively low in numerous territories given the high population density in this part of

Europe. This model concerns mainly the Rhineland countries but also the Belgian, Luxembourg, and French border territories (north and east) as well as the German-Austrian borders. In these regions, where cross-border cooperation has existed for a long time, it is interesting to note that the interactions are proportionally very high, even though the perceptions that individuals have about their foreign neighbors are not always excellent. Indeed, in the Swiss and Dutch border territories, and according to the Eurobarometer survey, there seems to be a weaker mutual social trust toward the foreign neighbors than that observed on the opposite side of the borders.

The **Central European model** of cross-border integration corresponds to the contact zone between the former Soviet bloc countries and the eastern regions of the German-speaking world. It is characterized both by a relatively low mutual propensity of people to have social mutual trust in their neighbors and by a relatively strong mobilization of European cooperation tools, since the density of actors involved in cross-border cooperation projects appears to be high. The deficit of trust is greater for residents of the eastern border sides than for Germans and Austrians, according to the results of the Eurobarometer survey. Concerning the functional integration, the number of cross-border activities is quite important.

The **Southwestern European model** of cross-border integration is characterized first of all by weak cross-border activities, but also – as in the Central European model – by significant divergences on both sides of the borders with regards to the indicator of mutual social trust. The geographical areas covered by this integration model are the border territories of Southwestern Europe (Portugal, Spain, south of France, western Italy, and Croatia).

In view of the results of this analysis, the area of integration between the Republic of Ireland, Northern Ireland, and Scotland appears as a special case. Indeed, from a statistical point of view, cross-border integration appears to be complete: cross-border flows are numerous, cross-border mutual social trust is very high and reciprocal, and European cooperation tools are strongly mobilized. However, the geopolitical context should not be idealized. Civil war has left its mark and perceptions vary greatly between individuals even if it is not underlined by the indicator. In addition, Brexit will challenge and probably jeopardize the funding of many cooperative projects between the UK and the Republic of Ireland.

## Conclusion

This paper offers a systematic and multidimensional analysis of the cross-border integration process in all the border regions in Europe. For this, it relies on three indicators which allow us to draw new conclusions for the current debate on cross-border integration,, even if the Eurobarometer survey present methodological limitations that hamper the robustness of the results.

The first is that the process of cross-border integration varies along the internal EU borders regarding the intensity of cross-border practices, the level of mutual social trust between border populations, and the involvement of actors in cross-border cooperation projects. Six geographical groups of border regions with different features of cross-border integration can be highlighted within the European space.

The second result provided by the comparative and systematic approach is that there is no obvious relationship between the importance of cross-border flows and the level of



mutual social trust between border populations; or between the intensity of cooperation between institutional and economic actors. The different dimensions of the cross-border integration process can reach very different levels of intensity, thus creating a variety of challenges that require an adaptability of policies to address them and to improve the overall quality of cross-border integration.

Another finding is that the terms 'border regions' and 'cross-border' or 'trans-border regions' should be more carefully distinguished in relevant analyses, since important differences may exist on each side of borders. As a result, the challenges are not necessarily the same for all the territories, thus implying the necessity to take into account existing divergences and asymmetries.

The macro-regional typology proposed here, based on a conceptual framework that defines three dimensions of the cross-border integration process, aims at better grasping the concept of integration, which remains fuzzy, protean, and often heavily charged with political substance and meanings. However, this typology shows that although the situations and challenges are very different throughout Europe, there also seem to be common profiles between border regions at a supra-national scale, probably with common challenges as well. In a current context marked by the rise of nationalism and Euroscepticism, it seems crucial to adapt policies and strategies to compensate for the failures of integration, to take into consideration the distress of populations facing the negative externalities of globalization (from the fear of others to the loss of job or power purchase), and lastly to promote the benefits and advantages of openness and integration (through solidarity and complementarity). By comparing the levels of cross-border integration with three indicators illustrating different aspects of the process for all the border spaces, this typology can help to better understand the specificities of the different border areas in relation to the wider context of the EU, and can also be used in the definition of future objectives and tailored strategies for border regions.

## Notes

1. Other values were also tested to approximate the average number of activities carried out on the other side of the border, in order to compare the mapping outputs and to see how influential these methodological choices can be (value of 12 for "once a month or more often" and value of 4 for "several times a year"). The comparison of the results obtained shows a robustness with regard to the mapping output at base 100 = max value (See Map 1).
2. The data are available at [http://ec.europa.eu/regional\\_policy/en/information/publications/evaluations/2015/geography-of-expenditure-final-report-work-package-13-ex-post-evaluation-of-cohesion-policy-programmes-2007-2013-focusing-on-the-european-regional-development-fund-erdf-and-the-cohesion-fund-cf](http://ec.europa.eu/regional_policy/en/information/publications/evaluations/2015/geography-of-expenditure-final-report-work-package-13-ex-post-evaluation-of-cohesion-policy-programmes-2007-2013-focusing-on-the-european-regional-development-fund-erdf-and-the-cohesion-fund-cf)

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