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HIGHER EDUCATION COOPERATION AND NETWORKS IN THE BALTIC SEA REGION: A BASIS FOR REGIONALIZATION AND REGION BUILDING?

Stefan Ewert

This article examines academic cooperation in the Baltic Sea Region. Academic networks are being discussed as indicators of regionalization, but research on the empirical basis is scarce. In the article, the regional networks of 70 higher education institutions in the Baltic States and the German federal state Mecklenburg–Western Pomerania are analyzed. The analysis shows a heterogeneous pattern for the regional higher education area. Regional embedding depends on the focus of an academy and its participation in regional networks. The article concludes with a discussion of options to be considered by regional organizations in order to strengthen regional academic cooperation.

Keywords: Baltic Sea Region; region building; regionalism; higher education cooperation; networks

1. Introduction

Intensive regional cooperation of non-political institutions and strong networks of the civil society are often emphasized as features of the Baltic Sea Region (cf. Dellenbrant 1999; Engelen 2004; Joas *et al.* 2008; Karlsson 2004; Wæver 1997). This applies for constructivist as well as rationalist social science research. While the constructivist approach on Baltic Sea region building emphasizes the regional identity arising from these networks, rationalist analyses examine the networks' influence on regional governments (cf. Karlsson 2004) and on regional security (Carrafiello & Vertongen 1997; Hubel & Gänzle 2001; cf. Knudsen & Jones 2007, pp. 42–4). Regional cooperation in education, especially higher education, plays a key role in both

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approaches: the existing networks of universities and other higher education institutions are considered an indicator of the intensity of regional relations and regionalization (cf. Dellenbrant 1999, p. 91; Engelen 2004, p. 18; Christiansen 1997, p. 264). Beyond this descriptive argument, constructivists view academic cooperation as an appropriate way of deepening regionalization, since universities are actors of region building (Musiał 2002, p. 42).

Regional political organizations like the Council of the Baltic Sea States (CBSS), the Baltic Sea Parliamentary Conference (BSPC), as well as the Nordic Council of Ministers (NCM) followed this argument and put the promotion of higher education cooperation on their regional political agenda in order to strengthen the Baltic Sea Region. Especially within the CBSS, education has often been a priority of CBSS presidencies. Moreover, the Baltic Sea Region Strategy, adopted by the European Union in 2009, stresses the importance of educational networks and declares several academic initiatives as flagship projects.

In sum, higher education cooperation is considered a main constituent of regionalization in academic discourse and in the policies of regional political organizations. On both theoretical and practical levels, regional higher education networks are used as descriptive and normative arguments: existing networks are indicators of regional awareness and regionalization, and they ought to strengthen the Baltic Sea Region. Hitherto, a systematic review of the empirical basis has been missing.

The role of networks in multilevel governance in the Baltic Sea Region has been the subject of several studies in a number of policy fields. This is true for the areas of environmental protection and sustainability (e.g. Joas 2008; Kern & Löffelsend 2008), economic cooperation (Jansson & Boye 2007; Lemmetyinen 2010), and integration into regional IGO networks (Adams 2011). In addition, various general network analyses of the Baltic Sea Region were carried out (Schymik 2003; Suominen *et al.* 2001). Yet, regarding the cooperation and networking in the sector of tertiary education, only a few descriptions of 'lighthouse projects' exist (Kristensen 2010; Musiał 2002). My article contributes to knowledge about regionalization in the Baltic Sea Region and about the role of higher education in two ways. Part 2 summarizes and structures arguments in favor of strong regional higher education cooperation in the Baltic Sea area in order to answer the question of the academic networks' purpose and their social role in the region. This section is based on social sciences literature about Baltic Sea regionalization and the activities of regional political organizations. I argue that the dual motives for a strong cooperation – as stated in scholarly discourse and in the agendas of regional political organizations – need to be distinguished: an internal, academic benefit for the higher education institution on the one hand; an external benefit to the region and its societies on the other hand. I hypothesize that the internal benefit of regional networking depends on the type of cooperation undertaken as well as on the academic field in question. Hence, different higher education institutions have different incentives for a regional focus in their processes of internationalization.

Parts 3 and 4 test my hypothesis empirically. I propose how to measure regional higher education cooperation systematically. My index ascertains the role of regions in the process of internationalization on the level of the higher education institution.¹ The index represents the international contacts of a higher education institution in the

region in ratio to its overall international contacts.² Thereby, we can evaluate not only the assumptions made in the theoretical considerations, but also the policies on higher education as pursued by the regional political organizations. Do we really have a strong network of higher education institutions in the Baltic Sea Region? And which factors influence the regional embedding of an academy?

In part 2, I outline the arguments for strong higher education cooperation in the Baltic Sea Region as presented in the region building approach and the political discourse on regionalization. Part 3 develops the index of regional embedding of higher education institutions, taking into account different dimensions of academic internationalization. While part 4 features a description of the empirical results of the higher education institutions in the Baltic States and in Mecklenburg–Western Pomerania, part 5 interprets the results in light of the region building approach and the educational policy of the regional political organizations.

2. Theory and Practice – Cooperation of Universities and Higher Education Institutions in the Region Building Approach and the Regional Political Projects

In social science research on the Baltic Sea Region, the constructivist region building approach is one of the main theoretical instruments to describe the developments in the Baltic Sea Region and the processes of regionalization (Williams 2001, p. 8; cf.: Joenniemi 1997; Lehti 2003; Neumann 1992; Wæver 1997). Regions are – in accordance with Benedict Anderson's nation building theory – considered 'imagined communities' (cf. Anderson 1991). First of all, regions come into being through regional discourse. Iver B. Neumann points out this central idea of the approach: 'Regions are defined in terms of speech acts; they are talked and written into existence' (Neumann 1992, p. 15). Following the region building approach, the second main constituent of regionalization in the Baltic Sea Region is the strength of civil bottom-up-initiatives in regional cooperation. These initiatives form the basis of region building whereas political top-down projects like the founding of the CBSS represent the political answer to these developments (Jakobsen 2005; Williams 2010).

Higher education cooperation plays a key role in regionalization. First of all, universities are described as places of regional discourse, creating and disseminating regional symbols (Musiał 2002, p. 42). Second, the existing academic cooperation is a kind of 'engine' of regionalization; regional networking initiatives reflect the recognition of the region on the academic level (cf. Christiansen 1997, p. 264; Dellenbrant 1999, p. 91; Engelen 2004, p. 18). A Baltic Sea Region identity arises not only within the higher education sector, but in the whole society.³ Hence, regional academic cooperation should be promoted as an instrument of region building as it helps to achieve the aims of regionalization in general.

This region building argument in favor of a Baltic Sea Region identity and the assumption that higher education cooperation should support the formation of such an identity have a strong normative dimension. Yet, in the regional discourse both academically as well as in practice, several others, more functional arguments for

TABLE 1 Benefits of strong higher education networking in the Baltic Sea Region

Effects	Benefit	
	For higher education institutions (internal benefit)	External benefit
Concrete policy	Internationalization Transformation of higher education institutions in the south-eastern Baltic Sea Region Positioning of higher education institutions in the global competition	Security and stability in the region Environmental protection/protection of the Baltic Sea Economic synergistic effects
Subjective level	Creation of a common identity/ 'branding'	Creation of a 'Baltic Sea identity'

strong regional higher education networking can be distinguished. A matrix differentiating the benefit assumed (for the higher education institution vs. externality) and the dimension of the effects (concrete policy field vs. subjective level) structures the arguments for regional academic networking as outlined in Table 1.

There are a number of reasons given in the regional discourse why strong regional academic networking helps higher education institutions in academic life (top left field of Table 1). From a rationalist point of view, these arguments pave the way for regionalization even in the absence of external incentives for the higher education institutions to cooperate on a regional level. A first argument is based on an assumption that the Baltic Sea Region offers a consistent framework for internationalization of higher education institutions. There is some evidence that cultural and spatial proximity of cooperating universities have a positive impact on the success of international collaboration (Brandenburg *et al.* 2008, pp. 19–20). Transferred to the Baltic Sea Region, networking on a regional level could therefore help enhance internationalization and to implement the Bologna process’s aims of convergence and harmonization in European higher education (cf. HØGUT 1999, p. 10; Neave 2003 on the Bologna process).

With reference to the situation of the higher education systems in transition states and especially in the newly independent Baltic States of the early 1990s, a second argument was introduced. To reform and modernize the higher education sector in the transition countries, the region proved to be a suitable frame for a knowledge transfer from (north-)west to (south-)east (Rostoks 2002; cf. Kristapsons *et al.* 2003, pp. 62–3). To prepare higher education institutions for the new demands and to avoid a brain drain in the tertiary education sector, academic cooperation helped by modernizing curricula, teaching methods, and materials in the new democracies.

The former rector of Tartu University and Minister of Education in Estonia, Jaak Aaviksoo, particularly stresses a third argument: he proposes the establishment of a global brand name for the Baltic Sea universities in order to strengthen their position

in the global educational competition (Aaviksoo 2002). The universities in the region are, like its higher education systems in general, comparatively small. In order to be recognized in the global competition for staff and students, they should unite under a single corporate regional name. Yet, in order to make such regional networks work, a coordinated higher education policy in the Baltic Sea Region must be implemented.

The idea to support the transition process in the newly independent states through academic cooperation is not only restricted to the higher education sector. The first argument related to an external, non-academic benefit of regional networking (see the upper right box in Table 1) considers higher education cooperation as an appropriate way to enhance security and stability in the region. The aim of cooperation was to improve the education of new elites in economics, politics and law (Musiał 2002, pp. 55–6). The transfer of curricula, methods, and materials not only helps to modernize universities, but also acts as a multiplier effect to develop the civil society. Being part of the development and maintenance of regional security, this soft security strategy was particularly important during the 1990s (cf. Hubel & Gänzle 2001, pp. 8–14).⁴

Another soft security risk in the region is the endangered ecosystem of the Baltic Sea, which led to the adoption of the first region-wide convention during the Cold War (Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974) and the implementation of the Helsinki Commission (HELCOM) as an institutional frame (Räsänen & Laakonen 2008). Here, higher education networking is being discussed as a way to improve the Baltic ecological situation: joint research projects are expected to extend the knowledge on the ecological situation and teaching collaborations are intended to broadcast the knowledge region-wide.

Finally, a third functional argument of a positive external effect can be seen: a regional transfer of knowledge to strengthen the economic power in the transition states. Higher education cooperation should lead to a bundling of resources and bring about synergistic effects (Heimsoeth 2002). The joint label of the regional higher education space could help to expose and present the economy of the region within the global competition.

Region builders emphasize the external outcome of a regional identity that results from higher education cooperation. Along with the direct, functional effects, university networking helps to establish a sense of 'We', and thus influences the manner regional problems are dealt with positively. While this argument could, in principle, also be applied as an internal, academic benefit, it is nevertheless mainly given as an externality of regional higher education cooperation with an impact on the whole region (cf. Musiał 2002).

In the agenda of regional organizations and projects, a theoretical argumentation for strong regional networking of universities and higher education institutions is reflected. An example of the political discussions of academic benefits attained by regional higher education cooperation is the committed work of the Nordic Advisory Committee on Higher Education (HØGUT), established by the NCM in the end of the 1990s to develop ideas for a Nordic-Baltic higher education space (HØGUT 1999).

Yet, the regional political organizations primarily emphasize the positive external effects of regional higher education networking. Even within the framework of the

founding declaration of the CBSS from 1992, education has been stressed as one main field of cooperation for the 'construction of democratic societies' (CBSS 1992). The EuroFaculty project in the Baltic States was one of the key projects of the CBSS in the 1990s. It helped to (re-)establish and transform study courses in political sciences, economics and law at the University of Latvia (in Riga), University of Tartu and Vilnius University. The aim was to 'play a key role in the continued strengthening of the institutional and administrative capacity' in the Baltic States (CBSS 1998; cf. EuroFaculty 2005, p. 7). Furthermore, the core policy of the NCM in the 1990s to enhance stability and security in the Baltic Sea Region also included the support of the education of the new elites in the transition states of the region (Musiał 2002, pp. 55–6).

After the turn of the millennium the focus of regional political organizations shifted towards the promotion of the Baltic Sea Region in the global competition. Once more cooperation in the higher education sector plays a key role in this policy. Especially, the development and discussions on the concept of a 'Knowledge-based Baltic Sea Region' led by the CBSS and the Baltic Sea Parliamentary Conference (BSPC) with the universities as main forums underline the idea of an external benefit of regional higher education cooperation (BSPC 2003; CBSS 2001). At this point, the connection between the academic region building discourse and the agenda of the regional political organizations is most prominent (cf. the different articles in Henningsen 2002). A third point for regional academic cooperation, which resembles an external benefit, is the support of ecological projects by regional political organizations. The expansion and distribution of academic knowledge of ecological topics and particularly the Baltic Sea ecosystem through university networks are expected to help reduce environmental problems in the region.

The Strategy for the Baltic Sea Region, adopted by the European Union in October 2009, gives priority to specific regional challenges like water protection and maritime safety (EU Commission 2009). Again, this obvious functional approach has evolved from the basic idea to support regional development through educational and especially higher educational cooperation. First of all, direct reference to this idea is made by integrating two university cooperation projects into priority area 12 of the strategy ('To maintain and reinforce attractiveness of the Baltic Sea Region'; EU Commission 2009, pp. 53–6).

Second, in their analysis of the consultation process Schymik and Krumrey (2009) emphasize the external benefit argument as stated by the stakeholders in the strategy creation process. They conclude that ideas of education and research networking 'touch upon all priority areas, be it educational programs to foster environmental awareness, research in maritime safety and security, or measures designed to promote region branding' (p. 15). Again, regional cooperation among higher education institutions is described as an appropriate way to respond to regional challenges beyond the academic institution itself.

Against this background, the systematic analysis of regional networking among universities and higher education institutions is a matter of interest not only for higher education research, but also for political science. Is the current regional cooperation among higher education institutions strong enough to create academic and external benefits as described in region building theory, and as adopted by the regional political

institutions? If the Baltic Sea Region's higher education network, which serves as the empirical basis of political projects, is not as strong as believed, the positive externalities will take no effect. To test this empirical background the first step of my analysis is to evaluate the network by testing hypothesis 1:

H1: The assumptions of the region building approach, as well as those of the regional political organizations' agenda concerning academic networking, are supported if a majority of higher education institutions display a regional focus of their international contacts.

The practical implementation of theoretical approaches has been described in a few case studies (cf. Kristensen 2010; Musiał 2002), but systematic surveys are rare. In the end of the 1990s, Alvheim and Groth (2000) sent questionnaires to 130 universities in the Baltic Sea Region in order to analyze their regional networks. Nevertheless, a record of regional cooperation in academic teaching and research in ratio to the overall international academic cooperation is still not provided. Hence, part 3 makes a methodological proposal of how to measure regional priorities in the process of internalization on an institutional level.

With this index, another feature of the Baltic Sea Region described in the theory of region building can be revised: the approach emphasizes the importance of bottom-up initiatives and networks for regionalization (Williams 2010; cf. Hettne 2003). Even apart from this approach, authors highlight the strength of networks as a characteristic of the region (e.g. Joas *et al.* 2008; Karlsson 2004; Schymik 2003). Hypothesis 2 will test this assumption for the field of higher education cooperation:

H2: If higher education institutions are involved in organized higher education networks, they will be more regionally embedded than institutions that are not members in such networks.

In their network study, Suominen *et al.* (2001) identify two large higher education networks that cover the whole Baltic Sea Region. A bivariate correlation analysis might demonstrate the significant connection between the membership in one of these networks and strong regional cooperation.

Internal academic benefits are a crucial factor to achieving positive externalities. The more valuable the internal benefits, the more interest higher education institutions will have in regional cooperation. However, if internal benefits are limited, external incentives for regional networking will be necessary. Even if the exact value of internal benefits cannot be quantified, the necessity for external incentives can nonetheless be estimated through a comparison of higher education institutions. My argument is that certain institutions have stronger internal incentives to cooperate on a regional level than others. If this is true, political support will be required in order to generate a positive externality by regional networking of the whole higher education sector. Hypothesis H3 tests this pre-condition of generating external benefits.

H3: The strength of regional cooperation depends on the academic focus of a higher education institution.

The assumption behind H3 is that institutions with, for example, an agricultural focus are – due to similar landscapes – more interested in regional cooperation

than others. Their internal benefits of regional cooperation are larger than for the average university. Based on historical developments (e.g. the different articles in Alvermann *et al.* 2007), universities with longer histories may also partake more strongly in regional cooperation. In this case, the internal incentives to cooperate regionally are stronger due to long lasting, established regional networks.⁵ By contrast, economic academies in the Baltic States may seek contacts outside the region in order to meet the strong market orientation of their economic and social policy (cf. Stuchlík 2008, pp. 219–21; Hübner 2011). Validating H 3 implies that not all institutions have the same internal incentives for regional cooperation and that political support is needed to profit from higher education collaborations in terms of regionalization.

To test the hypotheses, part 3 develops an index to measure regional embedding of higher education institutions. Part 4 then illustrates the empirical results for the Baltic States and Mecklenburg–Western Pomerania. Finally, part 5 discusses the political implications.

3. Methodology: Operationalization and Measurement

The IRN index of Baltic Sea regional networking consists of different dimensions of the internationalization of universities and higher education institutions and measures the strength of regional cooperation on the institutional level.⁶ Summarizing the research on higher education internationalization, four main processes or dimensions can be distinguished (Hahn 2004; cf. Ewert forthcoming): The main dimensions of internationalization in the field of teaching are academic mobility and the internationalization of curricula. Internationalization by means of academic research is mainly conducted via cross-border research projects and joint publications of the research results.

To operationalize these four dimensions, quantifiable indicators were established. In order to measure academic mobility, the exchange statistics of ERASMUS as the dominant exchange program in Europe served as the database. In contrast to free mover mobility, bi- or multilateral contracts between higher education institutions are pre-conditions of an exchange. Hence, ERASMUS statistics show institutional cooperation more precisely than figures of mobility in general. The indicator for the mobility of students (*MS*) and for the mobility of teachers (*MT*) denote the relation between outgoing students and teachers who stay within the region (S_{BSR} , T_{BSR}) and the total number of outgoings from this higher education institution (S_{all} , T_{all}).⁷

$$MS = \frac{S_{BSR}}{S_{all}}$$

$$MT = \frac{T_{BSR}}{T_{all}}$$

The spatial concentration in the Baltic Sea Region within the context of the internationalization of curricula is analyzed with regard to joint degree/double degree study programs as well as for the foreign language courses at the higher education institutions. Contrary to other forms of the OECD typology of internationalized

curricula (e.g. curricula which prepare graduates for defined international professions; cf. van der Wende 1996), the two examined forms show the regional connections between institutions. Double degree and joint degree agreements are increasingly the basis for an internationalization of study programs (Échevin & Ray 2002, p. 104). The location of project partners denotes the regional program networking P as being the arithmetic mean of the ratio of program partners from the Baltic Sea Region P_{Reg} to the total number of project partners P_{all} for all joint/double degree programs n .

$$P = \frac{\sum_{i=1}^n \frac{P_{Reg\ i}}{P_{all\ i}}}{n}$$

Apart from cooperation in double and joint study programs, foreign language courses offered at higher education institutions indicate regional integration. Even if English is the lingua franca in academic cooperation in general, and in the Baltic Sea Region in particular, teaching regional languages is considered as one of the key elements for gaining regional knowledge and awareness. The more often regional languages are taught at universities, the better one of the precondition factors for regionalization is realized. In the Baltic Sea Region, as defined above, eleven national languages exist. Consequently, every higher education institution in the region can offer ten regional foreign languages at most.⁸ The indicator L shows the ratio between the de facto numbers of offered regional language courses/studies (L_{off}) and this maximum.

$$L = \frac{L_{off}}{10}$$

The data for regional cooperation in both the double/joint degree programs and the languages offered at the 70 higher education institutions are collected individually at the institutional level via analysis of websites, e-mail inquiries, and personal interviews during 2007 and 2009 (cf. Ewert forthcoming).

To analyze regional networking in research cooperation, the location of partners in EU funded international research projects is taken into account, followed by the number of publications of research results in international co-authorship.

For European universities, the different research programs established and financed by the EU are one main source for international research projects (Ebersberger & Elder 2007). In order to research the regional networks in these projects, I have analyzed the locations of project partners and developed an indicator R .

R consists of the number of those projects conducted with partners from Baltic Sea Region only (RP_{BSR}), those with partners from inside as well as outside the region, yet with the coordinator coming from the region (RP_{CBSR}) and the number of those projects with partners from inside and outside the region and the coordinator being from outside the Baltic Sea States (RP_{ABSR}). The sum of these sub-indicators is divided by the total number of projects of the university that are being financed by the EU (RP_{all}). The different types of regional bound projects are of different weight so that R is generated as:

$$R = \frac{RP_{BSR} + 0.75 * RP_{CBSR} + 0.5 * RP_{ABSR}}{RP_{all}}$$

Similarly, the regional cooperation in joint publications C is measured and related to the publications in international co-authorship in general. CO_{BSR} is the number of publications where all authors originate only from universities in the Baltic Sea Region, and CO_{ABSR} is the number of articles written in collaboration with scholars from both inside and outside the region.

$$C = \frac{CO_{BSR} + 0.5 * CO_{ABSR}}{CO_{all}}$$

Information on research projects financed by the EU are published on the portal CORDIS (Community Research and Development Information Service; <http://cordis.europa.eu>). This database provides information on the location of all project partners. For the research of international co-authorship, Thomson Scientific's *Science Citation Index* and *Social Science Citation Index* served as the database (<http://isiknowledge.com/wos>). Articles from some 8,500 scientific journals are listed, inter alia, according to the author's home university. For this investigation of regional research networking through analysis of research partners' home universities, both websites have proven to be reliable databases.

The values of the indicators for the different dimensions of internationalization range from 0 (minimum) to 1 (maximum). They are summarized in the *Index of Regional Networking (IRN)*:

$$IRN = \frac{MS + \frac{P+I}{2} + MT + R + C}{5}$$

MS stands for the student mobility and $\frac{P+I}{2}$ for regional curricula indicating regional embedding in academic teaching. R and C indicate a focus on the region in research and regional co-authorships respectively, and they denote the regional research networking. With MT (regional lecturer exchange indicator) representing the teaching and research cooperation, the two main activities of academies are weighed equally in the index IRN . Adding the five dimensions allows for regional networking to maintain observable even if a higher education institution has regional contacts in one dimension of internationalization only.

The index displays the relevance of the Baltic Sea Region in the process of internationalization for the particular higher education institution. The maximum value 1 indicates an exclusive concentration on the region in the dimensions observed, while the minimum value 0 indicates no regional cooperation.⁹ This enables not only a systematic comparison of the regional embedding of academies in the Baltic Sea Region, but also an evaluation of the role of higher education cooperation in the process of regionalization.

4. Empirical Results

To test my hypotheses presented in part 2, I analyze the regional cooperation of all 70 higher education institutions in the three Baltic States and the German federal state of Mecklenburg–Western Pomerania with more than 1000 students enrolled in 2008.¹⁰ The structure of higher education policy in Germany, characterized by an extended

federal autonomy, allows a comparison of the three national states with one German federal state (Ewert 2010a, pp. 59–61). I argue that as a result of the transition process during the 1990s, regional networks should be particularly apparent for the universities of these four countries. Therefore, I focus on the higher education institutions in the region's transition countries of the 1990s, but exclude Poland's and Russia's higher education institutions in the region due to the rather centralized higher education systems in these two countries (Ewert 2010a, p. 60).

All four higher education systems analyzed in this article had to be modernized and re-organized after the breakdown of the Iron Curtain. The Scandinavian countries actively supported the reform process in the Baltic States to enhance security and stability in the region. Understanding the crucial role of the educational sector in the transition process in general, and the need for new elites in the economy and public administration in particular, to support higher education institutions in the development of new curricula and institutional structures was part of their strategy (cf. Musiał 2002, pp. 55–6). Similarly, for Mecklenburg–Western Pomerania and its universities, the Baltic Sea Region supplied a framework for the process of reorganization and reorientation. The countries' perspectives within the region were discussed as a strategy regarding the peripheral location of Mecklenburg–Western Pomerania in Germany. This cross-border cooperation in the Baltic Sea Region was even written down in the new constitution of Mecklenburg–Western Pomerania of 1993. As a result, the incentives for higher education institutions in the three Baltic States and Mecklenburg–Western Pomerania to cooperate with partner institutions from the Baltic Sea Region should have emerged in the transition period of the 1990s.

A first impression of regional embedding arises from the analysis of the individual dimensions of internalization. In 2006/2007, 35.44% of the outgoing ERASMUS exchange students remained in the region. If we consider only those academies with more than 20 outgoings during this period, the agricultural University of Life Sciences in Tartu had the strongest regional networks in the dimension of mobility (62.50% of the outgoing students went to higher education institutions in the Baltic Sea Region), while only 9.68% of the outgoing students from the Estonian Business School in Tallinn stayed in the region. The divergence is even bigger for teacher mobility: While 70.37% of outgoing lecturers from the University of Medicine in Kaunas remained in the region, only 8.00% of the teachers from the Pedagogical University in Vilnius who went abroad with ERASMUS stayed in the Baltic Sea Region.

In 2008 only a few joint or double degree programs were offered in the four higher education systems. Yet, these programs show a remarkable regional embedding, according to the location of their partner institutions. In Estonia, in five out of the ten programs, more than three quarters of all the partners were from the Baltic Sea Region. In Mecklenburg–Western Pomerania more than 75% of the partner institutions in all three programs come from the region. And in Lithuania, four out of eleven projects were conducted with partner institutions mainly from the Baltic Sea states. Only in Latvia did the majority of programs (four out of six) have no cooperation partners in the Baltic Sea area.

The analysis of language courses offered at higher education institutions and the students' demand for such courses showed a different picture. A linguistic definition of the Baltic Sea Higher Education Space is not given. English as *lingua franca* is the

dominant language for cooperation, in the language courses, and in students' demand. The request for courses in German and Russian in the Baltic Universities is steadily decreasing. Other languages of the region are only offered at large universities and, in relation to the number of students mostly in the form of small courses and programs.

European financed research projects show no outstanding regional embedding. Cooperation with colleagues from the region takes place, but cooperation with partners from beyond the region is just as frequent (mean and median of the indicator $R=0.5$). However, the analysis of the *Web of Sciences* for 2008 demonstrates strong regional connections for Estonia and Latvia in terms of the publication of research results: Estonian scholars mostly publish together with authors from Finland, Sweden and Germany, whereas their Latvian counterparts mainly do so with colleagues from Lithuania and Germany. Yet, in Lithuania and especially in Mecklenburg–Western Pomerania, co-authorship with scientists from outside the region is considerably more common.

In sum, the analysis of the different dimensions results in a heterogeneous pattern. While in some dimensions and countries, distinct regional embedding can be discerned, other dimensions of higher education internationalization occur mostly with institutions outside the Baltic Sea Region. To test hypothesis H 1 and to examine the factors influencing the regional networking of the universities, the index of BSR-networking quantifies academic networks on the institutional level. Hypothesis H 1 analyzes the strength of the regional embedding of the higher education institutions.

The arithmetic mean of *IRN* index for the 70 higher education institutions examined is 0.254, the standard deviation is 0.15. On average, the academies in the Baltic States and Mecklenburg–Western Pomerania have more international contacts with institutions from outside the region than with Baltic Sea academies. The lowest values are scored by smaller, usually private, higher education institutions where internationalization is generally less promoted. This is true for e.g. the Mainor Business School in Estonia ($IRN=0.0$), the Latvian International School of Practical Psychology ($IRN=0.02$) and the Technical College in Kaunas, Lithuania ($IRN=0.02$).

But the index also shows a couple of higher education institutions that are strongly embedded in the Baltic Sea Region. The highest value overall is attained by the Estonian University of Life Sciences in Tartu ($IRN=0.60$). In Latvia, the Latvian University of Agriculture (Jelgava) exhibits the strongest regional integration ($IRN=0.54$). In Lithuania, the University of Klaipėda holds this position ($IRN=0.45$), while in Mecklenburg–Western Pomerania, the University of Greifswald has the strongest regional cooperation ($IRN=0.48$). Table 2 shows the three academies with the strongest regional integration of each country.¹¹

In Latvia and Estonia, the agricultural universities have the strongest regional embedding, but in Lithuania and Mecklenburg–Western Pomerania, the two universities located directly on the Baltic Sea show the strongest cooperation with a regional focus.

On average, higher education institutions in Mecklenburg–Western Pomerania focus more on regional cooperation than the academies in the Baltic States. While the mean of regional embedding for the higher schools in the northeast of Germany is

TABLE 2 The strongest regionally embedded higher education institutions in Estonia, Latvia, Lithuania and Mecklenburg-Western Pomerania

Country/higher education institution	IRN
Estonia	
Estonian Univ. of Life Sciences	0.60
Tallinn University	0.58
Tallinn University of Technology	0.48
Latvia	
Latvia University of Agriculture	0.54
Daugavpils University	0.51
Riga <i>Stradins</i> University	0.41
Lithuania	
Klaipėda University	0.45
Vytautas Magnus Univ. Kaunas	0.45
Utena College	0.42
Mecklenburg-Western Pomerania	
Greifswald University	0.48
Univ. of Applied Sciences Wismar	0.47
Univ. of Applied Sciences Neubrandenburg	0.37

IRN = 0.40, the means for the Baltic higher education institutions are between IRN = 0.25 (in Lithuania) and IRN = 0.23 (in Estonia).

Hypothesis H 2 assumes higher education institutions organized in regional networks are systematically more strongly embedded in the region than those not involved in networks. The catalogue of regional networks by Suominen *et al.* (2001) lists two region-wide higher education networks: The Baltic University Programme (cf. BUP 2010), with more than 220 higher education institutions involved, and the Baltic Sea Region Studies Network. The latter was replaced by the *Baltic Sea Region University Network*, founded in 2000 as an umbrella group of regional academic networks (cf. BSRUN 2010).

The importance of the networks was analyzed through bivariate correlation between the membership of an academy in the networks and the IRN scores. Table 3 shows that the membership and the regional embedding in teaching and research correlate highly significantly. Academies taking part in one of the networks have stronger connections in the Baltic Sea Region.

As already shown in Table 2, there is some empirical evidence that some universities are more predisposed to regional embedding than others, due to their academic focuses. In part 2, I argue that this could be interpreted as an indicator for an internal benefit for the higher education institution to focus regionally. There are internal benefits for higher education institutions having strong regional networks, but these benefits depend on the academic fields of the institution. With hypothesis H 3, I systematically test my assumption that the strength of regional embedding depends on the academic core areas of a higher education institution. I correlated the IRN values with dummy variables, mapping the focus of the academy with regard to its content.¹² Table 4 shows the different types of higher education institutions and the correlation with the regional embedding.

TABLE 3 Correlation between participation in regional higher education networks and the regional embedding in teaching and research (*IRN*)

Network	Correlations (Pearsons r) with <i>IRN</i>
<i>Baltic University Programme</i>	0.409**
<i>Baltic Sea Region University Network</i>	0.557**

Source: own calculation (** Significance at 0.01-Level)

Table 4 shows a significant positive correlation of the *IRN* values for agricultural and traditional universities, while the higher education institutions with a focus on economic and social sciences are considerably less regionally embedded. One reason for the high scorings of the traditional universities could be their historical contacts in the Baltic Sea Region. The majority were founded long before 1990, yet they faced a limited radius of cooperation during the Cold War. There is reason to assume that universities in the communist countries of the Baltic Sea Region were able to establish closer contacts with academies in the non-aligned countries in Scandinavia rather than with Western universities. But the extent to which higher education institutions within the region were easier to access and how strongly academic networks continue to be influenced by these traditional connections today must be analyzed further.

The reasons to cooperate regionally are more obvious for the agricultural universities. The Nordic States and Germany were engaged in the schooling of farmers already in the early stages of the transition from communism. By 1989, this

TABLE 4 Groups of higher education institutions (by focus with regard to its content) and their correlations with the regional embedding

Group	Content main focus	Correlation (Pearsons r) with <i>IRN</i>
Technical higher education institutions	Technical and engineering subjects	0.147
Agricultural higher education institutions	Agricultural/veterinary subjects	0.342**
Social and economic sciences higher education institutions	Social and economic sciences subjects	– 0.449**
Medical higher education institutions	Subjects in medicine and health care	– 0.022
Police academies	Subjects in police/security	–0.068
Pedagogical higher education institutions	Pedagogical subjects	–0.115
Art academies	Fine arts subjects	–0.171
Traditional universities	Subjects offered in a minimum of four fields above listed	0.383**

Source: own calculation (** Significance at 0.01-Level)

support had already been taken to an academic level (Karklinsh 1997). The Baltic Sea Region evolved as a region of cooperation in the 1990s (Karklinsh 1997, p. 468). Similar forms of farming, based on comparable features of the landscape, are one reason for academic cooperation of higher education institutions in the field of agriculture.

For higher education institutions focusing on economic and social sciences, regional embedding is below average. One conceivable reason could be the strong market orientation and liberalization of the Baltic States' economic and social policy (cf. Hübner 2011). Academies which focus on training for economists and business people could be forced to implement an internationalization strategy directed beyond the region's boundaries in order to cooperate with partners from liberal market economies rather than Scandinavian welfare states. Causality is possible in both directions: on the one hand, an early orientation of business academies in the Baltic States towards partner institutions in liberal market economies could cause a strong market orientation of the alumni and the economic system. On the other hand, a focused search for cooperation partners of the higher education institutions could be the consequence of the orientation of the economic system and the demand on the job market. Case studies on the internationalization strategy of higher education institutions comprising their academic focus could help to understand these causalities in the future.

5. Summary/Interpretation

The aim of this article was to measure regional higher education cooperation in the Baltic Sea Region. To this end, the internationalization of 70 higher education institutions in Estonia, Latvia, Lithuania and Mecklenburg–Western Pomerania was analyzed. The results help to evaluate the empirical basis of the region building approach as one main approach to explaining regionalization in the Baltic Sea Area. The findings could also be used to evaluate the prospects of political regionalization projects as well as the activities of the CBSS, the BSPC, the NCM and the new Baltic Sea Strategy of the European Union in matters of education policy.

The Index of Regional Networking shows that there are only few universities with a strong regional focus. IRN values greater than 0.5, which indicates that the international relations of a higher education institution are concentrated in the Baltic Sea Region, are rare, and are only attained by two institutions in Estonia and Latvia (cf. Table 2). Many higher education institutions are only poorly regionally embedded. Nevertheless, there are some academies with a strong regional cooperation network. This article argues that these strong links within the region are not a coincidence. Academic incentives for regional cooperation are provided on the following conditions: the internal benefit depends on the academic focus of the higher education institution, and on the type of international cooperation. My empirical data underlines this argument: there is a correlation between the content-related focus and the regional cooperation (confirmation of hypothesis H3). Especially the agricultural universities appear to have significantly stronger networks in the region.

Next to that, the analysis of the different dimensions of internationalization shows that higher education institutions perceive the Baltic Sea Region as a profitable frame of cooperation in some fields of international collaboration more than in others. There is reason to argue that the region is particularly important for international projects with intense needs for cooperation. The development of a joint or double degree program, for instance, needs much stronger cooperation than the implementation of a foreign language program. The differences in regional focusing regarding research can be explained the same way: due to application rules and procedures in European research projects, scholars from different European regions participate regularly. Stronger cooperation is required for the publication of research results and is hence often done by two or more scientists from neighboring countries. The empirical results presented in this article give some evidence for this interpretation.

How do these findings impact the theory of region building? While exponents of the first 'generation' of the region building approach in the Baltic Sea Region like Ole Wæver emphasize the discourse on regional identity and the active role of region builders in the process of regionalization (cf. Wæver 1997), other authors point out the empirical basis, the *raw materials* of region building (Engelen 2004, p. 9). The results of the index show that there is no empirical basis for a Baltic Sea Region higher education space in general. Yet, depending on academic fields and form of cooperation, such a space exists in certain areas.

H1 is partially confirmed. The region building discourse does not take place in a vacuum, at least not with regard to the field of higher education. The results of my research could not explain the development of a regional identity through higher education networking. Yet, my analysis shows a certain empirical fundament for region builders to further research this formation of a regional identity.

Concerning the different political initiatives seeking to strengthen regionalization, the arguments for political support of higher education cooperation in the Baltic Sea Region as discussed in part 2 show that there is an external, non-academic benefit for the societies in the region. Whereas in the 1990s support of the reform process in the transition countries through higher education cooperations was a successful strategy to enhance regional stability and security, today the regional academic networks could help to pave the way for a stronger integration of Russia into the region. The higher education networks' contribution to the improvement of the marine environment in the Baltic Sea is emphasized by stakeholders in the adoption of the EU strategy for the Baltic Sea Region (cf. Schymik & Krumrey 2009, p. 15). Furthermore, the creation of a regional branding and synergistic effects for the economies of the region are such external benefits.

Although these benefits are hardly quantifiable, it nevertheless appears reasonable to political organizations to support regional higher education cooperation. Yet, the confirmation of my hypothesis H 3 indicates that unequal internal benefits for higher education institutions cooperating on a regional level result in differences concerning the regional embedding of the academies. This finding strengthens the rationalist argument of the necessity of political incentives in order to deepen academic cooperation and thus create external regional benefits.

One starting point for such political initiatives is the support of existing bottom-up academic networks. The empirical analysis and test of hypothesis H 2 show that

higher education institutions involved in such networks are significantly stronger embedded in the Baltic Sea Region than institutions which are not members of these networks. Against this background, the support of flagship projects by the EU Strategy for the Baltic Sea Region seems reasonable. Yet, the de facto influence of regional political organizations like the CBSS and BSPC on the regional networking of the academies is rather weak. As I have pointed out in other research (Ewert 2010a, pp. 235–52; Ewert 2010b), interviews with stakeholders of higher education policy in the Baltic States and Mecklenburg–Western Pomerania confirm that political initiatives play a rather minor role concerning a regional focus in the academic process of internalization. To strengthen the influence, two strategies of the regional political organizations appear promising: The first one is a close cooperation with the bottom-up networks.

Second, organizations should focus on their function as regional forums. With regard to the academic autonomy of higher education institutions, academies can only be convinced by arguments: Why should a higher education institution cooperate on regional level? And why should the society and the higher education policy support this regionalization? Part 2 outlined several arguments for internal and external benefits of regional higher education cooperation. A discussion of these arguments organized and promoted by the regional political organizations could enhance their perception in the region and help to increase positive external effects of academic cooperation in the Baltic Sea Region.

In future research, a comparison of regions based on my index is expedient. Thereby, the thesis of the Baltic Sea Region being ‘a pioneer in the introduction of new modes of governance’ (Joas *et al.* 2008, p. 6; cf. Kern & Löffelsend 2008) is to be examined concerning the field of higher education policy and academic cooperation. The intraregional analysis has shown that bottom-up networks have an effect on higher education cooperation in the region. Yet, only an interregional comparison can examine the asserted pioneering role of the Baltic Sea Region.

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Notes

- 1 The article uses the terms ‘higher education institution’ and ‘academy’ synonymously. They include all universities, colleges and other higher education institutions providing higher education on the ISCED-Level 5A. For the UNESCO ISCED-classification, see http://www.unesco.org/education/information/nfsunesco/doc/isced_1997.htm (accessed 18 December 2010).
- 2 I define the Baltic Sea Region as the region consisting of the eleven member states of the CBSS. These states are Russia, Estonia, Latvia, Lithuania, Poland, Germany, Denmark, Norway, Iceland, Sweden and Finland. For Russia, Poland and Germany, only the subnational administrative bodies bordering the Baltic Sea are

considered. For a discussion of this definition of the Baltic Sea Region, cf. Ewert 2010, pp. 4–5.

- 3 Region builders refer to the arguments of social geographer Anssi Paasi, who understands the formation of regional identity mainly via discursive processes and social consciousness (Paasi 1986). University cooperation on a regional level is considered a place of such discursive processes. Even if there are strong national identities and an emerging European identity around the Baltic rim, the region building approach emphasizes the regional identity as a feature of Baltic Sea regionalization (Dellenbrant 1999; Wæver 1997; cf. Laursen 2003, p. 20). My argument is the following: even if it is almost impossible to segregate the effect of regional academic cooperation on the emergence of a regional identity, it is still expedient to analyze the empirical background of this assumption to test the region building approach as one of the most influential social science approaches to explain the Baltic Sea Region.
- 4 For a definition of ‘soft security’ covering all aspects of non-military security problems and an overview of soft security issues in the Baltic Sea Region see Hubel & Gänzle (2001).
- 5 From a rational choice point of view, the universities use the networks established before 1990 due to path dependence, which reduces the transaction costs of internationalization (cf. Pierson 2000).
- 6 For the use of indices in comparative politics and the context of my index in relation to other indices, see Pickel & Pickel (forthcoming).
- 7 Teachers’ mobility concerns the internationalization of teaching and research. Hence, the indicator refers to both dimensions.
- 8 The languages are: Russian, Estonian, Latvian, Lithuanian, Polish, German, Danish, Norwegian, Icelandic, Swedish and Finnish.
- 9 The value 0 may imply that there are no international contacts of the higher school at all. However, it can also mean that there is some international cooperation, but with institutions from outside the Baltic Sea Region only. Regarding the research question, the conclusion is the same: there are no regional academic networks which can generate an internal or external benefit as described in Table 1. Values near 1 may also indicate an exclusive regional network if not all ten regional foreign languages are taught at the higher education institution.
- 10 In 2008, there were 34 higher education institutions in Lithuania, 15 in Latvia, 16 in Estonia and five in Mecklenburg–Western Pomerania with more than 1000 students enrolled. Data for the particular institutions reflect their cooperation in the different dimensions in 2007 (cf. Ewert 2010, p. 76).
- 11 Due to the assumption that English serves as the lingua franca for academic cooperation in the Baltic Sea Region there might be some reason to calculate the index without the indicator for the regional languages taught at the university. The ranking for the strongest regional embedded higher education institutions of such an index remains the same for Estonia and Latvia. The values range from =0.66 for the Estonian University of Life Sciences to = 0.40 for the Riga Stradins University. In Lithuania and Mecklenburg–Western Pomerania, the ranking changes slightly, with the Vytautas Magnus University Kaunas being the strongest regional embedded higher education institution in Lithuania (=0.50) and the University of Applied Sciences Wismar taking that position in Mecklenburg–Western Pomerania (=0.55). Nevertheless, due to the

arguments discussed in Part Three, I use the index for the following correlation analyzes.

- 12 The allocation of higher education institutions to different groups is mainly based on the names of the academies and the study programs offered. Except for the last category ('traditional universities'), institutions were allocated to the group which matched the majority of the programs best.

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