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Inter-university Networks: Rhetorics vs. Reality

Objectives and Activities of Members of the
European Consortium of Innovative Universities



Master's Thesis

Public Administration // Policy and Governance
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Abstract

This qualitative study investigates higher education institutions' engagement in inter-university networks. Inter-university networks are defined as formal, multilateral, multi-purpose and voluntary cooperative arrangements between higher education institutions from multiple countries which are coordinated by an additional administrative layer. This paper seeks to understand to what extent the activities universities perform within inter-university networks actually match their objectives towards these networks. Adopting a multiple-case study design including five European universities of the European Consortium of Innovative Universities (ECIU), the study builds on the resource dependence theory which predicts that higher education institutions use inter-university networks strategically solely for the achievement of their objectives. The goal of the study is to test the resource dependence theory's expectation that higher education institution's objectives towards their inter-university network engagements and the activities which they perform within such networks are aligned with each other. The empirical evidence includes primary data collected mainly through semi-structured interviews.

The thesis begins with setting out the research focus and design, followed by an introduction to the phenomenon of inter-university networks including a description of their characteristics and factors of success and failure. Subsequently, the theoretical framework based on the resource dependence theory is outlined and a theoretical expectation guiding the research is developed. After a brief discussion of the methodological approach of the study and the operationalisation of the variables, the thesis moves on to the data analysis.

The study finds that the case study institutions actually pursue great parts (75%) of their objectives towards the inter-university network. But, at the same time, they also perform many other activities within the ECIU which do not contribute to their objectives. The case study institutions do not strategically arrange all their network activities as purposeful actions targeted solely at the achievement of the objectives they stated to guide their participation in the ECIU. A substantial number of the case study universities' objectives towards the ECIU and their activities within the ECIU were found to be misaligned with each other. Consequently, the resource dependence theory could not be confirmed. The thesis discusses factors which might keep institutions from using their inter-university networks for their objectives. It also argues that performing activities which are not aligned with the institution's objectives can point to an additional value of the network. Finally, the study discusses its limitations and gives recommendations for further research.

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LIST OF ABBREVIATIONS

DCU	Dublin City University
ECIU	European Consortium of Innovative Universities
EU	European Union
EC	European Commission
HE	Higher Education
HEI	Higher Education Institution
LDP	ECIU's Leadership Development Programme
SCTL	ECIU's Steering Committee on Innovation in Teaching and Learning
SC ESRI	ECIU's Steering Committee on Entrepreneurship and Societal Impact of Research
TUHH	Hamburg University of Technology
UAB	Autonomous University of Barcelona
UiS	University of Stavanger
UT	University of Twente

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1. Introduction

1.1. INTER-UNIVERSITY NETWORKS IN A GLOBALISED WORLD

The 21st century reality is shaped by a rapid transnational flow of technology, information, products, finances, people, and ideas. In the context of globalisation, the world economy gets increasingly integrated, information and communication technologies are expanding, socio-cultural arrangements become disconnected from their geographical context, and the world turns into an international knowledge society (Eitzen & Zinn, 2012). To put it in a nutshell, current realities boost the importance of the international context. This inevitable development towards a greater global interconnectedness reshapes all aspects of our society, higher education included (Altbach et al., 2009). As a result, questions of international competitiveness, social relevance of teaching and research and innovative potential move to higher education institutions' center of attention and shift their institutional missions and resource structures towards a more decentralised and market-oriented mode of operation (Maringe & Foskett, 2012; Tadaki & Tremewan, 2013; Rumbley et al., 2012).

In such a context, higher education institutions are increasingly working together across national borders; hence, they adopt a strategy which focuses on their external environment in order to secure their competitiveness and cope with the new risks they face (Kinser & Green, 2009). International inter-university cooperation helps higher education institutions to compete and to meet public demands by improving their service to students, enhancing their research, providing access to funding and expanding their operational capacities (Teichler, 2009). Through international cooperation, higher education institutions undertake new activities or extend their current ones by combining resources (Beerkens, 2004). They implement new policies and programmes, such as exchange programmes or branch campuses overseas. They pursue joint research with international colleagues, undertake political activities and exchange best practices. Although such activities are still largely based on bilateral international partnerships or agreements (Knight, 2007b), the recent past has shown that higher education institutions find it more and more valuable to connect within formal networks of multiple universities (Denman, 2002; Beerkens, 2004; Casingena et al., 2015).

This thesis explores international inter-university networks as a particular form of cooperative arrangements between higher education institutions. Looking at the example of the European Consortium of Innovative Universities (ECIU), this research studies higher education institutions' activities within inter-university networks in relation to their strategic objectives.

1.2. RESEARCH FOCUS AND PROBLEM STATEMENT

Within the recent past, inter-university networks were increasingly adopted as a strategy of higher education institutions to seek academic and economic benefits and increase their competitiveness in an environment shaped by globalisation, internationalisation and marketisation (Brown et al., 2007; Teather, 2004a; Deiacio et al., 2009; Brown et al., 2007; Wächter, 2000; Teather, 2004b). Examples of inter-

university networks include the European University Association (EUA), the League of European Research Universities (LERU) and the Network of Universities from the Capitals of Europe (UNICA). The expected benefits for institutions participating in inter-university networks are often very high. Greater global visibility, access to larger academic environments, higher competitiveness for research funding, and intensified student exchange are only some examples of commonly projected outcomes of inter-university network engagement (Wit, 2004; Knight, 2008). Consequently, the engagement in inter-university networks is often widely announced and praised. Thereby, illustrative key words like *world class*, *profiling*, *leading* and *excellence* are used in abundance. However, it is a moot point whether the strong rhetorics surrounding the engagement in inter-university network actually matches the reality. Along with the proliferation of inter-university networks comes also the realisation that the engagement in inter-university networks implies various challenges. It was observed that inter-university networks frequently remain or become inactive over time (IIE, 2011; Brown et al., 2007) and that they fail to deliver results relative to the objectives (Stockley & Wit, 2011). Thus, a major question which arises is to what extent higher education institutions actually use their inter-university networks and whether the activities performed within the networks (reality) actually match the institutions' objectives (rhetorics). This thesis aims to explore this question based on the example of member institutions of the ECIU. The overall research question is:

To what extent are the objectives which member institutions of the European Consortium of Innovative Universities pursue by engaging in the network and the activities which they perform within the network aligned with each other?

In order to pursue the intended research, it is necessary to first delve into the complexities of inter-university cooperation. Since cooperation in higher education can take a wide variety of forms, it is critical to distinguish inter-university networks from other forms of cooperative arrangements. Therefore, the first sub question of this research is:

1. *How can international inter-university networks be defined?*

The response to the first sub questions is based on literature. The discussion of this major concept sets the stage for the elaboration of the remaining sub questions which are based on empirical research. In order to understand the alignment of the institutional objectives towards inter-university network engagement and the activities performed within such networks, the second and third sub questions read as follows:

2. *What objectives do ECIU member institutions pursue specifically by engaging in the ECIU?*

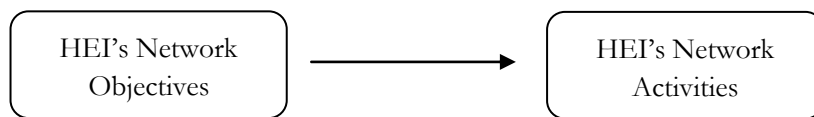
3. *What activities do ECIU member institutions specifically perform within the ECIU?*

Subsequently, the identified objectives and activities can be matched in order to assess their alignment. This will lead to an answer to the overall research question.

1.3. RESEARCH DESIGN

The presented research question and sub-questions reflect the research objective of this study (George & Bennett, 2005). The framework of this study deals with higher education institutions' objectives towards inter-university networks and activities within international inter-university networks. Figure 1 illustrates the relationship between the independent variable (higher education institutions' objectives towards their inter-university network engagement) and the dependent variable (activities which higher education institutions pursue within their inter-university networks) which will be conceptualised in the following. In Chapter 3 (theoretical framework) intervening variables will be introduced.

Figure 1: Higher education institutions' objectives towards their network engagements determine their activities pursued within the networks. Based on this, it is expected that higher education institutions' network objectives and network activities are aligned with each other.



Network objectives are defined as specific results which a higher education institution aims to achieve through the engagement in an inter-university network. Network objectives are determined at the institutional level. Examples include an enhanced international capacity of faculty and administrators, an elevated institutional reputation and an increased external funding through international research grants. *Network activities* are defined as the interaction of one higher education institution with one or multiple other network member institutions through the network structure, i.e. the activity was initiated or facilitated by the network structure. Network activities can be as varied as joint research grant applications, staff exchange, joint curriculum development and benchmarking projects.

The expected relationship of the two variables, i.e. how the independent variable is thought to affect, influence or alter the dependent variable, is specified by the theory employed (Johnson et al., 2007). This study draws on the resource dependence theory which considers cooperation between organisations as a strategic action to access and control resources which they need to prosper and survive (Pfeffer & Salancik, 1978; Pfeffer & Nowak, 1976). The theory predicts that if higher education institutions engage in inter-university networks, they do so for explicitly formulated objectives and strategically arrange all their network activities as purposeful actions targeted at the fulfilment of these objectives. This means that the resource dependence theory determines the network objectives as cause and the network activities as effect. Based on this, the theoretical expectation of this study is that the higher education institutions' objectives towards their inter-university networks and the activities which they perform within them are directly aligned with each other. The goal of this research is to test whether the identified theoretical prediction holds against empirical data and to find explanations for the respective result. Furthermore, the resource dependence theory allows theorizing on the mechanism through which the cause produces the effect (Gschwend, 2011). The perspective explains how the higher education environment translates into the needs (resource scarcities) of higher education institutions, how they determine preferences and objectives on the basis of these needs, and how these needs are transformed into activities. The

relationship between the variables and the causing mechanism are further outlined in the theoretical framework.

To test the resource dependence theory's expectation, this explanatory study adapts a research design which rests on a cross-sectional multiple case study. Five higher education institutions of one inter-university network, the European Consortium of Innovative Universities (ECIU), were selected. The choice for the ECIU and the sampling strategy, which has been informed by the logic of purposive sampling, are further outlined in the methodological part of this thesis. The qualitative research design with a small n facilitates the collection of in-depth information on the extent and nature of the case study institutions' network engagement. The data on the inter-university network engagement of the five cases are obtained through semi-structured interviews and desk research. The methodological part of this thesis further responds to the methodological approach of this study. The results of this research are first presented as individual case studies and then consolidated in a cross-cases analysis suggesting generalisations about the alignment between the network objectives and network activities across the institutions.

1.4. OVERVIEW OF THE THESIS

This thesis has begun with introducing the proliferation of inter-university networks as a response to an overall process of globalisation. The introductory chapter has set out the problem statement and the research focus, followed by an overview of the research design. The remainder of the thesis is divided into five chapters. The second chapter delves into the phenomenon of inter-university networks. The third chapter develops the thesis' theoretical framework, outlining the resource dependence theory's main concepts and the perspective's application to the object of this study. In the fourth chapter the study's methodological approach is presented. Issues of sampling and data collection are related to the needs of the research question and described in a detailed manner so that enough information is provided to replicate the study. Chapter 5 includes the analysis of the empirical data concerning the nature and extent of the case study universities' network engagements and the alignment between the network objectives and network activities, starting with an individual analysis of each respective case and later pursuing a cross-case analysis looking for overlapping findings. Chapter 6 answers the research questions and discusses the findings of the study.

2. Inter-university networks

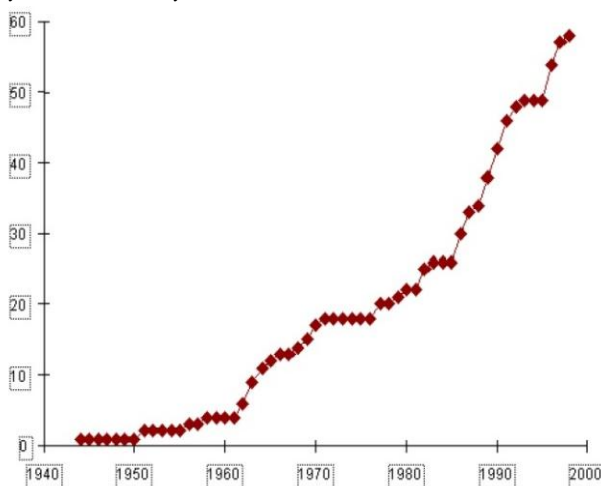
It has been found that the available literature and research material on inter-university networks are limited, with a lot of the data and literature concentrated on university mergers (e.g., Eastman & Lang, 2001; Harman & Meek, 2002; Skodvin, 1999; Ripoll-Soler & de-Miguel-Molina, 2013). Also, the increase and change of inter-organisational arrangements in higher education as well as the added value of inter-university networks to participating institutions have seldom been a topic of systematic research. This was confirmed by several authors in the field, including Beerkens (2004), Wit (2004), Brown et al. (2007). Gunn & Mintrom (2013). To approach the topic of inter-university networks, this chapter will set the stage by illustrating the rise of formal collaborative arrangements between higher education institutions in the last decade. Thereupon, inter-university networks will be characterised and defined. The final section of this chapter will be responsive to the insightful literature on factors of success and failure of inter-university networks.

2.1. THE RISE OF INTER-UNIVERSITY NETWORKS

Formal cooperative arrangements between higher education institutions exist since over a century. The Association of Commonwealth Universities, for example, operates since 1913. While the number of such cooperative arrangements increased substantially after World War II, it has skyrocketed in the last 20 years (see Figure 2). Although pace and intensity of this development differ from region to region, the evolvement of inter-university networks is observable on a worldwide scale in both developed and developing countries (Beerkens, 2002).

In 2002, there were over 600 formal cooperative arrangements of different types between higher education institutions (Denman, 2002) and their number is anticipated to have grown even further since then (Gunn & Mintrom, 2013). The fact that higher education institutions are not anymore only member in one network, but tend to see more and more value in multiple memberships further contributes to this development (Wit, 2004).

Figure 2: Cumulative growth of formal cooperative arrangements between higher education institutions by number and year in the second half of the 20th century (extracted of Denman, 2002).



Cooperative arrangements between higher education institutions have not only increased, but also changed their nature. There is a trend towards networks which are leadership-driven and multilateral with multipurpose character mostly within the European Union (Wit, 2002). In addition, while most of the old and traditional networks comprise hundreds of member institutions of various types, younger inter-university networks appear to aim at keeping a small size (Teather, 2004b; Beerkens, 2004).

In conclusion, the increasing engagement of higher education institutions in cooperative arrangement between higher education institutions indicates that such agreements matter in the contemporary world of higher education.

2.2. COOPERATION IN INTER-UNIVERSITY NETWORKS

Cooperation between higher education institutions can exercise a range of options. As Georghiou and Harper (2015) frame it, “any scale of working together begins with cooperation” (p. 2). Both in the literature and in practice, the terminology related to formal cooperative arrangements between universities is unclear and is studied under the rubrics of inter-university relationships, coalitions, cooperative arrangements, and cooperative agreements using terms such as consortia, federations, alliances, associations, and partnerships (Provan, et al., 2007; Teather, 2004a). As a response to this conglomerate of terms, various scholars developed classifications of cooperative arrangements between higher education institutions in order to advance a common understanding of the concepts (Harman, 1988; Lang, 2002; Neave, 1992; Wächter, 2000; Ginkel, 1996; Wit, 2001; Beerkens & Wende, 2007). Looking at the different attempts of classifying cooperative arrangements between higher education institutions (Appendix 1), it becomes clear that terms are often used interchangeably and categories are overlapping. There is no overarching, all encompassing definition of inter-university networks which could be used for this study. Therefore, the following section will introduce key characteristics of this particular type of collaboration. The section closes with a definition of inter-university networks which sets suitable limits to this research.

First, inter-university networks are horizontal arrangements between higher education institutions on the institutional level. They are based on equity and cooperation takes place through coordination while, at the same time, all member institutions retain their separate autonomy and identity. The member institutions determine and formally codify the structure of the network, define the roles which actors play within the network, prescribe the issues which are discussed and how they are dealt with and set the decision rules (Marsh & Smith, 2000). Inter-university networks have typically an indefinite time-span (Beerkens, 2004). They are directed by a board which appoints executive directors, coordinators or presidents of the network (Lang, 2002). An additional administrative layer exists apart from the member institutions and is created above the participating organisations. Such a *network administrative agency* (Provan & Kenis, 2007) makes inter-university networks exceed loose cooperation between higher education institutions and provides the network with a separate identity, own staff and a budget (Denman, 2002). While this thesis focuses on networks which are institutionally driven, inter-university networks can also be faculty-, discipline-, or student-driven as well as stimulated by governmental units (Teather, 2004b).

Second, membership in inter-university networks is normally limited and restricted to institutions that are allowed by the other partners to enter the arrangement (Chan, 2004). Brown et al. (2007) differentiate between open, exclusive and closed inter-university networks. The number of members in inter-university networks can vary between a couple and several hundreds. Most inter-university networks which were established in the last decades feature ten to 30 member institutions (Stockley & Wit, 2011). Since inter-university networks are voluntary arrangements, higher education institutions can leave the network anytime. Nevertheless, especially in the case of small networks, the cooperation depends on the active commitment by its member institutions (Denman, 2002) and the typical intention is to establish long-term and sustainable sets of relationships (Chapman et al., 2014).

Third, while inter-university networks can be both national and international, this thesis focuses on cooperative arrangements between higher education institutions of multiple countries. The geographic dimension is recognised to play a central role in the formation and identity of inter-university networks so that their membership is often determined geographically (Beerkens, 2004; Wit, 2004). There are many European networks such as the Network of Universities in the Capitals of Europe, the European Consortium of Universities of Technology, the Coimbra Group and the Utrecht Network. Other networks have a rather interregional character, such as the European Confederation of the Universities of the Upper Rhine (EUCOR) including five German, French, and Swiss higher education institutions located within a radius of 200 km, or a cross-regional scope, such as the University of the Arctic, a network consisting of 143 member institutions from the circumpolar region promoting education and research for regional empowerment.

Besides their geographical identity, inter-university networks often emphasise that their member institutions strive for a common goal (e.g., student exchange or research cooperation), share visions (e.g., sustainability) or other characteristic (e.g., capital, technical or innovative universities) (Brown et al., 2007). Typically, inter-university networks try to accentuate the uniqueness of their purpose, mission, or niche market (Denman, 2002). Having said that, cooperation within inter-university networks typically covers several activities and multiple disciplines and/or themes (Beerkens, 2004).

This leads to the answer of the first sub questions of this thesis: *How can international inter-university networks be defined?* Inter-university networks are defined as formal, multilateral, multi-purpose and voluntary cooperative arrangements between higher education institutions from multiple countries which are coordinated by an additional administrative layer.

Although the landscapes of and for inter-university networks are changing, it is helpful to get a sense of some relevant networks which were established in the recent past. Appendix 2 lists some European and global inter-university networks in Europe, covering a range of forms, aims and activities.

2.3. FACTORS OF SUCCESS AND FAILURE OF INTER-UNIVERSITY NETWORKS

There is substantial literature of scholars theorizing about and testing factors which contribute to the success or failure of inter-university networks. Looking into this literature helps identifying variables which intervene the relationship between this study's variables (network objectives and network activities).

Denman (2002) asked 180 international university organisations (including inter-university networks) to identify the greatest challenges of inter-university cooperation. Maintaining linkages, fostering active participation of members, language and cultural barriers, standardised programs and procedures, and, finally, the lack of funds and high costs are mentioned as the greatest difficulties (Denman, 2002). Examining ten inter-university networks throughout America, Asia and Europe, Deiacio et al. (2009) contribute to this by pointing to the risk of underestimating the management capacity and resources needed for engagement in inter-university networks.

The research of Denman (2002) and Deiacio et al. (2009) belong to the few studies to date which give attention to the risks for successful inter-university cooperation and reasons why higher education institutions might not be able to use their network as intended. Far more studies, instead, focus on the identification, description and testing of factors which increase the performance of inter-university networks. Based on a literature review, Stockley and de Wit (2011) compiled a list of elements which institutional networks should pay attention to in order to improve the network success. These include the network's mission, purpose and objectives, the financial resources, the geographical focus and the size of the network. In addition, the authors found that the membership should be composed along the network's mission as well as that clear evaluation mechanisms need to be in place (Stockley & Wit, 2011). Stockley and de Wit (2011) also emphasise the importance of the development and implementation phase where main framework conditions and the network purposes are set.

Examining three global inter-university networks on the basis of publicly-available information, Gunn & Mintrom (2013) add to the work of Stockley and de Wit (2011) by identifying five factors which are expected to increase the ability of inter-university networks to become strong and sustainable and to create collaborative advantage for their members. First, the network needs a clear and compelling strategic purpose (Gunn & Mintrom, 2013). This way, its member institutions join for adequate and well-aligned reasons and the likeliness that they recognise the value of sustained cooperation will increase. Second, a shared commitment to the advancement of *all* member institutions with the end to converge their status (compatibility) has the potential to further increase the likeliness of sustained and even-handed cooperation. Third, networks become valuable resources to member institutions if they promote benchmarking and learning opportunities among the members. If these are well documented, the benefits of the membership will become more apparent and the commitment towards it will be strengthened. Fourth, the network and its benefits need to be meaningful to all. This means that the salience of the network to the staff, faculty and students is expected to be positively related to their commitment and engagement in the network. Lastly, Gunn and Mintrom (2013) maintain that networks need to remain an on-going relevance and the capacity to change and adapt to new trends and shifting needs.

Especially the selection of suitable network partners has received substantial attention in the literature. Lang states that “successful cooperation depends also on a prior assessment of each prospective cooperating partner’s array of programs and cost structures” (Lang, 2002, p. 157). This shows that networks are strongly determined by the institutions which form their membership. Gunn and Mintrom (2013) put forward that similarity between network members is the key to positive exchange and suggest that networks with compatible partners are more likely to be successful. At the same time, authors put forward that higher education institutions do better by engaging in networks with complementary partners since “the breadth and heterogeneity of an organisation’s social ties may determine its access to different sorts of information, thus affecting its ability to recognise and respond to environmental threats” (Kraatz, 1998, p. 623). Beerkens and Wende (2007) find that a high degree of compatibility between network members is not as critical to network success, except in the case of very complex forms of cooperation. Based on both quantitative and qualitative data obtained by a multiple case study on four inter-university networks, Beerkens and Wende (2007) conclude that network members should possess resources which are strategically valuable for the other members. In addition, such “sources of complementarity” need to come along with a strategy to recognise and exploit these resources (Beerkens & Wende, 2007). Thus, scholars agree that the selection of participants form an important part of a cooperative network strategy. It can be concluded that the network partners should be selected according to the objectives of the network allowing access to the resources sought, while taking cultural and other differences into account.

Table 1: Factors of success and failure of inter-university networks identified in the literature

Risk Factors	Success Factors
Lack of financial / human resources	Awareness of the needs, purposes and benefits of the network engagement
Cultural and language barriers	Selection of partners in according with these goals, objectives and compatibility
Lack of commitment of students and staff	Clarity with regard to organisational structure (size, geography, governance, etc.)
Inconsistent standards and procedures	Salience of the network (benefits) within participating institutions
Conflicting priorities	Resource provision (incl. financial and human resources)
	On-going relevance

This section has shown that many factors can influence the performance of inter-university networks (see Table 1 for an overview). Success and failure can be critically influenced from the beginning on when it comes to the awareness of the needs, purposes and benefits of inter-university network engagement and the selection of partners in accordance with these goals, objectives and compatibility. Furthermore, the organisational structures and salience of the network, the implementation and resource provision and the assessment and improvement process were identified to play critical roles.

3. Theoretical framework

The following chapter presents the theoretical foundation of this study which is based on the resource dependence theory. The chapter starts out by introducing different theoretical approaches to inter-organisational cooperation and explains why these are less suitable for the sake of this study. Subsequently, the fundamental assumptions of the resource dependence theory will be described. The environment plays a major role in the resource dependence theory. Therefore, the third section of this chapter (Section 3.3.) analyses current changes and developments in the European higher education environment which reduce higher education institutions' available resources and lead to the formation of inter-university networks. Finally, the resource dependence theory will be applied to the object of this research. It will be shown that the resource dependence theory determines the relationship between the variables of this study as network objectives lead to network activities. The final section, furthermore, explains the resource dependence theory's prediction with regards to this study's major research question. The theory expects that the activities performed by higher education institutions within their networks serve their objectives towards the network. Thus, it expects the higher education institutions' network objectives and network activities to be directly aligned with each other.

3.1. THEORIES ON INTER-ORGANISATIONAL COOPERATION

The growing acknowledgement that organisations operate in a context of environmental interconnectedness and that an organisation's performance often critically depends on its linkages to other organisations resulted in a vast but highly fragmented literature theorizing about the causes and consequences of cooperation. Commonly used theories in research on inter-organisational cooperation include the network theory, transaction cost theory, exchange theory, institutional theory, and resource dependence theory.

The *social network theory* emphasises the social aspect of cooperation. It explains cooperation in terms of the position of an organisation within its network (Nohria & Eccles, 1992) and the mechanisms and processes that interact with network structures to yield certain outcomes for the member organisations and the network itself (Borgatti & Halgin, 2011). However, while focussing on the consequences of network variables, such as having many ties or being centrally located (Borgatti & Halgin, 2011), the social network theory takes a different focal point as needed for this study.

The *transaction cost theory* is based on the assumption that exchange consists of transactions (Fyall & Garrod, 2005). It predicts that organisations choose to cooperate because it allows them to minimise transaction costs, which include the costs related to finding network partner, coordinating and negotiating cooperating and of monitoring and enforcing compliance with agreements (Boerner & Macher, 2005). The theory is based on the economic assumption of rational behaviour, information asymmetry, and opportunisms. Transaction costs theorists often explain cooperation as a way to minimise transaction costs for a combination of exchange conditions, i.e. demand uncertainty, task complexity, and frequency (Jones et al., 1997). However, the structural emphasis of transaction costs neglects the dynamic nature of

cooperation and the processes involved in such (Gulati, 1998). Therefore, this perspective is less suitable to explain the relationship between network objectives and network behaviour.

The *exchange perspective* (Levine & White, 1961) bases the development of reciprocal relationships on the opportunities for mutual gain. The theory assumes that organisations recognise their interdependence of problems in their domain and the benefits of developing ties aimed at solving them. Thus, organisations cooperate voluntarily and the motivation to exchange is internal (Williams, 2012). According to the exchange perspective, the key drivers of cooperation are trust, commitment, and fairness mechanisms to coordinate cooperation. Hence, the theory is more suitable to study the relational structures that are created by organisations in order to facilitate coordination (Fyall & Garrod, 2005).

The *resource dependency theory* and the *institutional theory* are both concerned with the relationship between an organisation and its environment. Both theories assume that organisational behaviour is constrained by multiple external pressures and describe how organisations depend on other actors in their environment (Hessels & Terjesen, 2010). However, the two theories differ as to how they explain the organisations' motivation to cooperate. The institutional theory, on the one hand, predicts an increase of an organisation's survival chances by demonstrating "conformity to the norms and social expectations of the institutional environment" (Guo & Acar, 2005, p. 346). The theory describes how an organisation adopts cooperation as a practice that is considered acceptable and legitimate within its organisational field (Scott, 1995) and thus predicts that organisations are inclined to imitate the behavioural norms of other actors in their environment (Oliver, 1991). Following this, decisions to cooperate are likely to be influenced by the extent to which cooperation has become either taken for granted or necessary to appear legitimate vis-à-vis the organisation's environment (Todeva & Knoke, 2005). The resource dependence theory, on the other hand, argues that organisations only cooperate in order to acquire and control resources which are critical for them to survive and prosper (Pfeffer & Salancik, 1978).

The resource dependence theory provides a broad basis and an interesting theoretical framework to explain cooperation in a higher education context with increasing competitive and market-driven dynamics. It was found that bigger parts of the studies on inter-organisational and inter-university cooperation also use resource based approaches to explain cooperation in higher education (e.g., Cameron, 1984; Lang, 2002; Beerkens & Wende, 2007; Luijten-Lub, 2007; Harman & Meek, 2002; Middlehurst, 2001; Oliver & Ebers, 1998). The research at hand tests a theoretical expectation of the resource dependence theory. It uses the perspective to derive a prediction regarding the relationship of the two variables of this study (network objectives and network activities) and thus the answer to the research question. The theory guides the methodological approach (which observation to make) and the respective observations provide a test of the value of the theory (Vaus, 2001). This is in line with the research style of theory testing (Vaus, 2001). In the following, the main concepts and elements of the resource dependence theory will be outlined. Then, the theory will be applied to the context of higher education and, finally, to this research.

3.2. THE RESOURCE DEPENDENCE THEORY: PRINCIPAL ASSUMPTIONS

The resource dependence theory, which was coined by Emerson's classic "Power-Dependence Relations" (1962) and Pfeffer and Salancik's "The External Control of Organizations" (1978), is a well-known theory in the social sciences and commonly used to explain the relationships between organisations and their environment in terms of inter- and intra-organisational relations.

To begin with, one of the theory's fundamental assumptions is that organisational behaviour is shaped by the environment and the social context within which organisations operate (Pfeffer & Salancik, 1978). Organisations are seen as open systems which are not able to generate all the resources they need. Therefore, they are dependent on other actors in their environment which control the needed resources. According to the resource dependence theory, dependence refers to "the product of the importance of a given input or output to the organisation and the extent to which it is controlled by a relatively few organisations" (Pfeffer & Salancik, 1978, p. 51). Dependencies are often reciprocal and sometimes indirect (Rossignoli & Ricciardi, 2015). Important (financial, material or symbolic) resources are anything organisations perceive to need in order to perform actions, satisfy their stakeholders and achieve goals (Harsch, 2015).

Resource dependence theorists (e.g., Aldrich, 1979; Pfeffer & Salancik, 1978; Pfeffer & Nowak, 1976) consider cooperation as a strategy of organisations to access and control the resources which they need for survival and which they would otherwise not get. This can lead to a situation where cooperation dominates competition for the sake of enhanced survival chances (Dai, 2010). At the same time, cooperation serves as a way to cope with uncertainties. In fact, resources dependence is coupled with a lack of perfect knowledge (uncertainties) about the availability of exchange partners and the rates of exchange in an organisation's environment (Oliver, 1990). Further uncertainties are created by the fact that environments constantly change (Davis & Cobb, 2010). For example, resources can become more or less scarce whereupon an organisation's degree of dependence can shift. Through cooperation organisations can regulate the environment, make it more predictable and thus reduce uncertainties (Gulati & Sytch, 2007). By increasing their control on resources, organisations promote stability and predictability and increase their influence and power (Pfeffer & Salancik, 1978).

Furthermore, the resource dependence theory suggests that the degree of dependence on scarce resources controlled by other actors influences the degree and extent of an organisation's cooperative activities (Pfeffer & Salancik, 1978). In general terms, the greater an organisation's resource scarcity, the more dependent it is on other actors and the more it needs to cooperate in order to acquire the critical resources needed (Leišytė, 2007). At the same time, cooperation usually means compromise so that inter-organisational network engagements always come along with some loss of autonomy (Provan, 1984) and constrain regarding an organisation's subsequent actions (Dai, 2010). Since organisations have the natural willingness to retain autonomy over processes and decisions, their general willingness to cooperate is limited (Oliver, 1991). Consequently, according to the perspective, organisations cooperate as much as necessary to survive and prosper but as little as possible to keep their autonomy high. This means where

adequate resources are available, organisations do not cooperate, but their cooperative activities are focused on areas where they have resource scarcities. Thus, organisations' resource scarcities predict their cooperative behaviour.

Finally, the resource dependence theory sees organisations as rational actors whose behaviour is based on calculation aimed at maximising power and autonomy rather than pure efficiency (Leišytė, 2007). Organisations make strategic choices to cooperate in order to deal with the environment in their own interest and for their own benefit (Pfeffer & Salancik, 1978). Nevertheless, the resource dependence theory also points to constraints in the availability and feasibility of certain choices (Leišytė, 2007). External obstacles, such as legal, financial, or economic barriers, as well as internal barriers, such as the organisation's capacity in terms of financial and human resources, may prevent organisation from making particular choices or taking certain actions.

To sum up, according to the resource dependence theory, organisations operate in an environment which is characterised by resource scarcities and uncertainties. Therein, organisations cooperate to access and control resources which they need survive and prosper. Thus, they cooperate in their own interest rather than for mutual benefit. Since organisations are expected to strive for self-sufficiency and autonomy, their cooperative activities do not exceed what is necessary to access and control the resources which they need.

3.3. RATIONALES OF INTER-UNIVERSITY NETWORKS: RESOURCE SCARCITIES IN THE HIGHER EDUCATION ENVIRONMENT

According to the resource dependence theory, the reasons for cooperation in inter-university networks lie in the resource scarcities of the higher education environment. Many scholars have adopted this view by explaining the proliferation of inter-university networks with "profound transformations in higher education" (Teixeira, et al., 2014, p. 271). Such transformative processes in higher education are expressed in many and varied ways. Globalisation, internationalisation, marketisation and massification of higher education, demand overload and reduced governmental support are only some of the key issues commonly mentioned in this context (Wit, 2009; Altbach et al., 2009; European Commission, 2009). The following section outlines some of these major developments which have boosted resource scarcities in higher education in the recent past and shows how these developments account for inter-university networks.

Many scholars identified globalisation as the most influential factor shaping the higher education environment today (e.g., Teather, 2004b; Wit, 2004; Brown et al., 2007). Broadly understood, globalisation means "the creation of world relations based on the operation of free markets" (Maringe & Foskett, 2012, p. 1). Globalisation spurs global competition and, as a consequence, resource scarcity in higher education institutions' environments (Wit, 2009; Altbach et al., 2009; European Commission, 2009). Beerkens defines globalisation as "a process in which basic social arrangements become disembedded from their spatial context due to the acceleration, massification and flexibilisation of transnational flows of people, products, finance, images and information" (Beerkens, 2003, p. 137). Thus, while spurring competition, globalisation also makes the environment more complex and therefore increases the level of uncertainty

for organisations operating within it (Scott, 2000; Delgado-Márquez et al., 2012). At this point, it is important to recall that the reality shaped by globalisation is beyond the control of higher education institutions and “largely inevitable in the contemporary world” (Altbach et al., 2009, p. 123). This confirms the assumptions of the resource dependence theory that higher education institutions are forced to respond to these environmental pressures by either adapting or changing the environment.

Economy and efficiency are central causal themes throughout the research literature on inter-university cooperation. Economic factors and increased competition are accepted as major reasons for greater resource scarcity and hence for the formation of inter-university networks (Chan, 2004; Lang, 2002; Deiaco et al., 2009). Decades of rising student numbers (Ek et al., 2013) and governments’ reduced investment capacities (Vught & Jongbloed, 2013) confront higher education institutions with demand overload. *Demand overload* describes a situation of the knowledge-based economy in which the resources that support higher education institutions become more and more limited, while the services demanded of them - in terms of scale, breadth, quality and distribution - increase (Clark, 1998; Kehm, 2014). Governments have lately responded to that with a range of reforms to restructure higher education systems concerning steering and funding (Jongbloed, 2009). Changes regarding steering can be summarised as decreasing state control in exchange for higher performance with regard to all dimensions of the university, i.e. teaching and learning, research and knowledge transfer (Rumbley et al., 2014). Thus, government funding has been increasingly distributed on a competitive basis and related to output indicators (Boer & Jongbloed, 2015) accompanied with growing accountability requirements (Vught & Jongbloed, 2013). These shifts increase higher education institutions’ scarcity in funding. Higher education institutions need to diversify their funding base and, hence, are more dependent on third parties. They are required to increasingly compete for their funding, target for results and prioritise and thus adopt a behaviour which is “entrepreneurial and efficiency-driven” (Clark, 1998, p. 113).

Operating in an environment of higher demand combined with greater resource scarcity, higher education institutions’ motivation to engage in inter-university network can become very forceful. In this light, the choice of higher education institutions to join inter-university networks is a response to changes in the societal and policy domain. It is expected that through networks, higher education institutions can make potential competitors confederates in the struggle for scarce resources and gain access to and exploit the needed assets that they bring into the arrangement (Beerkens, 2002). Inter-university networks offer the possibility to learn about the work and interests of colleagues beyond the own institution. This can consolidate interests, capabilities and strengths for joint research projects and grant applications (Deiaco et al., 2009). Inter-university networks allow higher education institutions to access the strengths of partners for their work in traditional areas while taking on new challenges and exploit niche areas that are constantly emerging (Deiaco et al., 2009). Cooperating through inter-university networks can benefit in terms of increased chances of research grants, lower costs, new programs and opportunities for growth (Lang, 2002).

The change from previously relatively autonomous higher education institutions to institutions which are constructed upon market ideologies is commonly referred to as *marketisation* of higher education (Ek et al., 2013; Molesworth, 2011) or *academic capitalism* (Slaughter & Rhoades, 2004). Marketisation of higher education implies a shift of higher education institutions from “a public service driven by professionals towards a market-driven service fuelled by purchasers and customers” (Murgatroyd & Morgan, 1993, as cited in Chan, 2004, p. 34). Therein, the needs and concerns of stakeholders, such as the students, but also employers and parents, are more and more regarded as a central reason for the organisation’s existence (Foskett, 2012). Consequently, higher education institutions have to provide the goods and services which the “customers” want. These demands increasingly exceed the generating capacities of higher education institutions, which is why they are forced to cooperate internationally.

A prominent example of this is the demand for programmes and policies which bring “an international or intercultural dimension into the teaching, research, and service functions of the institution” (Knight, 1994, p. 3), also known as *internationalisation* of higher education. Students increasingly demand possibilities to gain international experience (Beelen & Wit, 2012) and future employers appreciate globally competent graduates capable of interacting and functioning in an international setting (Hénard et al., 2005). Inter-university networks can represent attractive key sites where internationalisation can be promoted on a large scale influencing both spheres of action, commonly characterised as “internationalisation at home” and “internationalisation abroad” (Knight, 2004). Inter-university network facilitate access to possibilities for student and staff exchange and joint teaching programmes (Wit, 2004). In addition, they can serve to seek and institutionalise long-term joint solutions to issues related to fees, quality assurance and credit transfer (Dakovic, 2014). Eventually, exchange in inter-university networks can spur strategic thinking on how to tackle challenges of internationalisation and beyond (Hénard et al., 2005). While several studies of strategic networks between firms have identified the sharing of knowledge (including technology, know-how and organisational capability) as their dominant objective (Grant & Baden-Fuller, 2004), Gunn & Mintrom (2013) illustrate that opportunities for organisational learning also represent an attractive asset of inter-university networks for higher education institutions. Their analysis of three international inter-university networks shows that they “have a unique and strategically significant ability to join up knowledge networks. Compared with other organisational forms, they are better able to readily mass, generate and disseminate knowledge relevant both to the management and future development of universities” (Gunn & Mintrom, 2013, p. 180). Inter-university networks can create opportunities for participating administrators to benchmark their learning against one another and for the exchange of good practice on a range of issues, from academic entrepreneurship to governance (Brown et al., 2007; Koza & Lewin, 2000). Curriculum partnerships can serve to share or transfer a part or an entire curriculum and the related degree(s) from one institution to another (Waterval et al., 2015). Furthermore, the impact of new technologies has enabled higher education institutions to expand information exchange but also have opened up demands for new services, such as online courses (Beerkens, 2002). Chan (2004) maintains that joint courses offered through the internet represent a growing area of inter-university networks. This

shows that also new communication technology can also push higher education institutions into relationships with each other.

Then, cooperation between higher education institutions is also sometimes directly demanded by financial provider. This becomes especially apparent in the process of denationalisation within the European Union (EU) (Olds, 2009). Many EU programmes in education and research provide funding and research grants under the condition that applicants come from multiple higher education institutions from multiple countries. Also, sometimes the success of attracting external funding is a condition for (more) public funding (Boer & Jongbloed, 2015). Thus, in order to secure public funding and to access critical external financial resources, higher education institutions have to cooperate across national borders. Also EU initiatives, such as ERASMUS or the European Research Area (ERA), stimulate and encourage extensive networks between universities. In a knowledge-based economy research and innovation are key factors in generating economic growth (Ripoll-Soler & de-Miguel-Molina, 2013). In this context, inter-university networks are encouraged in order to make the associated regions and countries more competitive and to serve region-building and its economic and social objectives (Teather, 2004b; Harman & Meek, 2002; Beerkens, 2002). To sum up, the rise of inter-university networks is also related to initiatives for regionalisation and regional integration (Rumbley et al., 2012; Deiaco & Melin, 2006; Lang, 2002; Brown et al., 2007).

Not only for the respective regions but also for higher education institutions themselves “high quality and respected research can be one of the most important sources of competitive advantage” (Beerkens, 2004, p. 65). It is expected that through inter-university networks the quality of research can be improved. Resources, such as expensive facilities, library books and journals, as well as skills and knowledge, can be accessed through inter-university networks in the long run (Weifang, 1999). There has been increasingly consent that cutting-edge research (particularly in the fields of science, technology, engineering, and mathematics) can be most effectively achieved when combining the expertise of international researchers (Rumbley et al., 2012). Most compelling research content is increasingly moulded around complex, global themes (e.g., climate change, economic development, human rights) requiring knowledge spread throughout different disciplines and higher education institutions (Gibbons, 1998). Such research is often highly technical and long-term which is difficult to master by one institution alone (Rumbley et al., 2012). Thus, research increasingly requires inter-organisational interaction, coordination and cooperation (Beerkens, 2002; Rumbley et al., 2012). Also, cooperation boosts research impact. Articles which have co-authors from multiple countries are more highly cited (Vught & Jongbloed, 2013).

There is also a political rationale for inter-university cooperation. Hereby, higher education institutions joint networks in order to participate in a collective representation of higher education institutions vis-à-vis international public authorities, such as the EU. By operating collectively, inter-university networks can open up policy channels to gain better access to governmental authorities (Beerkens & Wende, 2007) and engage more easily in public debates in order to promote policies or programmes (Olds, 2009). This can increase control and influence (Mikulskiene, 2015).

Finally, international rankings and the push to achieve world-class status are another example of market oriented dynamics in higher education (Cheng et al., 2014). Many higher education institutions today aggressively leverage their (international) profile as a way to stand out in the higher education marketplace (Rumbley et al., 2012). This is seen as an advantage to greater access to funding but also to recruit high-fee paying international students and top academic talent from around the world (Gunn & Mintrom, 2013; Chan, 2004). By deliberately cooperating with partners of equal or greater status, higher education institutions see opportunities for greater reputation, prestige, global visibility, branding, differentiation and profiling (Knight, 2011; Chan, 2004; Deiacio et al., 2009; Olds, 2009). Reputation as a specific resource gain of networks was especially emphasised by Saxton (1997) and Hill (1990). Although they focused on cooperation between firms, both authors found a positive relationship between benefits from network participation and partner reputation. A study of Gunn & Mintrom (2013) has shown that higher education institutions have moved up the *Academic Ranking of World Universities* after they had joined international inter-university networks. While the results are statistically significant, this is correlation not causation. Nevertheless, scholars agree that being a member of a reputable network or linked to high profile institutions can provide a boost the competitiveness of higher education institutions (Knight, 2007a; Sağlam, 2013).

This section has shown that higher education institutions' environment has changed due to different developments in the policy, academic and technology domain. These include stagnating public funding, pressure for widened access and for contributing to the national economic development, intensified competition at home and abroad, the growing role of the market and more insistent public demands for accountability and customer service. As a consequence, higher education institutions are confronted with new uncertainties and less predictability (particularly motivated by cut-backs in public funding and processes of globalisation) as well as new resource scarcities and interdependencies (particularly motivated by increased competition and demand for efficiency). This pushes its actors towards cooperation and, hence, leads to the proliferation of inter-university networks. This further underlines the resource dependence theory's prediction that the motivation for higher education institutions to engage in inter-university networks is stimulated by external factors rather than internal processes.

3.4. RESOURCE DEPENDENCE THEORY AND THE OBJECT OF THIS STUDY

An interesting observation is that international cooperation between higher education institutions has become more common in a period of increasing competition among higher education institutions. There is much discussion about the paradox of more cooperation as a response to elevated competition (Lang, 2002; Beerkens & Wende, 2007; Gunn & Mintrom, 2013; Koza & Lewin, 2000). In line with the resource dependence theory's assumption, Lang (2002) puts forward that competition represents the more basic impulse of higher education institutions which would traditionally strive for self-sufficiency and autonomy. Thus, the *first major assumption* of this study is that higher education institutions would not engage in inter-university networks if they could operate just as well alone.

From this follows that cooperation in inter-university networks does not occur naturally but represents a result of carefully considered, conscious and deliberate choices. Higher education institutions engage in inter-university networks because it allows them to access certain scarce resources which they otherwise would not get. They are aware that the benefits of cooperating to reach these specific resources (objectives) in mind will outweigh inevitable disadvantages (especially the loss of autonomy). This means that the explicit reasons for which higher education institutions engage in inter-university networks are expected to be limited in scope and based on their individual needs (resource scarcities). This leads to the *second major assumption* of this study, namely that higher education institutions make the strategic decision to engage in inter-university networks for explicitly formulated objectives according to their perceived resource needs. Resources which higher education institutions can gain and control through inter-university networks are diverse and include financial assets, human resources, educational resources, physical resources (such as research facilities), political representation, reputation, experience, and knowledge.

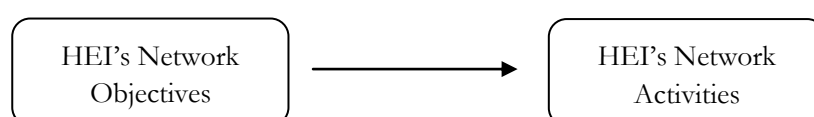
The resource dependence theory expects higher education institutions to be rational actors. This means that if they join certain inter-university networks for explicit reasons, they are also expected to use the network in order to achieve these. At the same time, the theory considers cooperation against the self-interest of higher education institutions; therefore, their active engagement (activities) in inter-university networks is expected to be limited to the acquisition of the resources which they need. This leads to the *third major assumption*. Higher education institutions strategically arrange their inter-university network activities as purposeful actions targeted solely at the fulfilment of the network objectives. This means to keep the cooperation as minimal and narrowed as possible in order to maximise autonomy.

To sum up, this thesis assumes that

- higher education institutions don't engage in inter-university networks if they can operate just as well alone;
- thus, if they engage in inter-university networks, they do so for explicitly formulated objectives based on their resource scarcities and
- strategically arrange all their network activities as purposeful actions targeted solely at the fulfilment of their network objectives.

This means that the resource dependence theory determines the network objectives as cause and the network activities as effect. The network activities are determined on the basis of the network objectives and targeted at the fulfilment of these objectives. Figure 3 illustrates this relationship.

Figure 3: The influence of higher education institutions' objectives towards their network engagements on their activities pursued within the networks based on the resource dependence theory.



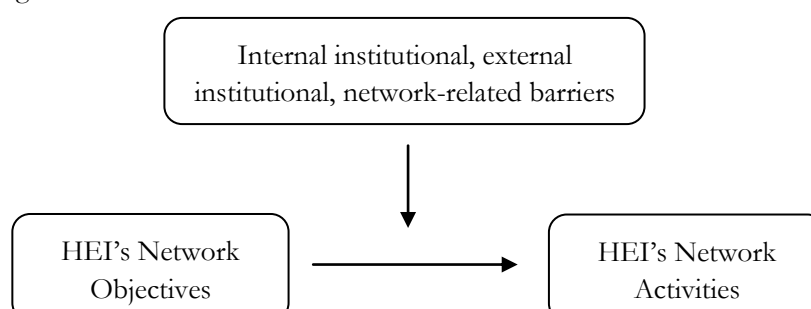
Based on deductive reasoning, this implies the following *theoretical expectation* for the research question of this study. The objectives which ECIU member institutions pursue by engaging in the ECIU and the activities which they perform within the ECIU are expected to be directly aligned with each other. It is expected that all of an institutions' network activities contribute to its network objectives and that all of its network objectives are pursued with its network activities.

This research aims to test this theoretical expectation. To this end, the objectives the case study institutions pursue with the ECIU membership and the activities the institutions perform within the ECIU are inquired. Subsequently the institutions objectives and activities can be matched and it can be assessed to what extent the institutions perform activities which contribute to their network objectives and to what extent the institutions network objectives are pursued with their network activities.

Intervening Variables

The resource dependence theory takes into account that organisation's flexibility in making strategic choices is limited (Leišytė, 2007). Both external as well as internal obstacles can present limits to an organisation's strategic actions and prevent the expected high alignment of network objectives and network activities. In section 2.3. several factors which influence the performance of inter-university network cooperation were identified. These can be used to identify variables which intervene the expected alignment between higher education institutions' network objectives and network activities. The following intervening variables were identified. First of all, internal barriers can include insufficient financial or human resources, management turnover and the lack of knowledge and engagement on the lower level, i.e. students and staff including their norms, values and professional and academic standards and routines. Secondly, external barriers can include legal and regulatory constraints which prohibit higher education institutions to take certain actions. Lastly, owing to the universities' embeddedness in individual regulatory, social and cultural contexts, there are also barriers on the network level which can arise. Discrepancies in member institutions' culture and language as well as standards and procedures can make joint activities difficult to implement. In addition, the resource dependence theory expects that not all resources and subsequently not all activities are of equal importance to the member institutions. Thus, differences in priorities can also represent an obstacle for an institution to perform activities in line with their objectives. Figure 4 illustrates the intervening force of the identified factors on the relationship between higher education institutions' network objectives and network activities.

Figure 4: The influence of higher education institutions' objectives towards their network engagements on their activities pursued within the networks based on the resource dependence theory including intervening variables.



4. Methodology

4.1. SAMPLING STRATEGY: CASE SELECTION

4.1.1. The ECIU

This study focuses on the network engagement of five higher education institutions within one inter-university network, the European Consortium of Innovative Universities (ECIU). The ECIU is a relatively small inter-university network of ten European higher education institutions and two associate members from outside Europe. The European ECIU members include Aalborg University (DK), the Autonomous University of Barcelona (ES), Dublin City University (IE), Hamburg University of Technology (DE), Kaunas University of Technology (LT), Linköping University (SE), Lodz University of Technology (PL), the University of Aveiro (PT), the University of Stavanger (NO) and the University of Twente (NL) (see Appendix 3 for a complete overview). The member institutions see themselves as Europe's most innovative and entrepreneurial universities¹. Founded in 1997, the network pools "like-minded" universities with the interest to further develop the entrepreneurial and innovative culture at their institutions and their role as promoter of transferring knowledge and research to society (ECIU, 2012). According to the ECIU charter signed in 1997, the ECIU member institutions have the following characteristics in common: "all have academic strengths in engineering and social sciences; all are relatively young, entrepreneurial, and progressive and have close ties with industry and the region where they are situated" (Kekäle, 2007, p. 68). Their efforts to contribute to the economic and social development of their regions are fortified by the fact that many ECIU institutions are based in regions which have experienced a decline of key industries in the recent past (e.g., shipbuilding, mining, textile industry) (OECD, 2009).

The focus of the ECIU is reflected in its structure. The ECIU's structure involves both generic permanent bodies and project related groups. The former entails two academic boards, the Steering Committee on Innovation in Teaching and Learning and the Steering Committee for Entrepreneurship and Societal Impact of Research. In addition, the ECIU features various thematic working groups (see Appendix 4 for an overview). When the two Steering Committees were introduced in 2013, some of the ECIU working groups terminated their (independent) existence and were integrated in one of the two Steering Committees. The remaining working groups continue operating as "Professional Networking Groups" which report to the ECIU local coordinators.

¹ The ECIU is based on Burton Clark's book "Creating Entrepreneurial Universities" (1998) (Kekäle, 2007; Vught, 1999). Analyzing five case study universities, Clark finds that universities which are confronted with demand overload adopt an "entrepreneurial response". He identifies five operational similarities in the universities' response. These include a strengthened steering core, an enhance development periphery, a discretionary funding base, a simulated heartland and an entrepreneurial believe (Clark, 1999).

The ECIU has an own secretariat, consisting of the ECIU Secretary General, which is currently located at the University of Twente. The ECIU secretariat can be classified as a Network Administrative Agency according to Provan (2007). There are several other positions within the ECIU administration: The ECIU Speaker (currently provided by the Autonomous University of Barcelona), a European Union Coordinator, a Public Relations Coordinator, a Human Resources Coordinator and a Chair for each of the two Steering Committees. The board of the ECIU comprises 13 members, including the Secretary General, the ECIU Speaker and one representative of every member university (mostly rectors or presidents) who meet twice a year. In addition, every member university features a local coordinator.

This short introduction to the ECIU network shows that it fulfils the characteristics of an inter-university networks as it was defined in the theoretical part of this thesis. The ECIU indeed is a *formal, multilateral, multi-purpose and voluntary cooperative arrangement between higher education institutions from multiple countries which is coordinated by an additional administrative layer*.

The ECIU represented an adequate choice for the sake of this study since it is a relatively small and focussed inter-university network. Since Europe shows a high level of activity in the field of inter-university cooperation (Teather, 2004b), it represented a logical region to focus on. With its size, age and the location of member institutions, the ECIU represents an average case of a European inter-university network (Stockley & Wit, 2011). However, the strategic orientation of the network on young and small universities with a strong focus on entrepreneurship and innovation is particular. This had to be taken into account when statements on the transferability of the findings on higher education institutions' engagement in other international inter-university networks were made.

4.1.2. The Case Study Universities

The selection of the five case study universities has been informed by the logic of purposeful sampling, where the researcher has selected cases on the basis of their usefulness (Babbie, 2007, p. 184). The ECIU features ten member institutions from ten different European countries and two non-European associate members. All member institutions are public higher education institutions. The associate member institutions were not included in the sample. The main goal of the case selection process was to obtain a maximum variety between the cases, in terms of size (in terms of total student numbers), type (comprehensive and technical universities), staffing (in terms of student / staff ratio), reputation (as measured by the position in the Times Higher Education ranking), budget (in terms of budget / student) and degree of internationalisation. The degree of internationalisation was determined by the number of international degree seeking students (signals the international orientation of the university) and the number of international joint publications (reflects the degree to which a university's research is connected to international networks) (see Appendix 7 for an overview of all ECIU member institutions and their key characteristics). In addition, it was taken into account to include both founding member institutions and institutions which entered the ECIU at a later stage. Since all member institutions of the ECIU are located in different European countries, the study automatically takes the diversity of the European Higher Education Area into account.

The maximum sampling variability could not be assured since the first case selection had to be adjusted after the data collection process had started. Three institutions which were included in the first selection were replaced. This was necessary because one of the institutions had left the ECIU in the meantime, another institution did not participate in the study, and a third institution needed to be replaced since not sufficient data on the institution's ECIU engagement was available. The final sample included the Autonomous University of Barcelona, Dublin City University, Hamburg University of Technology, the University of Stavanger and the University of Twente (see Table 2).

Table 2: The case study universities

University	Country	Year of Accession
Autonomous University of Barcelona	Spain	Founding member
Dublin City University	Ireland	2011
Hamburg Technical University	Germany	Founding member
University of Stavanger	Norway	2012
University of Twente	The Netherlands	Founding member

By selecting cases which vary as much as possible, it could be investigated whether the expected alignment between network objectives and network activities is shared across the cases. Thus, the sampling strategy in terms of variation of cases was necessary in order to test the theoretical expectation adequately. In addition, it was expected that the variables change for each case. The case study institutions have different motivations to participate in the ECIU, assess the value of activities in different ways, seek different outcomes, or value the same outcomes differently (Sakamoto & Chapman, 2011). Hence, a rich mix of ECIU network members allowed identifying various processes and structures that can constitute a part of the research question and increased the applicability of the results (Collins, 2010). The selection of the five universities as case studies allowed drawing near the “twin objectives of sampling” (Seawright & Gerring, 2008, p. 4). That is, on the one hand, a representative sample and, on the other hand, a useful variation on the dimensions of the studies theoretical interest.

4.2. DATA COLLECTION STRATEGY AND METHODS

The data collection consisted of semi-structured interviewing and desk research. The multiple-method approach allowed shedding more light on the phenomena, ensuring a balanced approach and triangulation of the findings. Therefore, it contributed to issues of validity and reliability. Through replication and by adding various analytical levels to the study, the multiple case study design made the analysis more compelling (Merriam, 1991; Collins, 2010) and strengthened “the precision, the validity and the stability of the findings” (Miles & Huberman, 1994, p. 29). The qualitative research design with a small n facilitated the collection of in-depth information on the extent and nature of the case study institutions' network engagement. Furthermore, it allowed rich descriptions of the institutions' activities within and objectives towards the ECIU. Following the interpretive ideal of a social world which is “understood, experienced

and produced” (Mason, 2002, p. 3), this qualitative case study was able to cater the complexities of the research question in a flexible manner.

4.2.1. Interviews

Semi-structured interviews with the case study universities’ ECIU local coordinators were the primary method of data collection. Appendix 5 provides an overview of the local coordinators of the case study universities including their main position and for how long they have been working in this position. Every ECIU member institution has one ECIU local coordinator who coordinates all ECIU-related activities of their home university in the ECIU network, transmits significant information from and to the network and distributes ECIU-related information within their institution. The local coordinators are the first contact person for ECIU matters within their institutions. They participate in the ECIU Executive Board meetings and are responsible for steering their institutions engagement within the ECIU as well as motivating and engaging their colleagues to participate in the EIUC. They typically work in a position in the international or strategic unit of the universities and are characterised by their link with many different parts of their institutions, which makes it easy for them to communicate and distribute information, but also to have a relatively good overview of the cooperative activities taking place within the university. ECIU local coordinators were selected as participants for this study because they were expected to have the broadest knowledge of the background, rationales, degree and extent of their home institution’s ECIU engagement. In addition, the local coordinators represent the institution within the ECIU and therefore represented an adequate information source for this study which looks at higher education institutions as its unit of analysis. The data collection confirmed the adequateness of the ECIU local coordinators as interview partners for this study.

The interviews were single telephone interviews with the ECIU local coordinators of the case study universities (except for the interview with the University of Twente which was done in person). The interviews took between 45 and 60 minutes and were followed-up by e-mails. The follow-up mainly covered questions on missing information on the institutions’ engagement in certain ECIU activities and further enquiries in order to make sure that the data certainly fit the conceptualisation of the variables.

The interviews with the local coordinators inquired the objectives of the institutions towards the ECIU and the activities pursued within the network. The semi-structured nature of the interview assured that the same questions and constructs were covered throughout the different interviews. This also allowed comparing and contrasting the different interviews. At the same time, the interview was open enough to receive unexpected information and to observe non-verbal cues to guide the interview (Grix, 2004). The interview questions were open-ended and, at the end of the interview, the interviewees were provided with the opportunity to give further comments on the discussed topics. This allowed for additional insight into the research object. The semi-structured form of the interviews allowed the clarification of relevant variables and patterns during the data collection. The interviews facilitated the access to a large amount of expansive and contextual information on both variables and allowed the discovery of the extent of the alignment between the institutions’ network objectives and activities.

The interviews were recorded and transcribed to a purposeful extent in order to secure descriptive validity and to facilitate the analysis (Maxwell, 1992). The data analysis was an on-going process. Following each interview, the interview was transcribed and examined for patterns that either relate to the literature reviewed, the theoretical framework, the document analysis or patterns emerging from the analysis of previous interviews. The process of transcription combined with a preliminary analysis and the triangulation of the findings greatly increased the efficiency of the data analysis as well as the internal validity of the conclusions (McKelvey & Holmén, 2009). As suggested by Kvale (1996), the researcher moved systematically back and forth between question formulation, data collection, literature and analysis. This helped the researcher to identify when to continue, stop or alter the direction of the research process or of the analysis and to detect and correct errors before they undermined the results (Morse et al., 2002).

It should be noted that although the local coordinators provided extensive information on both their institutions' activities within the ECIU as well as their objectives towards the ECIU network, it was found useful to also talk to other person involved in the ECIU in order to get a fuller picture of the network (see Appendix 6 for a complete list of the additional contact person). First of all, all local coordinators of the remaining ECIU member universities (non-case study universities) were contacted and phone conversations with four other ECIU local coordinators were hold. These conversations represented unstructured, open conversations about the ECIU network and the activities taking place within it. Also challenges of network cooperation, the ECIU's development over time and the responsibilities of an ECIU local coordinator were discussed. Then, all leaders of ECIU's eight working groups as well as the chairs of the two ECIU Steering Committees were contacted per E-Mail. The response rate was almost 100% and information was gained on the member institutions' activities in the respective groups. In addition to the leaders of the Steering Committees, all representatives of the case study universities in the Steering Committees (one per university and per committee) were contacted and information on their institution's activities within the respective committee was collected. The respondent rate was rather low (3 out of 8). Finally, a personal meeting with the ECIU Secretary General was hold which entailed a general discussion on the network and provided an opportunity for the researcher to clarify some more general questions on the ECIU. While the findings of this study still mainly rest on data collected during the interviews with the local coordinators, the additional conversations and decreased the risk of missing out on important information and provided background information which was very useful for the researcher to get a better overall understanding of the network and thus contributes to the validity of the findings.

4.2.2. Desk Research

The data collection process also involved the analysis of the institutions' and the ECIU's policy documents (such as mission statements, strategy plans, reports, policy documents, annual reports and leaflets). The analysis of the documents was not a complete technical analysis of discourses, but provided a source of additional information on the institutions' ECIU engagement, including its purpose, activities, evaluation and history. The aim behind the document analysis was to enhance the internal validity of the

research since they were expected to be useful to verify (some) statements of the interviews and to show whether the interpretations and concepts had mutual meanings between the interviewees and the researcher (Deiaco et al., 2009). While, the documents provided hardly any information on the institutions' engagement within the ECIU, they helped to build a fuller picture of the institutions' background characteristics and contextual circumstances (environment). Appendix 7 shows an overview of which documents were consulted per case study university.

Apart from the characteristics used for the sampling (size, type, staffing, reputation, budget and degree of internationalisation), certain indicators were used for the description of the case study universities. These included the institutions' external research income, co-publications with industrial partners, spin-offs and regional joint publications in relative terms. All case study universities take part in the international ranking U-Multirank which allowed collecting comparable information. Appendix 9 provides an overview of these key figures.

4.3. DELIMITATIONS OF THIS STUDY

Delimitations are boundaries set by the researcher to limit the scope of the study (Kuiper & Clippinger, 2013). Stating the delimitations will clarify and refine these boundaries. To begin with, this research does not intend to explain why certain higher education institutions have certain objectives towards their inter-university networks. Derived from the resource dependence theory, this thesis assumes that every institution has different objectives based on the institution's individual resource scarcities. This, however, was not tested in this study.

Then, this study only looks at the cases of five higher education institutions within one inter-university network. Thus, delimiting factors of this study also affect its generalisability (external validity) which refers to extending the conclusions on a cause-and-effect relationship to other individuals, settings, times, or institutions than those directly studied (Flick, 2014). The study used a small *n* which makes generalisations difficult from the outset. Theory was used to increase the external validity of this small *n* study. Also, the qualitative design enables others to understand similar situations and to apply the findings for expectations in subsequent research. However, a study which involved a higher number of cases would have allowed broader conclusions from which outcomes could have been generalised.

Also, the scope of the project is narrowed down by only looking at one inter-university network. It does not discuss types of inter-university cooperation which go beyond the definition of inter-university networks employed here, such as national and informal network or non-institutional networks (e.g., of individual academics, research units or libraries). Finally, the theoretical definition of the variables set boundaries to the scope of this study. The network objectives are, by definition, determined at the institutional level. Therefore, objectives of researcher, students or of other stakeholder of the institutions are not considered here.

These delimitations are important to keep in mind in order to avoid over-generalised conclusions. As suggested by Sensing (2011), any broad applications of the findings are tentative and will be made

cautiously. The study tries to facilitate analytical generalisations and case-to-case transfers by enabling others to understand similar situations and apply these findings in subsequent research. Certain measurements will allow extending the qualitative findings of the research. This is the revelation of the social context (distinct characteristics of cases presented), information on the informant selection process, the use of certain data collection strategies (multi-method), and the retrospective delineation of plausible or rival explanations for interpretations.

4.4. OPERATIONALISATION

The operationalisation of the variables is necessary in order to clarify the meaning of the variables and, hence, to analyse the expected relationship between the variables (Babbie, 2007). The operationalisation of the identified variables depends on the method of data collection. This study relies primarily on semi-structured interviews to collect descriptive data about the theoretically identified variables (Dey, 2005). Accordingly, in order to operationalise the research question, the variables were translated into interview questions. By designing the interview questions, it was tried to anticipate as best as possible how certain questions or strategies will work in practice. Therefore, the guideline for the interview obtained more focused, context specific and diverse questions than the broad and more general research question which determines what this study seeks to understand. The guideline also included the preparation of a variety of questions which all aim at the same phenomenon (Leech, 2002). The interview guideline is included in the appendix of this thesis (Appendix 10). In the following, the operationalisation of the two main variables of this study, network objectives and network activities, are developed.

4.4.1. Network Objectives

In this study, *Network objectives* are theoretically defined as specific results which a higher education institution aims to achieve through the engagement in an inter-university network. Network objectives are determined at the institutional level. According to the theoretical perspective employed, the network objectives are based on the institutions' perceived resource scarcities and determine the network activities. Network objectives can be various, including organisational, educational and research goals in areas such as internationalisation, capacity building, visibility or market share. Table 3 provides an overview of identified potential higher education institutions' objectives towards the engagement in inter-university networks. The list of objectives was derived from different literature on inter-university networks (e.g., Deiacio et al., 2009; Lang, 2002; Olds, 2009; Hénard et al., 2005; Beerkens, 2004; Beerkens & Wende, 2007; Kraatz, 1998; Chan, 2004) (see also Section 3.3. for a comprehensive outline of rationales behind inter-university networks).

Network objectives can be more or less specifically determined by the institution, however, they were inquired as detailed as possible in terms of the types of ongoing activities and planned activities, goals in quantitative terms, and impacts they were expected to have. This was done in two ways. First of all, available documents of the case study universities on their involvement in the ECIU were searched for statements regarding their network objectives. Key words like *goals, objectives, purpose, target, intention* and *aims*

as well as verbs like *strive for*, *hope for*, *aim at*, *expect*, *forecast*, *anticipate* and *estimate* were used as indicators for information on the network objectives. However, the data on the institutions' ECIU objectives distracted from the documents was extremely limited so that the analysis of the objectives is mainly based on the the second way of data collection, the semi-structured interviews.

Table 3: Possible network objectives of higher education institutions towards their inter-university network engagement

Network Objectives

Educational Objectives	Improved quality of education
	Increased outgoing student mobility
	Increased incoming student mobility
	Strengthened students' employability
	Broadened educational offering (curriculum building)
	Increased access to strategic information in the field of education
Research Objectives	Increased international joint research
	Increased access to international funding opportunities
	Increased international capacity of academics
	Advance research through synergies
	Increase research cooperation with industry / business
	Increased access to strategic information in the field of research & knowledge transfer
Organisational Objectives	Capacity building of administrative staff
	Exploit economies of scale
	Enhanced reputation & visibility of the university
	Strengthened voice on the political scene
	Increased access to strategic information in the field of organisational development
	Enhanced regional socio-economic environment of the university
	Improved organisation & management within the university

Oral statements on the network objectives were obtained through semi-structured interviews with the local coordinators of the case study universities. The interviews provided sufficient information to identify the institutions' objectives towards the ECIU. The institutions' network objectives used in the analysis, hence, represent the statements of the ECIU local coordinators and what they determine as their institutions' objectives towards the ECIU. The interviews offered the opportunity to gain deep knowledge and a clear understanding on the network objectives and to make sure that they are in line with the conceptualisation of the variable. In order to give an answer to the research question, it was critical to know about the details of the objectives so that the qualitative interpretation on the extent of the alignment could be done properly. Several questions on the same phenomena as well as on detailed specification of the objectives helped to reach this goal. The interviewees were asked for objectives

towards their ECIU engagement in open-ended questions. Examples of questions included the following (see Appendix 10 for a complete overview).

- What are the specific objectives of your institution towards its engagement in the ECIU?
- What exactly does your institution aim to achieve through objective XY?
- If your institution was not yet member of the ECIU, would it still join the ECIU today? Why?
- Are these objectives the official and formally decided objectives of your university for the ECIU network? How are they formalised (e.g., written down in strategic document)?
- Do you have the impression that the objectives are known among the university staff / academics?

4.4.2. Network Activities

Network activities are theoretically defined as the interaction of one higher education institution with one or multiple other network member institutions through the network structure, i.e. the activity was initiated or facilitated by the network structure. Following the assumptions of the resource dependence theory, activities are voluntary cooperative interactions which entail either an exchange of existing resources or the creation of new resources. The network activities are expected to depend on the network objectives.

A list of the major forms of cooperative activities in inter-university networks was retrieved from the literature and consolidated in Table 4 (e.g., Deiacio et al., 2009; Brown et al., 2007; Beerkens, 2004; Teather, 2004; Denman, 2002). Students and staff exchange belongs to the most common activities of inter-university networks according to Chan (2004) and Denman (2002). In addition, joint course delivery, research cooperation, joint bidding for research projects, curriculum development and benchmarking are common activities within inter-university networks (Lang, 2002; Tadaki & Tremewan, 2013). Denman (2002) highlights the importance of the dissemination and advancement of knowledge on an international level. Brown et al (2007) finds that almost all networks promote professional development through annual conferences, workshops, poster sessions, and faculty or staff visits, among others. It is expected that every member institution of an inter-university network uses the network in different ways.

Possible network activities are classified into three main areas: (i) research activities, (ii) educational activities and (iii) organisational activities. Educational activities aim at supporting the further development of the educational program, teaching methods and the quality of the learning experience. Examples include exchange best practices on curriculum development and student exchange. Research cooperation aims at performing (scientific) research with other higher education institutions, such as joint applications for research grants. Organisational cooperation includes political activities, activities which promote the further development of the institutional strategy or general institutional capacity building.

Like the network objectives, the network activities were also inquired in two ways. First, available documents of the case study universities and the ECIU were searched for references on activities which were collectively pursued by ECIU members in the past. A list of the network activities each case study

university participated in was compiled and used as background information for questions during the interview.

Table 4: Possible activities higher education institutions perform within inter-university networks

Network Activities

Educational Activities	Offer joint degree programmes
	Offer joint short term courses
	Offer joint online courses (MOOC's)
	Outgoing student mobility
	Incoming student mobility
	Participation in joint projects on teaching & learning
	Knowledge exchange in the field of education
Research Activities	Joint research grant applications
	Joint research projects
	Joint publications
	Joint doctoral programmes
	Knowledge exchange in the field of research & knowledge transfer
Organisational Activities	Political activities
	Administrative & academic staff development programmes
	Outgoing administrative & academic staff mobility
	Incoming administrative & academic staff mobility
	Knowledge exchange in the field of organisational development

Second, data on network activities was collected through the interviews with the local coordinators of the case study universities. While the local coordinators, just as in the case of the objectives, provided the main source for the case study universities' network activities, the information provided by the additional interviews also provided some valuable information. The semi-structured nature of the interviews allowed the researcher to scrutinise that only activities were included in the analysis which match the conceptualisation of the variable, i.e. activities which are either initiated or facilitated by the ECIU structure. The local coordinators were asked for activities performed within the ECIU in open-ended questions (see Appendix 10 for a complete overview). Examples include:

- In what kind of ECIU activities is your institution involved?
- Would your institution also have done these activities without the ECIU?
- Are there any ECIU related activities which you planned / tried to initiate but which were not realised?
- Do you have an overview of the ECIU activities performed by your institution?

4.4.3. Alignment

This study tests whether the case study institutions' network objectives and network activities are aligned with each other. It is examined to what extent the institutions' network objectives are pursued with the performed activities and the performed activities contribute to the network objectives. During the analysis of the alignment, it is distinguished between direct alignment (in the further course of the thesis designated “++”), indirect alignment (“+”) and no alignment (“-“) between the institutions' network activities and network objectives. The decision on direct, indirect or no alignment between an institution's network activity and network objective is based on qualitative interpretation.

Direct alignment (“++”) applies in the following cases. An institution's network activity is directly aligned if the activity directly contributes to an objective. An institution's network objective is directly aligned if there is an activity which directly serves this objective. This can only apply within the same field (e.g., educational activities with educational objectives). Examples of direct alignment between network objectives and activities include to increase students' international experience (objective) and outgoing student mobility (activity); capacity building (objective) and staff development programmes (activity); and increased access to international funding opportunities (objective) applying jointly for international research grants (activities).

The alignment of an institution's network activity is indirect (“+”) if the activity indirectly contributes to an objective. An institution's network objective is indirectly aligned if there is an activity which indirectly serves this objective. *Indirect* refers to a situation when the network activity does not directly lead to the objective but is assessed to make a legitimate contribution towards achieving the objective. Contrary to direct alignment, indirect alignment can be both within a field but also across different fields (e.g., educational activities with organisational objectives). For example, joint degree programmes (activity) can indirectly contribute to an institution's network objective of increased visibility and reputation. Other examples are particularly to be found in the field of learning, for instance, exchanging best practices on fund-raising (activity) and increased international research grants (objective).

No alignment (“-“) applies to network activities which do not serve directly or indirectly any of the institutions objectives, and to network objectives which not at all pursued through the institution's ECIU activities.

5. Analysis

The following chapter includes the description and the analysis of the data which was collected in order to answer the research questions of this study. The analysis mainly rests upon the data gained through the semi-structured interviews with the ECIU local coordinators. The chapter starts out with a short introduction to the five case study universities. Then, the findings of the study will be reported in a logical sequence, beginning with a systematic description of the case study universities' objectives towards their ECIU engagement followed by a comprehensive description of the case study universities' activities within the ECIU. In the final section of this chapter, the universities' ECIU objectives and ECIU activities will be consolidated and it will be analysed to what extent the two variables match. This will be first done for each case study university separately and then across the five cases.

5.1. RESEARCH SETTING: THE CASE STUDY UNIVERSITIES

The following section introduces briefly the five case study universities: the Autonomous University of Barcelona, Hamburg University of Technology, Dublin City University, the University of Stavanger and the University of Twente.

Autonomous University of Barcelona (Spain)

The Autonomous University of Barcelona (UAB) is one of ten universities in Cataluña. It was founded in 1968 and is today considered as one of the best young higher education institutions in Europe². Operating under the motto “Promoting knowledge, Encouraging Innovation”, the university has a strong emphasis on basic research and engineering, on social responsibility and the engagement with regional businesses and industry. This is confirmed by the fact that UAB has a relatively high amount of regional joint publications (UMR, 2015). The UAB is a relatively large university hosting around 40,000 students and employing around 2,640 academic staff (fte). The university offers almost 150 different master degree programmes of which one quarter are taught in English. The comprehensive university includes 57 departments and 44 research institutes and centres which cover all disciplines of knowledge.

Being part of international networks is one of the university's strategic objectives towards its internationalisation, which is confirmed by the fact that UAB part in seven international inter-university networks³. The University of Barcelona is a founding member of the ECIU.

Hamburg University of Technology (Germany)

Technical University of Hamburg was founded in 1978 in order to promote structural change in the Hamburg region by augmenting its scientific capacities and technological potential. The leading principle

² The university ranks 10 in the *2015 QS Top 50 Under 50 ranking*, and 29 in the *2015 100 under 50 THE Ranking*.

³ UAB is member of the Young European Research Universities Network (YERUN), the European University Association, Universitas, Vives Universities Network, ACUP, Alianza4Universidades and the World 100 Reputation Network.

of the university gives priority to research, innovation and interdisciplinary studies. Like the other ECIU universities, TUHH aims to work closely with regional industries and businesses. The relatively high number of co-publications with industrial partners and a vast quantity of privately raised research funds show the achievements of this strategy (UMR, 2015).

With around 1,150 employees (including 700 academic staff) educating around 7,000 students. Teaching is organised in six faculties, including mechanical engineering, electrical engineering, computer science and mathematics, process and chemical engineering, civil engineering, vocational subject education and management sciences and technology. The university offers 42 study programmes, including nine Master programmes taught in English. The university also has three Joint Master programmes. TUHH's technology and knowledge transfer structure is consolidated in the universities' company TUTech Innovation GmbH which offers services in topics such as start-ups and innovation funding, patenting and licensing.

TUHH is a founding member of the ECIU. The ECIU regained a great deal of importance within the institution in the last 5 years (ECIU Local Coordinator, 2016). With the appointment of a new president, it was decided to terminate their memberships in other inter-university networks and to increase TUHH's active engagement within the ECIU (ECIU Local Coordinator, TUHH, 2016). The ECIU is also presented as one of TUHH's partners on the home page of the university's website.

Dublin City University (Ireland)

Dublin City University (DCU) is a public, research-intensive university which admitted its first students in 1980. The university has over 12,000 students and delivers more than 200 programmes across its five faculties, including the Faculty of Humanities and Social Sciences, Science and Health and Engineering and Computing as well as the DCU Business School and the DCU Institute of Education. With a current incorporation project which involves the merging with three independent colleges a new Faculty of Education will be created and the university's student body is expected to increase by another 4,000 students.

DCU is regularly featured among the top young universities worldwide as ranked by the *THE Top 100 under 50* and the *QS Top 50 under 50*. Furthermore, the university has the reputation as Ireland's University of Enterprise (Brown et al., 2015). This is confirmed by its relatively high amount of external research income (UMR, 2015). The university reports strong links with academic, research, and industry partners with a focus on the translation of knowledge into societal benefits (ECIU, 2012). The university scores particularly strong when it comes to co-publications with industrial partners (UMR, 2015). With *Invent*, DCU owns its own Innovation and Enterprise Centre which facilitates cooperation with external companies and promotes innovation, knowledge transfer and the commercialisation of innovations.

As a native English speaking university, DCU has a high amount of foreign degree seeking as well as incoming exchange students. Also, DCU's number of international joint publications is relatively high. It is part of the 3U Partnership and has an intensive collaboration with the Arizona State University (ASU).

DCU joined the ECIU in 2011. The university does not feature any link to the ECIU on its home page neither is the ECIU listed in the website's menu under the rubric of partnerships.

University of Stavanger (Norway)

The University of Stavanger (UiS) is a Norwegian university founded in 2005. The university is organised into three faculties (Arts and Education, Social Sciences, Science and Technology), comprises 14 departments and two National Research Centres, as well as a museum of archaeology. The university also has a unit for lifelong learning. The UiS hosts roughly 10,000 students and employs over 1,200 academic and administrative staff (fte).

The UiS is the only university in the region and therefore claims to strongly impact regional innovation policy (ECIU, 2015). Many of its research activities are pursued in cooperation with its International Research Institute of Stavanger AS (IRIS), with other universities, research institutes or regional, national and international industries. The *Prekubator Technology Transfer Office* is the universities' tool for commercialisation of research. A flourishing partnership with the industry and companies is confirmed by the university's relatively high amount of co-publications with industrial partners. The *Stavanger Innovation Park* (Ipark) runs incubator activities and supports start-ups. However, the number of start-ups from the UiS is relatively low (UMR, 2015). The university works towards the introduction of innovation and entrepreneurship courses in all study programmes (University of Stavanger, 2013).

For the UiS, the ECIU has a very high importance on the top level management (ECIU Local Coordinator, University of Stavanger, 2016) as confirmed by its Erasmus Policy Statement, "our most important institutional network is the ECIU" (University of Stavanger, 2014). The admission to the network was "a milestone" for the university in terms of its "international recognition" (ECIU Local Coordinator, UiS, 2016).

University of Twente (The Netherlands)

The University of Twente (UT) was founded in 1961. The university already labelled itself as entrepreneurial at an early stage and quickly developed the reputation as proactive and innovative university in matters such as the transfer of technology (Vught, 1999). Today, the university educates more than 9,000 students and undertakes research within five faculties: Behavioural, Management and Social Sciences, Engineering Technology, Electrical Engineering, Mathematics and Computer Science, Geo-Information Science and Earth Observation and Science and Technology. Researchers at the UT mainly work within research institutes which focus on nanotechnology, ICT, biomedical technology and governance among other. The UT ranks 148 in the *THE World University Ranking* and 188 in the *QS World University Ranking*.

The interaction with businesses and industry is an important component of the university and with *Kennispark Twente* it features an innovation campus, business location and incubator which aims at the branding and the development of an entrepreneurial and business climate in the region, e.g., by supporting start-ups and providing training (The Technopolicy Network, 2014). The UT's efforts of being innovative

and entrepreneurial are reflected in its relatively high number of co-publications with industrial partners and high amount of spin-off companies (UMR, 2015). In 2015, the university was awarded “most entrepreneurial university in the Netherlands”.

Next to the ECIU, it is member of the national 3TU network and the European University Association. The UT has a strong historical and emotional connection with the ECIU. This can be traced back to the fact that the foundation of the ECIU was initiated and strongly influenced by the university’s then-rector. The university hosts the ECIU secretariat. Today, the university does not focus on the ECIU as their most important network but aims to join one or two new networks in the close future (University of Twente, 2015).

5.2. DATA DESCRIPTION

5.2.1. Institutions’ ECIU Objectives

The following section gives an answer to the second sub question of this research based on the five case studies. The question is: *What objectives do ECIU member institutions pursue specifically by engaging in the ECIU?* In line with the adopted definition of network objectives, this section will reveal the specific institutional results which the case study universities aim to achieve through the engagement in the ECIU.

None of the case study universities have formalised or officially codified objectives towards their ECIU membership. Nevertheless, the local coordinators were aware of their institutions’ objectives towards the ECIU and were able to frame these. Hence, the identified objectives are based on the statements of the ECIU local coordinators (see operationalisation of network objectives, Section 4.4.1.). The stated objectives were reportedly either based on the institutions’ general strategy or on their internationalisation strategy, as well as objectives which arose from discussions with the university leadership.

Since, according to the resource dependence theory, the institutions’ network objectives are based on their individual resource scarcities, the analysis of the network objectives also tells something about the institutions’ needs. The most commonly mentioned objective of the case study universities towards the ECIU was to gain increased access to strategic information in all fields, followed by a strengthened voice of the universities on a political scene. Other objectives included increased possibilities for outgoing student exchange, increased research cooperation, institutional reputation gain and enhanced institutional visibility. The Table 6 provides an overview of the identified objectives of the case study universities’ towards their engagement within the ECIU among the list of possible network objectives developed in the methodological part of this study. The case study universities’ objectives will be comprehensively described in the following starting out with the most common network objective.

Table 5: The case study universities' objectives towards the ECIU among a range of possible network objectives

ECIU Objectives		UAB	DCU	TUHH	UiS	UT
Educational Objectives	Improved quality of education					
	Increased outgoing student mobility				x	x
	Increased incoming student mobility					
	Strengthened students' employability					
	Broadened educational offering (curriculum building)					
	Increased access to strategic information in the field of education		x		x	x
Research Objectives	Increased international joint research		x		x	
	Increased access to international funding opportunities		x	x		
	Increased intl. capacity of academics				x	
	Advance research through synergies					
	Increase research cooperation with industry / business					
	Increased access to strategic information in the field of research & knowledge transfer	x			x	x
Organisational Objectives	Capacity building of administrative staff					
	Exploit economies of scale					
	Enhanced reputation & visibility of the university	x	x			
	Strengthened voice on the political scene	x		x		x
	Increased access to strategic information in the field of organisational development	x				
	Enhanced regional socio-economic environment of the university					
	Improved organisation & management within the university					

x = objective was (explicitly) mentioned by the case study institution as one of their ECIU objectives

Empty field = objective was not (explicitly) mentioned by the case study institution as one of their ECIU objectives

Increased access to strategic information

The most frequently mentioned objective of the case study universities towards their ECIU membership was to gain an enhanced access to strategic information and knowledge in the fields of education, research and organisational development. Four of the case study institutions mentioned the access to strategic information as an explicit goal towards the membership. These are the UAB (in research and technology transfer as well as in organisational development), DCU (in education), the UiS and the UT (both in education and in research and technology transfer). Through the ECIU membership they aim to learn from best practices employed by other member institutions, jointly tackle challenges and find solution, and to access benchmarks against which to measure their own practices.

There were several specific learning objectives mentioned by the respondents. First, DCU, the UiS and the UT reported to aim at an *enhanced access to strategic information in the field of education*, in particular to information which allows them to further adopt innovative methods in teaching and learning.⁴ This objective is based on the common understanding that the ECIU universities are all innovative universities and the partnership therefore promises attractive opportunities to learn from each other. The UT aims to learn about innovative, student-centred methods in teaching and learning. DCU intends to gain access to “tangible deliverables, such as a strategy for digital teaching and learning” (ECIU Local Coordinator, DCU, 2016) which would ideally include tested best practices against which the own performance and procedures could be benchmarked and, subsequently, improved. The UAB, the UT and the UiS expressed the wish to obtain *access to strategic information in the field of research and knowledge transfer*. With their membership in the ECIU, the UAB aims to gain access to knowledge and information regarding practices in research management and in the interaction with the social surrounding of the university. The UiS reports to aim at adopting more innovative methods which focus on entrepreneurship in their study programmes. UT’s learning objectives in the field of entrepreneurship are less explicit than their objectives in the field of teaching and learning. The Dutch institution reports to aim at “a general optimisation of our standing policies” (ECIU Local Coordinator, UT, 2016). Furthermore, UAB aims *access to strategic information in the field of organisational development*, i.e. opportunities to “discuss common challenges and work together to solve them regarding the internationalisation of the universities” (ECIU Local Coordinator, UAB, 2016).

Strengthened voice on a political scene

Another specific result which the case study institutions aim to achieve through their engagement in the ECIU was reported to be an enhanced visibility of the institutions vis-à-vis the European Union, more specifically the European Commission. This objective was mentioned by three of the five case study universities including the UAB, TUHH and the UT.

The universities agreed that the European Union’s influence on European higher education institutions is growing (see also chapter 3.3.) and that cooperation within the ECIU represents a way to significantly strengthen the members’ voices towards the European Commission. It was argued that by appearing in public as a European network of higher education institutions, their profile could be raised and their impact broadened much more easily and effectively than by acting alone. TUHH, for example, mentioned visibility in the European arena as one of their major goals behind their engagement within the ECIU. Referring to the small size of their institution, they expect that the joint appearance with other institutions of “more or less the same vision and profile” (ECIU Local Coordinator, TUHH, 2016) to be particularly beneficial for them as a small university and would increase their competitiveness for resources and students. The UT aims to “be heard and seen in Europe” (University of Twente, 2015) through the ECIU.

⁴ According to the University of Twente, innovative means “constantly challenging and rethinking the norms. That is innovative. You are never satisfied with the current state” (ECIU Local Coordinator, UT, 2016).

They agree that the fact that all ECIU member institutions are similar in that they are young, focused and innovative makes them to have “something to say and to influence the policy agenda” (ECIU Local Coordinator, UT, 2016).

Increased research cooperation

The ECIU Board, which consists of the rectors and presidents of the member institutions, wishes to encourage their researchers to work together on joint research projects, as stated on the ECIU’s website. Indeed, for three of the five case study universities increased research cooperation belongs to their main goal behind the ECIU membership. DCU mentions prominently, “what we would mainly like to see out of the network is research” (ECIU Local Coordinator, DCU, 2016). The Irish university hopes that the ECIU would encourage more international research cooperation and hence increase their chances on external research funding from EU research and innovation programmes (such as Horizon 2020). Thus, DCU aims at increased international joint research and access to international funding opportunities. TUHH also aims at accessing international research funding through ECIU. The UiS mentioned an increased pressure from their government to become more international which includes the promotion of international joint research. Since the university is convinced that staff with international competence is a decisive factor which encourages international joint research projects, the UiS aims at both enhancement of the international capacity of its academic staff and increased possibilities for joint research projects in general.

Increased outgoing student mobility

Another objective towards the ECIU reported by two institutions is an increase in their outgoing student mobility (in terms of volume). Through cooperation in the ECIU, the UT and the UiS aim at greater opportunities for their students to study abroad based on the conviction that international experience provides their students with important competencies. The UT aims to increase the number of undergraduate students studying abroad from currently 40% to 75% by 2020 (University of Twente, 2015). To achieve this substantial increase of student flows, the Dutch university hopes that the ECIU provides the university with partners who are interested in setting up a long-term relationship facilitating greater and a more structured mobility of students. The UiS reports to have a relatively high amount of international students studying at the UiS, however, to be “not good enough in sending our students abroad” (ECIU Local Coordinator, UiS, 2016). Therefore, also the Norwegian university puts a focus on outgoing mobility.

Enhanced reputation and visibility of the university

Another objective of DCU’s engagement in the ECIU is the anticipated gain in the institution’s reputation by being able to identify and present themselves as a part of a European network of innovative universities. The UAB hopes the ECIU membership to increase the institution’s international visibility and this way its position in international university rankings.

Conclusion

It was possible to find the following objectives of the case study universities towards their engagement in the European Consortium of Innovative Universities. The UAB aims at enhanced visibility, a strengthened voice on a political scene and at an increased access to knowledge on research management and internationalisation. DCU mainly hopes for more research cooperation and to increase its access to research funding and, furthermore, to raise its reputation and to access strategic knowledge in the field of education. The TUHH has two objectives towards the ECIU which include the access to research funding and a strengthened voice on a political scene. The UiS aims at increased outgoing student mobility and more international joint research projects while strengthening the international capacity of its academic staff. Moreover, the Norwegian university want to access strategic information regarding entrepreneurship in study programmes. The UT aims at an increase in outgoing student mobility, strategic knowledge acquisition in the field of teaching and learning as well as on entrepreneurship, and at strengthening their voice towards the EU.

5.2.2. Institutions' ECIU Activities

In the following chapter, the third sub question of this research will be answered. The question is: *What activities do ECIU member institutions specifically perform within the ECIU?* In the theoretical chapter of this thesis, network activities were defined. In line with this definition, this chapter will reveal interactions of each of the case study universities with one or multiple other ECIU member institutions through the network structure. Only activities which were initiated or facilitated by the network structure will be included. The identified activities are mainly based on the statements of the ECIU local coordinators and were (partly) verified through additional interviews (see operationalisation of network activities, Section 4.4.2.). This means, that activities which were not mentioned in these contexts are not included.

Activities performed by the case study universities in the ECIU are varied and cover a broad range of educational, research and organisational activities. Table 6 presents an overview of the activities which are performed by the case study universities within the ECIU among the list of possible network activities developed in the methodological part of this study. The list does not include the intensity/amount of the activities. In the following section, the activities of the case study universities within the ECIU will be systematically described starting out with activities in the field of education, followed by research activities and, lastly, activities in the field of organisational development.

Table 6: The case study universities' activities performed within the ECIU among a range of possible network activities

Activities		UAB	DCU	TUHH	UiS	UT
Educational Activities	Offer joint degree programmes	x		x		x
	Offer joint short term courses					
	Offer joint online courses (MOOC's)					
	Outgoing student mobility			x		
	Incoming student mobility					
	Participation in joint projects on teaching & learning	x			x	x
	Knowledge exchange in the field of education	x	x	x	x	x
Research Activities	Joint research grant applications					
	Joint research projects					
	Joint publications					
	Joint doctoral programmes					
	Knowledge exchange in the field of research & technology transfer	x	x	x	x	x
Organisational Activities	Political activities	x				x
	Administrative & academic staff development programmes	x	x	x	x	x
	Outgoing administrative & academic staff mobility					
	Incoming administrative & academic staff mobility	x				
	Knowledge exchange in the field of organisational development	x	x	x	x	x

x = activity was (explicitly) mentioned as one of the respective institution's ECIU activities

Empty field = activity was not (explicitly) mentioned as one of the respective institution's ECIU activities

ECIU activities in the field of education

The case study universities do not offer any joint short term or online courses (MOOC's), nor have incoming student mobility among their ECIU activities.

Joint programmes

The development and implementation of joint master programmes represent TUHH's main activity within the ECIU. All joint master programmes which are offered at the German university are in cooperation with ECIU partners. Also the institution's annual reports continuously present the ECIU network as a successful cooperation for the university thanks to the joint master programmes. Both, the UAB and the UT have developed and implemented each one joint master programme with ECIU partners. UAB assessed the existing joint master programme with ECIU partners as "an example of good practice of education collaboration between ECIU universities" (ECIU Local Coordinator, UAB, 2016). All three universities confirm that the joint programmes were developed thanks to the ECIU network.

DCU and the UiS do not have any joint programmes with ECIU partners. Attempts to develop joint programmes and to apply for ERASMUS funding were indicated by DCU, but due to resource constraints, these “hugely complicated and bureaucratic programmes” (ECIU Local Coordinator, DCU, 2016) never came to existence.

Student Exchange

All ECIU case study universities feature bilateral exchange agreements with other ECIU member institutions. The UAB and the UT have bilateral institutional agreements with all ECIU partners, TUHH and the UiS with most of the ECIU partners and DCU with only some of the ECIU partners. Also, all case study universities reported of ongoing student exchange activities within the ECIU. However, three universities (the UAB, the UiS and the UT) reported that the amount of students being exchanged with ECIU partners is not significantly higher than with other partner universities and that the amount of students exchanged would also be more or less the same even if the institutions were not member of the network. In these cases, the exchange of students was neither initiated nor facilitated by the ECIU and therefore cannot be counted as an ECIU activity. The universities, however, reported of attempts to further intensify student mobility with ECIU partners. The UiS, for example, explained that “if the international office is talking with the other division on increasing the student mobility, we always mention the ECIU and that they should look at those partners at the beginning before they look at other partners” (ECIU Local Coordinator, UiS, 2016). An important activity in this regard, is the development of student exchange packages (see *educational joint projects* below).

TUHH’s student exchange with ECIU partners is the only that can be assessed as ECIU activity. Thanks to its ECIU membership, TUHH sends more students to ECIU universities than it would be possible if the university was not member of the network. While TUHH’s students’ demand for exchange opportunities with ECIU partners does not depend on the network⁵, the supply is facilitated by the network structure. Therefore, outgoing student mobility is counted as one of TUHH’s ECIU activities.

DCU represents a special case. Because it is a native English speaking university, it features a natural high attractiveness for incoming exchange students. Although interested in increasing their outgoing mobility, the university rejects any participation in activities which would encourage exchange because “then what happens is, all the students come in and none of our students will leave” (ECIU Local Coordinator, DCU, 2016).

Educational joint projects

Both the AUB and the UT give account of numerous discussions on how to increase and simplify student exchange between ECIU member institutions, including the idea to attract students with elevated

⁵ There is elevated demand of Hamburg University of Technology students to study at universities which are located in Scandinavian countries.

scholarships and to offer them some kind of special treatment or VIP packages. Currently, the universities work on the development of so called *exchange packages*, which are preset study programmes offered by ECIU institutions. Comparable with a minor abroad, the exchange packages include the preapproval of courses, credit recognition and learning agreements. Such a more structured approach to student exchange will increase the volume of exchange between ECIU members in terms of student numbers while decreasing the administrative and organisational burden related to the organisation of exchange activities for students as well as for the institutions. From the case study universities, there are currently three universities participating in the project, including the UT, the UiS and the UAB.

Knowledge exchange in the field of education

The sharing of knowledge and good practices in the field of education mainly takes place within the Steering Committee on Innovation in Teaching and Learning (SCTL). The committee aims to study and analyse the best practices of each ECIU member in innovative teaching and learning which foster social entrepreneurship and the smart use of technology in order to develop quality practices and attain high standards in teaching and learning. All case study universities reported to have a representative participating in the SCTL's meetings which take place two times every year. Since the Steering Committee is a relatively new entity within the ECIU, the activities performed within it are still fairly limited.

The Steering Committee is chaired by DCU. The university uses its chair of the SCTL to initiate a project which includes the collection of the ECIU institutions' best practice on teaching and learning strategies and to compile them in a single document. The ECIU universities can then examine, analyse and exploit the document in their individual interests. The UiS has reported to give high priority to its participation in the SCTL and shows that by having their Vice Rector participate in the committee. The UT participates in the SCTL with their head of Technology Enhanced Learning and Teaching, the TUHH with the CEO of its Centre for Education and Learning and the UAB with a representative of its Education Science Institute.

Beyond the SCTL, the UT and TUHH reported that they have already accessed good practices and have explicitly learned from ECIU partners regarding innovative learning methods in the past. For example, the UT which has recently introduced project-based learning in its undergraduate programs has reported to have used the experiences of ECIU partners to develop this approach.

ECIU activities in the field of research

The ECIU universities define themselves as research-intensive universities committed to the encouragement of high quality research (ECIU, 2012). On its website, the network states that they have been very successful in getting European funding for research and innovation projects. This might be true for single member universities alone or in collaboration with other (non-ECIU) partners; however, the respondents reported that there is no significant research collaboration (in terms of joint research grant application, joint research projects, joint publications or joint doctoral programmes) between ECIU members which was initiated or facilitated by the ECIU. Research projects which run between ECIU

partners were initiated because the researchers involved knew each other regardless of the network. Furthermore, the respondents agreed that even if there was research collaboration they do not know of, it would be very little.

The respondents reported some minor attempts to encourage research cooperation within the ECIU. The local coordinators of TUHH, DCU, the UiS and the UAB reported to use every opportunity to inform researchers at their institutions about the ECIU partners and their research expertise. They try to actively encourage researchers to cooperate with ECIU partners, as DCU explains, “I try to inform people because my role lives right across the entire universities, I have links in all faculties and units so I can go talk to them and say, do you know that there is somebody over there from Twente who is doing something like this, you should talk to them at some stage” (ECIU Local Coordinator, DCU, 2016). However, they also admit that this is much on an ad hoc basis. DCU, furthermore, is working on a standard text which is supposed to be included in all research grant applications of the institution in order to identify DCU as member of the ECIU and the advantages this bring. The UiS is working with their PR department in order to find a way to increase researchers’ knowledge about the ECIU by integrating information about the ECIU partners and their innovative activities more prominently on their internal website. The UT is the only case study university which stated that there are no efforts being made to actively encourage research cooperation with the ECIU partners. Since the internal attempts of TUHH, DCU, the UiS and the UAB to encourage research cooperation with ECIU partners do not represent activities which were initiated or facilitated by the ECIU structure, they are not counted as ECIU activities.

Knowledge exchange in the field of research and technology transfer

The sharing of knowledge and good practices in the field of research and technology transfer is consolidated in the Steering Committee on Entrepreneurship and Societal Impact of Research (SC ESIR). The Committee aims to share best practices on the interaction with institutions’ surroundings and entrepreneurship. It was reported that the committee conducted several surveys among the member institutions to this end. Furthermore, the committee aims to identify innovative research funding mechanisms and distributes calls from Horizon2020 which could be interesting for ECIU researchers. All case study universities reported to participate in the SC ESIR’s meetings which take place twice a year. The committee is chaired by the UiS. TUHH has a representative of their Center of Entrepreneurship and the UAB the Strategic Development Manager of their Research Manager Office participating in the meetings. The UT and DCU do not have members of their institutions, but of the affiliated science parks (UT’s Kennispark Twente) and incubators (DCU’s enterprise and incubation unit Invent) joining the SC ESRI. DCU reported to use the SC ESRI to identify innovative funding mechanisms for early stage research. Thanks to their participation in the SC ESRI, UiS reported to have implemented a student-business interaction platform called *Demola*. The UT reports to soon launch a pilot phase of *Demola*. The implementation of DEMOLA is attributable to the ECIU, as the UiS states, “what we do in a lot of meetings and workshops is sharing competencies. So we have learned from the other partners about the *Demola* which we can use for the education of the students” (ECIU Local Coordinator, UiS, 2016).

Furthermore, all ECIU member universities have their (EU) grants advisors participate in the peer-learning activities of ECIU's EU Working Group which focuses on topics such as ways to support researchers in applying for EU research grants. Therefore, the activity of joining the EU working group is not only classified as political activity (see below) but also as exchange of knowledge and good practices in the field of research and technology transfer.

ECIU activities in the field of organisational development

Political Activities

The political activities within the ECIU are mainly pooled in the EU working group. There are two main types of activities pursued by the EU working group. On the one hand, the group pools the member institution's (EU) grant advisors for joint learning activities. This activity, however, falls within the category of research cooperation (see above). On the other hand, the group presents the ECIU members' interests in EU policy dossiers and represents the ECIU members vis-à-vis European authorities. The EU working group has published a solid amount of position papers and joint consortium responses on topics such as European research and innovation funding, Open Education and the Innovation Union. While all universities are represented in the EU working group, the driving force behind the group's activities is the UT. This was confirmed by all respondents. The group is led by the UT and the university regularly represents the ECIU universities in discussions with the European Commission in Brussels.

The remaining case study universities reported a low engagement in the EU working group and in ECIU-related political activities in general. UiS mentions that, "one of the goals of the ECIU is to have a strong impact on the EU Commission, but we are not very active there. I think the University of Twente is more active there" (ECIU Local Coordinator, UiS, 2016). DCU reports that its participation in the EU working group is "probably much more on an operational level than getting academic input from how the policy documents would look like" (ECIU Local Coordinator, UiS, 2016). The UAB finds that by being member of the ECIU, the university is "involved in the decisions in Brussels" (ECIU Local Coordinator, UAB, 2016). However, they reportedly do not engage in ECIU activities in the policy field themselves. Therefore, although the UAB, DCU, TUHH and the UiS officially participate in the EU working group, their engagement is not significant and therefore is not counted as ECIU activity. Yet, it should be noted that UAB's Vice Rector recently became ECIU president and therefore needs to necessarily adopt a representative position within the ECIU. UAB assesses the ECIU presidency as an activity which implies more responsibility of UAB within the ECIU, also in a political manner, and therefore the ECIU presidency is counted as a political activity of UAB within the ECIU.

Staff development

All ECIU member institutions are actively using the ECIU network for staff development. All case study universities reported to have members participating in the ECIU's Leadership Development Programme (LDP). Since 2007, the programme addresses annually a range of two or three leaders and future-leaders (academics and administrative staff) from each ECIU member to be trained at three different ECIU

universities. The goal of the programmes is to let participants get an inside look in different ECIU member institutions, to discuss the challenges of leadership and strategic management and to develop personal leadership qualities and skills. Furthermore, there are also benefits for the institutions hosting the programme. The UAB, for example, reported that hosting the LDP allowed them to ask the participants to work on a topic of strategic importance to UAB.

Furthermore, the ECIU offers a *Masterclass for Excellent Education* which represents an annual workshop targeted at outstanding academics from the ECIU universities. Hosted at a different ECIU university every year, the seminar aims to provide participants with input on innovative teaching methods as well as providing a platform to discuss their own experiences with such. Since the seminar focuses on improving the personal competences of the participants, it is considered as a staff development activity in the field of organisational development and not in the field of education. Academic staff of the UiS and of the UAB have attended the Masterclass as well as staff of the UT, which initiated the programme. TUHH and DCU have not yet participated in the ECIU Masterclass. However, DCU will host the next Masterclass on 'Digital Teaching and learning Environments' and will thus send participants for the first time.

ECIU's Tech Trans Legal working group is a platform for knowledge exchange between legal officers of the university. In regular meetings, the legal officers meet and give each other advice on how to solve various challenges they face at their institutions. The group meets twice a year since 2009 which can be taken as a sign that the group is assessed to be useful. While DCU, the UAB, the UiS and the UT actively participate, TUHH is not represented in the group.

Staff mobility

There is some, but no vast staff mobility between the ECIU partners. Both academic and administrative staff from the UAB, TUHH, the UiS and the UT have moved to ECIU partners. However, as with student exchange, the amount of staff exchange between ECIU universities is not higher than with non-ECIU universities and also the existing staff mobility between EICU universities cannot be attributed to the network structure. UAB, UiS and TUHH reported that they try to further encourage staff mobility within the ECIU. However, their efforts did not yet resulted in a change of the mobility structures. DCU did not participate in any staff exchange within the ECIU. Hence, staff mobility does not represent an ECIU activity for the case study universities. A small exception concerns UAB's incoming staff mobility. The Spanish university explains to give priority to applicants from ECIU universities, "we have many applications and we cannot accept anyone but if they come from an ECIU university, we always accept them" (ECIU Local Coordinator, UAB, 2016). As a consequence, the UAB does perform (incoming) staff mobility which is related to the ECIU structures and therefore is counted as ECIU activity.

Knowledge exchange in the field of organisational development

Next to the EU and Tech Trans Legal working group, the case study universities participate in three ECIU working groups which focus on the field of organisational development. These include the working groups on Career Guidance Services, Sustainable Campus and Socially Committed Universities. The

working groups include network meetings where experts in the concerned fields get together and discuss particular challenges, transfer knowledge and jointly try to find solutions. The working group on Socially Committed Universities, which aims to create a platform for exchanging experiences and training in the area of social action, is led by the University of Barcelona and joined by the UiS. Established in 2012, the Sustainable Campus working group developed a set of minimum requirements and indicators for sustainable campuses which were consolidated within a charter signed by all ECIU member institutions. The group, which includes representatives of all member institutions, now works towards the achievement of these standards. Furthermore, TUHH and the UT participate in the Career Guidance Services group which facilitates the exchange of knowledge and experiences between staff members of the institutions' career offices.

Conclusion

The findings show that there are multiple and diverse activities between ECIU member institutions facilitated or initiated by the ECIU structure. The ECIU activities of the case study universities focus mainly on the area of sharing best practices and exchanging knowledge in all fields (education, research and organisational development) and on staff development programmes (academic and administrative staff). There are some joint projects in the field of education which have resulted in joint master programmes and joint educational projects. There is no significant research cooperation within the ECIU.

5.3. DATA ANALYSIS: ALIGNMENT BETWEEN OBJECTIVES AND ACTIVITIES

After having identified the case study universities' ECIU objectives and activities from the data collected, the following section contrasts the two variables in order to deduct a conclusion on the extent of their alignment. The findings on the alignment of the variables will first be presented as individual case studies and subsequently consolidated in two cross-cases analyses suggesting generalisations about the extent of alignment between the ECIU objectives and the ECIU activities across the institutions.

5.3.1. Individual Case Study Analyses

Every individual case study analysis will start out with a tabular overview which matches the respective institution's ECIU objectives and activities and indicates the evaluated extent of alignment between each set of variables. As explained in the methodological part of this thesis (Section 4.4.3.), the extent of alignment will be indicated by the following symbols:

“++” refers to a direct alignment between an institution's ECIU objective and activity,

“+” indicates an indirect alignment respectively and

empty fields indicate ECIU objectives and activities which are not at all in line with each other (an activity without an aligned objective or an objective without an aligned activity).

The synoptical tables are each being followed by a brief but concise explanatory note exposing the line of reasoning behind the evaluation of the alignments.

Autonomous University of Barcelona

The following table (Table 7) illustrates the extent of alignment between each of UAB's objectives towards the ECIU and each activity performed by the institutions within the ECIU.

Table 7: Extent of alignment between UAB's objectives towards the ECIU and activities within the ECIU.

		UAB's ECIU Objectives			
		Res.	Org.		
		Increased access to strategic information in the field of research & technology transfer	Enhanced reputation & visibility of the university	Strengthened voice on the political scene	Increased access to strategic information in the field of organisational development
UAB's ECIU Activities	Edu.	Offer joint degree programmes		+	
		Participation in joint projects on teaching & learning			+
		Knowledge exchange in the field of education			
	Res.	Knowledge exchange in the field of research & knowledge transfer	++		
	Org.	Political activities		++	
		Administrative & academic staff development programmes			
		Incoming administrative & academic staff mobility			
		Knowledge exchange in the field of organisational development			+
++ direct alignment		+ indirect alignment		empty field: no alignment	

UAB's objectives towards the ECIU focus on enhancing the institutions reputation and to strengthen its voice on a political scene. In addition, the university targets the ECIU partners' expertise and experiences in internationalisation and in research management. As shown in Table 7, UAB's activities within the ECIU are to different extents aligned with these objectives.

Direct alignment (++)

There are two activities which can be considered to be directly aligned with UAB's objectives towards the ECIU. These include knowledge exchange in the field of research and technology transfer (UAB's participation in the SC ESRI and in the EU working group) which is directly aligned with UAB's objective to access strategic knowledge in research management through the ECIU. Furthermore, providing the ECIU speaker is a political activity which is directly aligned with UAB's objective of enhanced institutional

visibility. As ECIU speaker, UAB's Vice Rector has an active role within the network and actively uses the ECIU to promote the UAB.

Indirect alignment (+)

There are three activities which are assessed to indirectly contribute to UAB's ECIU objectives. In the field of education, the university offers a joint degree programme with ECIU partners and participates in the development of student exchange packages (participation in joint projects on teaching & learning). Joint degree programmes indirectly contribute to their objective of increased reputation and the joint educational project to their objective of knowledge exchange in the field of internationalisation. The UAB performs two activities on strategic knowledge exchange in the field of organisational development. On the one hand, UAB uses the ECIU partners as information source on issues related to internationalisation of the institution. This activity is directly aligned with their objective to access strategic information on internationalisation. On the other hand, they participate in different working groups which are not at all aligned with any of UAB's objectives. Since there is one activity which is directly aligned and one activity which is indirectly aligned, the activity *strategic knowledge exchange in the field of organisational development* is overall assessed to be indirectly aligned with UAB's objectives towards the ECIU.

No alignment

There are three ECIU activities performed by the UAB which are not aligned with any of the institution's objectives towards their ECIU engagement. These include the institution's participating in knowledge exchange activities in the field of education and staff development programmes, as well as their staff exchange activities.

This implies the following regarding the alignment of UAB's network activities with their network objectives. UAB's activities in the ECIU are very broad and to some extent aligned with their objectives. Two out of the eight activities which the UAB performs within the ECIU can be considered to be directly aligned with UAB's objective towards the ECIU. These are *knowledge exchange in the field of research and technology transfer* (participation in the SC ESRI and the Tech Trans Legal working group) as well as *political activities* (ECIU presidency). Three other activities are indirectly aligned with UAB's ECIU objective while the remaining three activities are not at all aligned with UAB's objectives towards the ECIU. Looking at the objectives, however, all four objectives are either directly (*increased access to strategic information in research and strengthened voice on the political scene*) or in an indirect way (*enhanced reputation & visibility* and *increased access to strategic information of organisational development*) pursued.

Dublin City University

The following table (Table 8) contrasts each of DCU's objectives towards the ECIU with each of the institution's activities within the ECIU, and illustrates to what extent the two variables match with each other.

Table 8: Extent of alignment between DCU's objectives towards the ECIU and activities within the ECIU.

			DCU's ECIU Objectives			
			Edu.	Res.		Org.
			Increased access to strategic information in the field of education	Increased international joint research	Increased access to international funding opportunities	Enhanced reputation & visibility of the university
DCU's ECIU Activities	Edu.	Knowledge exchange in the field of education	++			
	Res.	Knowledge exchange in the field of research & technology transfer			+	
	Org.	Administrative & academic staff development programmes				
		Knowledge exchange in the field of organisational development				
++ direct alignment			+ indirect alignment		empty field: no alignment	

Through its membership in the ECIU, DCU mainly hopes to increase international joint research and their access to external research funding. Furthermore, the Irish university aims to increase its institutional reputation and to access strategic knowledge in the field of education. DCU's activities within the ECIU show a limited extent of alignment with these objectives.

Direct alignment (++)

The university reports one directly aligned activity which is its engagement in the Steering Committee on Innovation in Teaching and Learning (knowledge exchange in the field of education). This activity directly serves the institution's objective to access strategic information on innovative educational practices.

Indirect alignment (+)

There is one activity performed by the DCU in the ECIU which indirectly contributes its ECIU objectives. Knowledge exchange in the field of research and technology transfer provides the institution with learning opportunities on issues related to research cooperation and to international research grant applications, among others. Therefore, DCU's activity on knowledge exchange in the field of research and technology transfer is recognised to be indirectly aligned with DCU's goal to attract research funding.

No alignment

Half of DCU's ECIU activities are not at all aligned with their ECIU objectives. DCU's participation in ECIU's staff development programmes (LDP and Tech Trans Legal working group) and their activities of

knowledge exchange in the field of organisational development do not contribute to any of its objectives towards the ECIU.

On the whole, the alignment between DCU's network objectives and activities is rather mediocre. The universities ECIU engagement focuses on knowledge acquisition and two out of four activities contribute directly or indirectly to the institution's ECIU objectives. The remaining two activities are not at all geared towards DCU's ECIU objectives. Half of DCU's ECIU objectives are actively pursued through their engagement.

Hamburg University of Technology

Table 9 illustrates TUHH's activities within the ECIU and contrasts these with each of its objectives towards the ECIU in order to show the alignment between the two variables.

Table 9: Extent of alignment between TUHH's objectives towards the ECIU and activities within the ECIU.

		TUHH's ECIU Objectives	
		Res.	Org.
		Increased access to international funding opportunities	Strengthened voice on the political scene
TUHH's ECIU Activities	Edu.	Offer joint degree programmes	
		Outgoing student mobility	
		Knowledge exchange in the field of education	
	Res.	Knowledge exchange in the field of research & technology transfer	+
	Org.	Administrative & academic staff development programmes	
		Knowledge exchange in the field of organisational development	

++ direct alignment + indirect alignment **empty field:** no alignment

The TUHH mainly engages in the ECIU in order to access external research funding and to strengthen their voice on a political scene. TUHH's activities within the ECIU show indirect or no alignment with these objectives (see Table 9 for an overview).

Indirect alignment (+)

While there is no activity which is directly aligned with TUHH's ECIU objectives, one activity which TUHH performs within the ECIU contributes indirectly to the institution's ECIU objectives. Just as in the case of DCU, TUHH's participation in the SC ESRI can be considered as indirectly in line with the institution's objective of increased access to international research funding.

No alignment

Five out of the six activities which TUHH performs within the ECIU do not contribute to the institution's ECIU objectives. TUHH's main activity within the ECIU represents the offer of joint master programmes. Furthermore, the university engages in intensified student exchange with ECIU partners and participates in the SCTL. However, these activities in the field of education, as well as TUHH's participation in the working groups on Sustainable Campus and Career Guidance Service (*knowledge exchange in organisational development*) do not contribute to their objective of increased external research funding nor provide the university with an enhanced political visibility.

In brief, TUHH's activities within the ECIU are numerous and heterogeneous, however, besides one exception, they are not at all in line with the institution's objectives towards the ECIU. The TUHH mainly engages in the ECIU in order to access external research funding and to strengthen their voice on a political scene. Yet, their active engagement in the network is focused on the extension of their international study programs and exchange programmes, as well as on the acquisition of additional expertise in innovative learning methods.

University of Stavanger

In Table 10, UiS' activities within the ECIU are confronted with each of their objectives towards the network providing an overview of the alignment between the two variables.

Through a membership in the ECIU, the UiS hopes to increase outgoing student mobility, the amount of international joint research projects and to enhance the international capacity of its academic staff. Furthermore, the university aims at strategic information on innovative teaching methods and on ways to emphasise entrepreneurship in their study programmes. The activities which the UiS performs within the ECIU are relatively well aligned with their objectives (see Table 10 for an overview):

Direct alignment (++)

Three of UiS' activities within the ECIU contribute directly to the institution's objectives towards the network. The UiS' participation in joint projects on teaching and learning is directly aligned with their goal to increase student's outgoing mobility. Moreover, the university is involved in knowledge exchange activities in the field of education and of research and technology transfer which directly serve the institutions' ECIU objectives of gaining information on innovative teaching methods and on entrepreneurship respectively.

Table 10: Extent of alignment between UiS' objectives towards and activities within the ECIU.

		UiS' ECIU Objectives				
		Edu.		Res.		
		Increased outgoing student mobility	Increased access to strategic information in the field of education	Increased international joint research	Increased access to strategic information in the field of research & technology transfer	Increased intl. capacity of academics
UiS' ECIU Activities	Edu.					
	Participation in joint projects on teaching & learning	++				
	Knowledge exchange in the field of education		++			
	Res.					
	Knowledge exchange in the field of research & technology transfer				++	
Org.	Administrative & academic staff development programmes					+
	Knowledge exchange in the field of organisational development					

++ direct alignment + indirect alignment **empty field:** no alignment

Indirect alignment (+)

The UiS' participates in different staff development programmes of which some are directly and some are not at all aligned with their objectives towards the ECIU. The participation in the ECIU Masterclass (academic staff development) is directly aligned with the university's objective of strengthening the international capacity of its academic staff. At the same time, their participation in two other staff development programmes, the LDP and the Tech Trans Legal working group (administrative staff development), are not at all aligned with their objectives. Put together, their staff development activities are overall classified as being indirectly aligned with the institution's objectives towards the ECIU.

No alignment

The UiS' active engagement in the field of knowledge exchange in organisational development is not in line with any of the institution's objectives towards their ECIU engagement.

Relative to the other case study universities, the analysis of the UiS shows an above-average alignment of the institution's ECIU activities with its ECIU objectives, especially thanks to its activities in the field of education. Four out of six activities are directly aligned with their objectives. There is only one objective, increase joint research cooperation, which is not at all pursued by the UiS.

University of Twente

The following table (Table 11) contrasts each of UT's activities within the ECIU with their objectives towards the network and provides, hence, an overview of the alignment between the two variables.

Table 11: Extent of alignment between UT's objectives towards the ECIU and activities within the ECIU.

		UT's ECIU Objectives			
		Edu.		Res.	Org.
		Increased outgoing student mobility	Increased access to strategic information in the field of education	Increased access to strategic information in the field of research & technology transfer	Strengthened voice on the political scene
UT's ECIU Activities	Edu.	Offer joint degree programmes	++		
		Participation in joint projects on teaching & learning	++		
		Knowledge exchange in the field of education		++	
	Res.	Knowledge exchange in the field of research & technology transfer		++	
	Org.	Political activities			++
		Administrative & academic staff development programmes			
		Knowledge exchange in the field of organisational development			

++ direct alignment + indirect alignment empty field: no alignment

Through the membership in the ECIU, the UT aims at increased outgoing student mobility, the acquisition of strategic knowledge on learning practices as well as entrepreneurship, and at a strengthened voice towards the EU. The activities which the UT performs within the ECIU are relatively well aligned with their objectives.

Direct alignment (++)

Five out of seven activities performed by the UT within the ECIU are directly aligned with one their objectives towards the network. The UT's joint master programme as well as their engagement in educational joint projects are directly aligned with their goal of elevated outgoing student mobility. The UT accesses best practices in the field of teaching and learning and regarding entrepreneurship and technology transfer in the context of the Steering Committees and beyond. These activities (knowledge exchange in the field of education as well as research & technology transfer respectively) directly

contribute to UT's ECIU objective of gaining expertise in innovative learning practices and entrepreneurship. Also, the UT intensively performs political activities within the ECIU which are directly aligned with their ECIU objective of strengthening their voice on a political scene.

No alignment

UT's participation in staff development programmes is not aligned with any of the institution's ECIU objectives. The same counts for their activity on knowledge exchange in organisational development.

All objectives of the UT towards the ECIU are directly pursued with the active engagement of the institution within the network. Moreover, the Dutch university performs two activities which are not at all aligned with its ECIU objectives.

5.3.2. Cross Case Analysis

The following section will unite the findings of the individual case studies in two cross case analyses. First, the alignment of the institutions' ECIU activities with their ECIU objectives, then the alignment of the institutions' ECIU objectives with their ECIU activities will be outlined. It is critical to assess the alignment between the variables in both directions since it is possible that the institution's have objectives without aligned activities as well as that they have activities without aligned objectives.

Alignment of ECIU activities with ECIU objectives

Table 12 provides an overview of the results indicating the extent to which each ECIU activity is aligned and match with the performing institution's ECIU objectives. This gives indication on whether the way the case study universities use the network contribute to their objectives. To give an example, the tables shows that joint degree programmes is an ECIU activity pursued by the UAB, TUHH and UT. It further indicates that this activity is indirectly aligned ("+") with UAB's ECIU objectives, not aligned ("-") with TUHH's ECIU objectives and directly aligned ("++") with UT's objectives.

Table 12 shows that there is a lot of diversity to what extent the activities match the institutions' objectives. While the only activity performed in the field of research contributes to all performing institutions' objectives, the numerous activities in the field of organisational development show very low alignment with the institution's objectives (besides their political activities within the ECIU which show a high alignment with their objectives). This means that the institutions use the ECIU for the development of their organisation although they do not explicitly aim for this.

If the findings on the single institutions' ECIU activities are consolidated, the following conclusion can be drawn (see Table 13 for an overview). Relative to the total amount of the institutions' activities within the ECIU, one third of the activities (36,6%) directly contribute to the institutions' ECIU objectives. Furthermore, almost half of the activities (43,4%) are not goal oriented. They do not at all serve any of the institutional objectives towards the network engagement. The remaining 20% indirectly serve the institutions' ECIU objectives.

Table 12: Case study universities' activities within the ECIU and their alignment with their ECIU objectives

Alignment of Institutions' ECIU Activities with their ECIU Objectives (per Activity)		UAB	DCU	TUHH	UiS	UT
Edu.	Offer joint degree programmes	+		-		++
	Outgoing student mobility			-		
	Participation in joint projects on teaching & learning	+			++	++
	Knowledge exchange in the field of education	-	++	-	++	++
Res.	Knowledge exchange in the field of research & technology transfer	++	+	+	++	++
Org.	Political activities	++				++
	Administrative & academic staff development programmes	-	-	-	+	-
	Incoming administrative & academic staff mobility	-				
	Knowledge exchange in the field of organisational development	+	-	-	-	-

++ direct alignment with the institution's ECIU objectives

+ indirect alignment with the institution's ECIU objectives

- no alignment with the institution's ECIU objectives

Empty field: the respective activity is not performed by the institution

Table 13 shows clearly that the UiS' and the UT's ECIU activities feature most alignment. More than 70% of the UT's activities within the ECIU directly contribute to their objectives towards the networks, and 60% of the UiS' activities respectively. TUHH reports the lowest alignment. None of their ECIU activities directly contribute to their ECIU objectives. Besides one activity which is indirectly aligned with the German university's ECIU objectives, all activities performed by TUHH within the ECIU (84%) do not serve any of the institutions' ECIU objectives. The alignments of UAB's and DCU's ECIU activities show a similar pattern. One quarter of both universities' activities within the ECIU directly match their individual objectives towards the network, another quarter of DCU's activities and more than a third of UAB's activities are indirectly aligned. This means, however, that still 50% of DCU's activities within the ECIU do not serve any of their network objectives.

Table 13: The alignment of the case study universities' ECIU activities with their ECIU objectives in absolute numbers and in percentages relative to the institutions' total number of activities (total number/relative percentage)

Alignment of ECIU Activities with Objectives	UAB	DCU	TUHH	UiS	UT	Total
Direct alignment (++)	2/ 25%	1/ 25%	0/ 0%	3/ 60%	5/ 71%	11/ 36,6%
Indirect alignment (+)	3/ 37,5%	1/ 25%	1/ 16%	1/ 20%	0/ 0%	6/ 20%
No alignment (-)	3/ 37,5%	2/ 50%	5/ 84%	1/ 20%	2/ 29%	13/ 43,4%
	8/ 100%	4/ 100%	6/ 100%	5/ 100%	7/ 100%	30/ 100%

Alignment of ECIU objectives with ECIU activities

Table 14 provides an overview of the case study universities' objectives and the extent to which they are aligned with their ECIU activities. Again, there is great variety to which extent the case study universities' ECIU objectives are pursued by the institutions' actual engagement in the network. In the field of education, all institutions' objectives are directly pursued with the activities the institutions perform within the ECIU. In the field of research and organisational development Table 14 indicates objectives which are directly, indirectly and not at all aligned with the respective institution's ECIU activities.

Table 14: Case study universities' objectives within the ECIU and their alignment with their ECIU activities

Alignment of Institutions' ECIU Objectives with their ECIU Activities (per Objective)		UAB	DCU	TUHH	UiS	UT
Edu.	Increased outgoing student mobility				++	++
	Increased access to strategic information in the field of education		++		++	++
Res.	Increased international joint research		-		-	
	Increased access to international funding opportunities		+	+		
	Increased intl. capacity of academics				+	
	Increased access to strategic information in the field of research & technology transfer	++			++	++
Org.	Enhanced reputation & visibility of the university	+	-			
	Strengthened voice on the political scene	++		-		++
	Increased access to strategic information in the field of organisational development	+				

++ direct alignment with the institution's ECIU activities

+ indirect alignment with the institution's ECIU activities

- no alignment with the institution's ECIU activities

Empty field: the respective objective is not an ECIU objective of the respective institution'

Consolidating the findings on the single institutions' ECIU objectives, the following conclusion can be drawn (see Table 15 for an overview). More than half of the case study universities' objectives towards the ECIU (52,6%) are directly pursued with at least one network activity. The case study universities' activities within the ECIU, furthermore, indirectly serve approximately one quarter of their ECIU objectives. Another quarter of the case study universities' ECIU objectives are not actively pursued.

In concert with the alignment of the ECIU activities with the ECIU objectives, also the extent of the alignment of the ECIU objectives with the ECIU activities strongly differs across the individual cases. With their engagement in the ECIU, the UT directly pursues all of the objectives towards the ECIU. Also UAB's activities within the ECIU serve all of their objectives; however, 50% of the objectives in a direct and 50% in an indirect ways. The UiS has more than half of their objectives directly and one objective indirectly aligned with their activities, while they do not use the network at all for one objective towards the ECIU. DCU and TUHH show the lowest alignment between their ECIU objectives and activities. 50% of their ECIU objectives are not at all pursued by their ECIU engagement. While DCU has one

objective which is directly aligned and one objective which is indirectly aligned with their ECIU activities, the German university only pursues one objective indirectly.

Table 15: The alignment of the case study universities' ECIU objectives with their ECIU activities in absolute numbers and in percentages relative to the institutions' total number of objectives (total number/relative percentage)

Alignment of ECIU Objectives with Activities	UAB	DCU	TUHH	UiS	UT	Total
Direct alignment (++)	2/ 50%	1/ 25%	0/ 0%	3/ 60%	4/ 100%	10/ 52,6%
Indirect alignment (+)	2/ 50%	1/ 25%	1/ 50%	1/ 20%	0/ 0%	5/ 26,3%
No alignment (-)	0/ 0%	2/ 50%	1/ 50%	1/ 20%	0/ 0%	4/ 21,1%
	4/ 100%	4/ 100%	2/ 100%	5/ 100%	4/ 100%	19/ 100%

6. Conclusion and Discussion

6.1. CONCLUSION

In a context of globalisation, higher education institutions were observed to increasingly cooperate in international inter-university networks. Such networks promise auspicious benefits, such as increased institutional competitiveness, access to larger academic environments, greater global visibility, improved service to students and extended organisational capacities. Accordingly, higher education institutions often widely announce and praise their engagement in inter-university networks and the expected benefits using illustrative key words like *world class*, *profiling*, *leading* and *excellence*. At the same time, it was realised that inter-university networks frequently remain or become inactive over time and that they fail to deliver results relative to their objectives. As a response to this, the thesis at hand dealt with the moot point of whether the strong rhetoric surrounding higher education institutions' engagement in inter-university networks actually matches the reality. In order to do so, a cross-sectional multiple case study design was adopted. The selected cases were five European member institutions of one inter-university network, the European Consortium of Innovative Universities (ECIU), including the Autonomous University of Barcelona (Spain), Dublin City University (Ireland), Hamburg University of Technology (Germany), the University of Stavanger (Norway), and the University of Twente (the Netherlands). More specifically, this thesis asked to what extent higher education institutions' objectives towards inter-university networks and the activities they perform within these networks are aligned with each other. The theoretical framework of this study was based on the resource dependence theory. The goal of the research was to test the theoretical expectation of the resource dependence theory that the case study institutions' objectives towards the ECIU and their activities within the network are aligned with each other.

First, inter-university networks needed to be defined. Therefore, the first sub question of this study was:

1. *How can international inter-university networks be defined?*

Based on desk research, inter-university networks were defined as formal, multilateral, multi-purpose and voluntary cooperative arrangements between higher education institutions from multiple countries which are coordinated by an additional administrative layer.

In order to answer the second and third sub questions of this research, qualitative data of the five case study universities' engagement in the ECIU was collected through (mainly) semi-structured interviews. From the data collected it was possible to derive answers to the following sub questions:

2. *What objectives do ECIU member institutions pursue specifically by engaging in the ECIU?*

The specific results which ECIU universities aim to achieve through the engagement in the ECIU are mainly an increased access to strategic information and a strengthened voice on a political scene. Other objectives included the increased possibilities for student exchange, increased research cooperation and access to research funding, institutional reputation gain and enhanced institutional visibility.

Based on the resource dependence theory, higher education institutions operate in an environment of interdependencies and resource scarcities. This thesis has explained how different developments in the higher education institutions' environment (including globalisation, internationalisation, marketisation and massification of higher education, demand overload and reduced governmental support) increase higher education institutions' resource needs and interdependencies. Furthermore, the theory predicts that operating in such environment, higher education institutions cooperate in order access resources which they need to prosper and survive. This means that higher education institutions' objectives towards their inter-university network engagements were expected to be based on their individual resource needs. While this was not explicitly tested in this study, the data collected showed some indication for the resource dependence theory's prediction that the motivation for higher education institutions to engage in inter-university networks is mainly stimulated by external factors rather than internal processes. For example, case study institutions reported to aim at research funding through the ECIU because they have experienced decreased public funding. Other institutions reported to aim at a strengthened political voice vis-à-vis European authorities through the ECIU because they are aware of an increasing impact of the European Union on their institutions and therefore perceive the need to join political forces.

It was also stated that the resource dependence theory expects higher education institutions to have a limited number of explicitly formulated objectives towards their network engagements. This was not consistently found in data. None of the case study universities has formalised or officially codified objectives towards their ECIU membership. Furthermore, all case study universities have multiple ECIU objectives. Besides TUHH which was shown to have two ECIU objectives, the case study universities pursue four or five different objectives distributed over research, education and organisational development. Furthermore, since the institutions' ECIU objectives are expected to be based on the institutions' resource needs, it can be concluded from the number of objectives that the TUHH has less resource scarcity and, hence, resource dependence, than the other institutions.

3. What activities do ECIU member institutions specifically perform within the ECIU?

It was expected that the institutions would have a very limited number of targeted activities. According to the theory employed, higher education institutions act rationally and in their own interest. They engage in inter-university networks as much as necessary to gain the needed resources but as little as possible in order to keep their autonomy high. The interactions which one ECIU member performs with one or multiple other ECIU members and which were initiated or facilitated by the network structure, however, were shown to be numerous and diverse. The interactions cover a wide range of educational and organisational activities and, to a lesser extent, research-related activities. In the field of education, the ECIU member institutions offer joint degree programmes, exchange students, pursue joint projects on teaching and learning and exchange knowledge. Organisational activities performed by the ECIU members within the network include political activities, staff development programmes, staff mobility and knowledge exchange on topics related to organisational development and strategy. In the field of research and technology transfer, the ECIU institutions do not perform any activity beyond knowledge exchange

on research and technology transfer related issues. This shows that research collaboration apparently takes place in a different framework than institutional inter-university networks.

After having answered the three sub questions, the overall research question of this study can be answered. The question is:

To what extent are the objectives which member institutions of the European Consortium of Innovative Universities pursue by engaging in the network and the activities which they perform within the network aligned with each other?

The research builds on the resource dependence theory which considers cooperation between organisations as strategic actions to control resources which they need to prosper and survive. The perspective predicts that higher education institutions strategically arrange their inter-university network activities as purposeful actions targeted solely at the fulfilment of their network objectives. Thus, the resource dependence theory determines the network objectives as cause and the network activities as effect and predicts the theoretical expectation that the case study universities' ECIU objectives and their ECIU activities are directly aligned with each other. The alignment of network objectives and network activities was analysed two-fold.

First, it was researched to what extent the activities performed within the ECIU contribute to the institutions' objectives (*alignment of activities with objectives*). The resource dependence theory predicts that cooperation is typically against the self-interest of higher education institutions. Therefore, their engagement won't exceed the activities necessary to achieve their network objectives. Thus, it was expected that the case study universities would only pursue activities which are targeted at their ECIU objectives. The analysis of the data collected, however, has shown that only approximately one third (36,6%) of the case study universities' ECIU activities are directly aligned and another 20% indirectly aligned with their network objective. This means that still almost half of the activities (43,4%) the case study universities perform within the ECIU do not contribute at all to the institutions' ECIU objectives. Misaligned activities were mainly found in the field of organisational development. Another finding was that there is a lot of diversity regarding the extent to which the institutions use the ECIU for achieving their objectives. 71% of the UT's and 80% of the UiS' ECIU activities are directly or indirectly aligned with their ECIU objectives while the TUHH does not perform any activity within the ECIU which directly matches their ECIU objectives and only one activity which indirectly contributes to their ECIU objectives. In the cases of the UAB and DCU, 25% of their activities were found to be directly aligned with their ECIU objectives.

The findings which do not testify a (complete) direct alignment of the institutions' ECIU activities with their ECIU objectives are contradictive to what the resource dependence theory predicts. In light of the theory, institutions would never perform cooperative activities which are not targeted at their objectives. Their sole interest is the achievement of their goals while keeping their autonomy as high as possible. This means that the resource dependence theory cannot explain all the activities which are performed within the ECIU.

Then, it was analysed to what extent the case study universities' objectives are pursued by the institutions' activities in the network (*alignment of objectives with activities*). Since the resource dependence theory considers higher education institutions as rational actors, they expect them to set their objectives towards their network engagements and then actively pursue these objectives. The analysis has shown that approximately half of the institutions' ECIU objectives (52,6%) are directly and another quarter of the objectives (26,3%) are indirectly pursued by the institutions' ECIU activities. Furthermore, there was again shown to be a great variety between the case study universities. The analysis found case study universities which pursue all of their ECIU objectives, including the UT and the UAB (while the UT directly pursues all of their ECIU objectives, the UAB directly pursues 50% of their objectives and the remaining 50% indirectly). Then there were cases found which pursue their ECIU objectives to a limited extent. The UiS directly or indirectly pursues 80% of their ECIU objectives. DCU pursues 25% of its ECIU objectives directly and another 25% indirectly while TUHH does not pursue any ECIU objectives directly, however, 50% of its objectives indirectly.

The findings on the alignment of the institutions' ECIU objectives with their ECIU activities show that the overall majority of the case study universities' ECIU objectives are either directly or indirectly pursued through the institutions' ECIU engagement. Nevertheless, there are still objectives which are not served, especially in the case of some case study universities. Just as in the case of the activities, this means that the data cannot confirm the resource dependence theory. While the theory can explain the UT's and the UAB's engagement in the ECIU, it cannot explain why the DCU, TUHH and the UiS would engage in the ECIU if not for the achievement for their own objectives.

While the findings on the alignment of the individual cases differ greatly, the consolidated findings of the five case studies showed that one third of the activities performed within the ECIU (36,6%) directly contribute to 52,6% of the performing institutions' objectives towards the network. If the indirectly aligned ECIU objectives and activities are included, it can be stated that half of the activities performed within the ECIU (53,2%) directly or indirectly contribute to three quarters (73,7%) of the performing institutions' objectives towards the network. This means that, overall, the way higher education institutions use their engagement in inter-university networks in reality is to a greater extent in line with the rhetoric surrounding these engagements (in terms of their objectives). However, it was also shown that the case study institutions' do not *only* use the ECIU for their own objectives. The study found activities without aligned objectives as well as objectives without aligned activities. This implies that the activities pursued within the ECIU are not solely determined by the institutions' network objectives and that the institutions' ECIU objectives and their ECIU activities are not directly aligned with each other. Consequently, the resource dependence theory could not be confirmed.

6.2. DISCUSSION

6.2.1. Discussion of the Study's Results

The following section will make an attempt to explain the findings of this study. Reasons for which the case study institutions may not use the ECIU only for their own objectives will be discussed. The results of this study could indicate that, on the one hand, the case study universities have objectives towards ECIU but struggle that their network activities are reaching these goals. Therefore, first, factors which might keep the case study universities to (only) perform activities aligned with their ECIU objectives will be discussed. On the other hand, the study may point to a high added value of the ECIU membership which moves the achievement of the institutions' own objectives into the background. To respond to this, the section will then also discuss the added value which the ECIU can bring ECIU members beyond their own objectives.

Intervening forces shaping institutions' activities in the ECIU

The findings of this study imply that the activities pursued within the ECIU are not solely determined by the institutions' network objectives. Consequently, there must be other mechanisms that determine the nature of network activities and objectives. This section will discuss intervening forces that shape higher education institutions' cooperative actions in inter-university networks and may prevent the case study universities from undertaking actions which are in line with their ECIU objectives and resource needs. The section will also respond to the found differences in the alignment between the different cases. Thereby, it will illustrate some shortcomings of the resource dependence theory. At the same time, by recognising that organisations may be motivated, but not always capable to take actions to manage specific external dependencies, the explanatory power of resource dependence theory can be enhanced.

First, the set of activities ECIU member institutions can practically consider within the network is limited by the network structure. This means that the network partially determines the institution's activities. For example, certain activities are prescribed by the network. In the case of the ECIU this includes, for instance, the participation in the Steering Committee on Innovation in Teaching and Learning through which all members were automatically assessed to be involved in knowledge exchange activities in the field of education. This had a negative impact on the alignment of the case study universities which do not aim at strategic knowledge in the field of education (TUHH and the UAB). This could mean that the better the institutions' objectives fit with the activities prescribed by the network, the higher their alignment.

In the same manner, the available partner institutions and their national and institutional legal frameworks could have kept the case study universities to pursue certain network activities. For example, the development of further joint programmes within the ECIU was reportedly hindered by discrepancies in the institutions' legal frameworks, selection procedures, tuition fees, quality standards and assessment methods. This was confirmed by Beerkens' analysis of the ECIU (2004). He found that the diversity in systems, regulations and procedures of the different countries are large and hinder certain collaborative actions within the ECIU network.

Not only regulatory discrepancies, but also cultural and social differences can determine the case study universities' cooperative set of actions. Although the ECIU universities see themselves as "like-minded", the institutions' representatives acting within the network structure are shaped by a variety of cultural backgrounds. The data collected points to different ways of the institutions to engage in discussions and to express their opinions, as well as discrepancies in participants' proficiency in English (as the language of communication). All this can make some institution be more dominant in network meetings and present difficulties for other institutions to push their agenda forward. This shows that the institution's network activities can be very dependent on individual actors which represent the institutions in the network.

Every activity which is performed within a network requires at least one other member institution which is willing to participate in the activity. Conflicting priorities can also be a reason why the case study institutions do not use the ECIU in a way which would have better addressed their own resource needs. It was shown that the ECIU member institutions have very different, not necessarily compatible, objectives towards the ECIU. DCU and TUHH mainly aim at research cooperation, while the UT rejects any attempts to work in this direction. The UT and the UiS aim at increased student exchange while DCU does not want to engage in any activities targeted at student mobility. In addition, even if all partners aim for the same goal, opinions on how the objectives should be achieved reportedly differ within the network to the extent that it completely keeps activities from being implemented.

These various factors on the network level show that the institutions' network activities can be directly determined by the institutions which constitute the network's membership. It was also shown that, not only external dependencies and resource needs, but also the network structure can determine institutions' cooperative activities. The suggestion that the adaptation to network dynamics can be key to the performance of certain activities is an approach adopted by the institutional theory. The theory explains that by performing certain activities which are considered to be acceptable and legitimate within the ECIU, the case study universities demonstrate conformity to the expectations of the network environment. Following this, decisions to perform certain activities or to pursue certain objectives are likely to be influenced by the extent to which cooperation has become either taken for granted or necessary to appear legitimate within the ECIU.

Second, institutional constraints can keep the universities from executing strategic activities within the ECIU. All too often institutions are member of inter-university networks without devoting the appropriate resources and energies to sustain an effective collaboration (IIE, 2011). This was also apparent in the case of the ECIU. Due to financial resource scarcities and work overload, DCU has difficulties to pursue desired activities within the ECIU. The local coordinator reported to lack capacities to launch (additional) ECIU activities and the university's staff to execute these activities. While the resource dependence theory predicts that resource scarcities motivate universities to engage in cooperative network arrangement, this shows that they can also keep them from exploiting the network to their own benefit. The transaction cost theory would argue that in these cases the costs for cooperative actions are too high and do not exceed benefits. DCU concentrates on specific types of activities in the ECIU which allow

them to keep the costs of negotiating and implementing activities as well as the cost of monitoring and enforcing compliance with agreements (transaction costs) manageable.

While the financial resource situation can be considered as one of the explanations for the extent of alignment between DCU's ECIU objectives and activities, there is no general pattern which shows a correlation between the other institutions' financial resource situation and the extent of their alignment.⁶ Also, the number of other network memberships, which could decrease the institutions' capacities which can be devoted to the ECIU, cannot explain the differences between the case study universities' alignments. For example, both TUHH and the UiS do not have any other network engagements besides the ECIU but show very different extents of alignment. Also, there is no correlative pattern apparent regarding the importance of the network to the institutional leadership, neither to the size, focus, reputation and age of the institutions nor their degree of internationalisation. While the network theory would expect the duration of the institution's ECIU membership to be factors which determine the institution's alignments, the data does not show any indication in that regard. The theory, however, could explain the institutions' activities within the ECIU. The theory would expect the institutions' position within the network (such as having many ties or being centrally located) to determine their activities since the probability of certain activities between specific institutions is predicted to increase with prior cooperation (Gulati & Gargiulo, 1999).

The lacking engagement of the students and staff of the institutions is reportedly one of the main problems in executing activities which are in line with the institutions objectives. This explains, for example, the findings for TUHH as well as DCU which both actively pursue their ECIU objectives to a very limited extent. Both universities have half of their ECIU objectives in the field of research and reported of difficulties to engage their academic staff in research collaboration within the ECIU. They said that researchers already had their own networks and contacts which were build on previous professional relationships or personal connections and not on their institution's networks. Especially in research, academics preferred to choose their partners themselves since research projects required a high level of trust and reliability between the partners and not on the basis of their universities' institutional networks. In brief, difficulties in implementing activities within the ECIU which are in line with the institutions objectives arise because inter-university networks, including the ECIU, are initiated from the top of the administration, but intend to change the actions of the lower level of the institution (see Tadaki & Tremewan, 2013).

Also, besides the UT, all case study institutions reported that there is not necessarily a very good knowledge about the objectives towards the ECIU among the institutions' staff and students. This could be an explanation for the high score of the alignment between UT's ECUI objectives and activities. In case of the other institutions, lacking knowledge on the institution's objectives towards the ECIU might

⁶ based on the institutions' budget/student (see Appendix 8).

prevent their staff that engage in the ECIU to focus on activities which are aligned with the institution's objectives. Under such circumstances, the activities within the ECIU might rather follow convenience or personal/departmental interests than the institutional network objectives.

Another approach to explain the results of this study is related to the nature of the institutions' ECIU objectives. The initiation and implementation of certain cooperative projects can take a long time while others are relatively easy to pursue. Cooperation in the field of organisational development, for example, can have an impact on the short term while program development cooperation is constructed on the medium term, and scientific and political ties require long term investments (Akkerman et al., 2012). This could explain why the institutions use the ECIU for activities in the field of organisational development although they do not necessarily have objectives in this field. That would mean that institutions with a focus on organisational objectives show a higher alignment than institutions with a focus on research or political objectives. This argumentation finds some confirmation in the results of this study. TUHH, for example, which has political and research related objectives towards the ECIU, show less alignment than the UAB which mainly aim at benefits in the field of organisational development.

To conclude, this section has discussed some factors which might have shaped the case study universities' decisions towards and actions within the ECIU. These can account for the fact that they do not cooperate in the rational and strategic way the resource dependence perspective predicts. While the resource dependence theory expects that the network activities are solely determined by the network objectives, there are other factors which impact the network activities. It was shown that one of the resource dependence theory's major limitation is its assumption that higher education institutions' behaviour is mainly determined by materialistic factors. The theory ignores the role of cultural, network-internal, and institutional forces. Although institutions may legitimise their involvement in inter-university networks with its contribution to their goals in their strategies or mission statements, it was shown that other factors, such as the dynamic of the network, the institutional capacities and the salience of the network within the institutions, also determine the extent of their active participation. Another shortcoming of the resource dependence theory is that the perspective disregards the operation of social influence processes which might limit collaborative behaviour. The theory adheres to the rational actor model, where all actors are utility maximisers and ignores that organisations are multi-actor entities which rarely completely act in concert and where the leadership does not control all actions.

The ECIU and its added value

Resource dependence theorists would see the case study universities' activities which are not aligned with their objectives as acts of wasting autonomy. They would not acknowledge the fact that performing all kind of non-aligned activities can also mean that the ECIU offers the institutions even more value than they have hoped for. For example, all case study universities participate actively and (reportedly) enthusiastically in the ECIU's Leadership Development Programme. Although none of the institutions feature an ECIU objectives related to this activity (such as an enhanced capacity of staff), the participation in the programme can still clearly bring benefits to the institutions. This can also be applied to all the other

activities which are done in the ECIU but which are not aligned with the institutions' ECIU objectives. TUHH, for example, performs six different activities within the ECIU, but only one of these is aligned with the institution's ECIU objectives. Thus, while the institution somehow do not or cannot meet their entire ECIU objectives (several reasons for this were discussed above), they still use the ECIU very actively in other areas and may gain great added value through this.

Especially the relative similarity of the universities in terms of age, size and scientific orientation, their shared focus on innovation and entrepreneurship and similar strategic orientation were reported to be a decisive force which allows profitable information exchange and shared learning experiences. The University of Stavanger, for example, states that "they have the same goals as us and therefore we can learn from each other" (ECIU Local Coordinator, UiS, 2016). Regardless of whether it was their goal or not, all case study universities have reported to have gained access to knowledge networks and opportunities for strategic advice and lesson-drawing from diverse institutional experiences. As indicated above, this points to a network dynamic which subsists on its member institutions' compatibility, rather than complementarily. This is rather in contrast to the resource dependence theory which emphasises the increased control of environmental elements that can come from cooperation. Theories such as the exchange theory, however, highlight elements of similarity and mutual benefit and point towards the added value in the field of learning and the informational benefits that inter-university networks can provide and which can explain part of the found mismatch between the case study universities' ECIU activities and their ECIU objectives.

Also, the member institutions might already gain by simply being member of the institutions regardless of the activities performed within it. Some respondents reported to use the networks as a branding activity. They acquired status and additional focus by showing their membership in the ECIU as well as profiled themselves as an internationally oriented university. The same mechanism applies regarding the representation of the universities on the political stage. While most of the case study universities are not significantly active in the field of policy making, the ECIU features working groups and individuals who represent the network vis-à-vis European policy maker. This means also that member institutions which have political objectives towards their ECIU can achieve their objective only by being member of the ECIU. Nevertheless, it remains questionable to what extent the ECIU membership actually enhances the institutions' voice on a political scene. Contrasting the view of the resource dependence theory on cooperation, in these cases the network engagement can represent a goal in itself instead a means to an end.

Finally, the network reportedly offers its members the advantage of building long term relationships building up trust and familiarity which also allows its members to share problems, mistakes and failures.

6.2.2. Limitations, Relevance & Recommendations for Future Research

Limitations of the study

Since inter-university networks are a rather unstudied field, using the qualitative research methods helped to understand differences between theoretical and practical outcomes of the analysed research object (Marshall & Rossman, 1992). The qualitative approach also turned out to be useful since it allowed to certainly applying the conceptualisation developed in this thesis. Although the resource dependence theory needed to be rejected, the theory was useful in guiding which observations to make. However, the study also has some shortcomings and inadequacies.

First of all, the sampling strategy which led to investigate a small number of higher education institutions of one inter-university network makes it questionable whether and to what extent the findings are transmittable to other entities and contexts. Further research would be needed to verify the generalisability of the findings. Second, it turned out to be difficult to get a holistic overview of the case study institutions' ECIU activities and their intensity which represented a clear risk to the studies validity. To secure that all activities are capture, a large number of person would have needed to be interviewed which made this not a practical option. It was tried to limit this risk by using multiple sources of data, including the leaders of the ECIU workings groups and Steering Committee. This turned out to be very useful to verify and complement the list of activities provided by the local coordinators. Nevertheless, the risk that not all activities were captured remains, especially in the field of research cooperation.

Moreover, the fact that the majority of data used in this study was still gained through the interviews with the ECIU local coordinators means that they are inevitably subjective. Although the local coordinators were willing to answer all questions and to further elaborate on topics when it was requested, the risk remains that the interviewees have hidden their strategies or have not been truthful (Silverman, 2015). To counteract this, the researcher inquired the same phenomena in various ways and multiple times (Leech, 2002). In retrospective, it would have proven useful to interview the rectors of the institutions in order to additionally cross-check the self-reported data by the local coordinators, in particular in regards of the network objectives.

Furthermore, this thesis assumed that universities are organisations and that they know their rationales, objectives and activities and disregarded that universities might be loosely coupled systems in which “coupled events are responsive, but [...] each event also preserves its own identity” (Weick, 1976, p. 3).

Finally, this study disregards the intensity of the activities performed within the ECIU and the importance of the objectives. The activities were counted as one activity, regardless of their intensity. For example, a onetime participation in the ECUI Leadership Development Programme counted the same as an every-year participation; it did not influence the analysis and conclusion whether an ECIU joint master programme has five or 100 students. The thesis also did not respond to the importance of the objectives. All objectives were counted as being similarly important. For example, the fact that the DCU mainly attaches most importance to its ECIU objectives in the field of research is not regarded. This was due to

the fact that not enough data was available to include the intensity of the activities and the importance of the objective consistently for all case study universities.

Relevance of this study and recommendations for future research

During the time of this study, it has been found that the available literature and research material in this subject matter is very limited. Scholars agree that there is a lack of research which systematically evaluate, qualitatively or quantitatively, what higher education institutions actually gain from their membership in inter-university networks (Brown et al., 2007; Beerkens, 2004; Smith et al., 1995; Chapman et al., 2014). This study contributes to fill this knowledge gap to a certain extent by researching what activities higher education institutions actually do relative to their objectives. After the relationship between network objectives and network activities were described in-depth within this qualitative research, statistically generalisable studies could be undertaken.

Since this study does not aim at explaining why certain institutions are likely to have certain network objectives, the impact of different factors on network objectives were not tested (see chapter 4.3. for delimitations of this study). Further research could test resource dependence theorists' expectation that network objectives are based on institutions' resource scarcities. The influence of factors such as the institutions' contexts, characteristics, strategies and funding models on higher education institutions' network objectives should be tested. This would especially be interesting against the background of the ECIU since this study has shown that the institutions have very different objectives towards the ECIU although they maintain to have similar institutional missions, needs and goals.

While the resource-based approach is commonly used to explain cooperation in inter-university networks this study is among the first to actually test the resource dependence theory. And indeed, the qualitative approach to our analysis unfolded the differences between the theoretical and practical understanding of inter-university network engagement. Nevertheless, the resource dependence theory had to be rejected on the basis of the findings of this study. Quantitative studies could be undertaken in order to verify the results of this study on a larger scale. Moreover, other theories' explanatory power on why and how higher education institutions engage in inter-university networks could be tested. As it was mentioned in the theoretical framework of this study, the network theory, transaction cost theory, exchange theory or institutional theory could provide interesting starting points. For further studies it would also be recommended to include the intensity of the institutions' network activities and the importance of their objectives.

Besides its contribution to the identified knowledge gap, the study is significant for practitioners in higher education. If higher education institutions want to meet their network objectives, either their inter-university network activities need to be continually evaluated and, if necessary, adapted or their objectives towards their networks need to be revisited. The results of this study could encourage those who formulate and plan institutional cooperation policies to reflect on the usefulness of the activities which their institutions perform within networks develop systems and tools for monitoring the quality and progress of its network cooperation. Also, based on the findings of this study, it is recommended for

higher education institutions to formalise their objectives and distribute them within the institutions which is the basis that allows administrative and academic staff to work towards the institutions' goals.

References

- Akkerman, A., Torenvlied, R., & Schalk, J. (2012). Two-Level Effects of Interorganizational Network Collaboration on Graduate Satisfaction: A Comparison of Five Intercollege Networks in Dutch Higher Education. *The American Review of Public Administration*, 42(6), 654–677. doi:10.1177/0275074011425418
- Aldrich, H. (1979). *Organizations and environments*. Stanford business classics. Stanford Calif.: Stanford University Press.
- Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). Trends in Global Higher Education: Tracking an Academic Revolution: A Report Prepared for the UNESCO 2009 World Conference on Higher Education. Paris: UNESCO.
- Babbie, E. (2007). *The practice of social research*. Belmont Calif. u.a.: Thomson Wadsworth.
- Beelen, J., & Wit, H. d. (2012). *Internationalisation revisited: New dimensions in the internationalisation of higher education*. Amsterdam: Centre for Applied Research on Economics and Management (CAREM).
- Beerkens, H. (2002). International Inter-organisational Arrangements in Higher Education: Towards a Typology. *Tertiary Education and Management*, 8, 297–314.
- Beerkens, H. (2003). Globalisation and Higher Education Research. *Journal of Studies in International Education*, 7(2), 128–148.
- Beerkens, H. (2004). Global opportunities and institutional embeddedness: Higher education consortia in Europe and Southeast Asia. Enschede: Cheps/University of Twente.
- Beerkens, H., Brandenburg, U., Evers, N., Gaalen, A. van, Leichsenring, H., & Zimmermann, V. (2010). *Indicator Projects on Internationalisation: Approaches, Methods and Findings*. A report in the context of the European project “Indicators for Mapping & Profiling Internationalisation” (IMPI). Retrieved from http://www.impi-project.eu/pdf/full_indicator_projects_on_internationalisation-IMPI%20100511.pdf
- Beerkens, H., & Wende, M. v. d. (2007). The paradox in international cooperation: Institutionally embedded universities in a global environment. *Higher Education*, 53, 61–79. doi:10.1007/s10734-005-7695-z
- Boer, H. d., & Jongbloed, B. (2015). Reflections on performance agreements in higher education. In T. Hægeland (Ed.), *Finansiering for kvalitet, mangfold og samspill: Nytt finansieringsystem for universiteter og høyskoler*. (pp. 168–185). Oslo: Kunnskapsdepartementet.
- Boerner, C. & Macher, J. (2005). *Transaction cost economics: An assessment of empirical research in the social sciences*. Unpublished manuscript. Mimeograph, Georgetown University, Washington, DC. Retrieved from http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=2287&context=faculty_scholarship
- Borgatti, S. P., & Halgin, D. S. (2011). On Network Theory. *Organization Science*, 22(5), 1168–1181. doi:10.1287/orsc.1100.0641
- Brown, K. L., Epstein, A., Niland, L. L., Wood Rudasill, K., Shu-En Tay, S., & Zaman, K. (2007). *Markets & Mobility: The rise, rhetoric and reality of inter-university consortia*. Madison: University of Wisconsin. Retrieved from <https://globalhighered.files.wordpress.com/2007/10/consortiafinal3.pdf>
- Brown, M., Costello, E., Donlon, E., & Giolla-Mhichil, M. N. (2015). A Strategic Response to MOOCs: How One European University is approaching the Challenge. *International Review of Research in Open and Distributed Learning*, 16(6).
- Cameron, K. (1984). Organizational Adaptation and Higher Education. *Journal of Higher Education*, 55(2), 122–144.

- Casingena Harper, J., Curaj, A., Egron-Polak, E., & Georghiou, L. (Eds.). (2015). *Mergers and Alliances in Higher Education: International Practice and Emerging Opportunities*. Cham: Springer International Publishing.
- Chan, W. W. Y. (2004). International Cooperation in Higher Education: Theory and Practice. *Journal of Studies in International Education*, 8(1), 32–55. doi:10.1177/1028315303254429
- Chapman, D. W., Pekol, A., & Wilson, E. (2014). Cross-border university networks as a development strategy: Lessons from three university networks focused on emerging pandemic threats. *International Review of Education*, 60(5), 619–637. doi:10.1007/s11159-014-9439-8
- Cheng, Y., Wang, Q., & Liu, N. C. (2014). How world-class universities affect global higher education: Influences and responses. Global perspectives on higher education: volume 30. Rotterdam: SensePublishers.
- Clark, B. (1998). Creating entrepreneurial universities: Organizational pathways to transformation. Oxford: IAU and Pergamon Press.
- Collins, K. (2010). Advances Sampling Designs in Mixed Research: Current Practices and Emerging Trends in the Social and Behavioral Science. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social & behavioral research* (2nd ed., pp. 353–375). Los Angeles Calif. u.a.: Sage.
- Dai, L. (2010). Maximizing cooperation in a competitive environment. *Advances in Competitiveness Research*, 18(1), 50–68.
- Dakovic, G. (2014). *The Impact of Consortium Characteristics on Credit Recognition Performance*. Unpublished Master's Thesis, University of Twente, Enschede. Retrieved from http://essay.utwente.nl/65219/1/Dakovic_MA_SMG.pdf
- Davis, G., & Cobb, A. (2010). Resource Dependence Theory: Past and Future. *Research in the Sociology of Organizations*, 28, 21–42.
- Deiaco, E., Gren, A., & Melin, G. (2009). Exploring University Alliances and Comparable Academic Cooperation Structures. In M. McKelvey & M. Holmén (Eds.), *Learning to Compete in European Universities: From Social Institution to Knowledge Business* (pp. 19–47). Cheltenham: Edward Elgar Publishing.
- Deiaco, E. & Melin, G. (2006). *Considerations on University Alliances: Motives, Risks and Characteristics*. Working Paper Series in Economics and Institutions of Innovation, Nr. 64. Royal Institute of Technology, CESIS. Retrieved from <https://static.sys.kth.se/itm/wp/cesis/cesiswp64.pdf>
- Delgado-Márquez, B. L., Hurtado-Torres, N. E., & Yaroslava, B. (2012). Internationalization of Higher Education in University Institution Rankings: The Influence of National Culture. *Journal of International Education and Leadership*, 2(1), 1–17.
- Denman, B. (2002). Globalisation and the Emergence of International Consortia in Higher Education. *Globalization*, 2(1), 1–14.
- Dey, I. (2005). Qualitative data analysis: A user-friendly guide for social scientists. London: Taylor & Francis e-Library.
- Eastman, J. A., & Lang, D. (2001). *Mergers in higher education: Lessons from theory and experience*. Toronto, Ont.: University of Toronto Press.
- ECIU. (2012). *Brochure*. Retrieved from http://s3.amazonaws.com/zanran_storage/eciu.web.ua.pt/ContentPages/2540943846.pdf
- ECIU. (2015). *The role of Universities in the Smart Specialisation Strategy process. The ECIU Perspective*. Retrieved from http://www.eesc.europa.eu/resources/docs/eciu_the-role-of-universities-in-the-smart-specialisation-process.pdf
- ECIU Local Coordinator, Autonomous University of Barcelona (UAB) (2016, January 14). Interview by M. Fastner.
- ECIU Local Coordinator, Dublin City University (DCU) (2016, January 7). Interview by M. Fastner.

- ECIU Local Coordinator, Hamburg University of Technology (TUHH) (2016, January 20). Interview by M. Fastner.
- ECIU Local Coordinator, University of Stavanger (UiS) (2016, January 13). Interview by M. Fastner.
- ECIU Local Coordinator, University of Twente (UT) (2016, January 13). Interview by M. Fastner.
- Eitzen, D. S., & Baca Zinn, M. (2012). *Globalization: The transformation of social worlds* (3rd ed.). *Wadsworth sociology reader series*. Belmont, CA: Wadsworth Cengage Learning.
- Ek, A.-C., Ideland, M., Jönsson, S., & Malmberg, C. (2013). The tension between marketisation and academisation in higher education. *Studies in Higher Education*, 38(9), 1305–1318. doi:10.1080/03075079.2011.619656
- European Commission. (2009). Drivers of international collaboration in research: Final report. EUR / European Commission: Vol. 24195. Luxembourg: EUR-OP.
- Flick, U. (Ed.). (2014). *The SAGE handbook of qualitative data analysis*. Los Angeles Calif. u.a.: Sage.
- Foskett, N. (2012). Global Markets, National Challenges, Local Strategies: The Strategic Challenge of Internationalization. In F. Maringe & N. Foskett (Eds.), *Globalization and internationalization in higher education. Theoretical, strategic and management perspectives* (pp. 35–51). London u. a.: Continuum.
- Fyall, A., & Garrod, B. (2005). Tourism marketing: A collaborative approach. Aspects of tourism: Vol. 18. Clevedon u.a.: Channel View Publ.
- George, A. L., & Bennett, A. (2005). Case studies and theory development in the social sciences. BCSIA studies in international security. Cambridge Mass. u.a.: MIT Press.
- Georghiou, L., & Harper, J. (2015). Mergers and Alliances in Context. In J. Casingena Harper, A. Curaj, E. Egron-Polak, & L. Georghiou (Eds.), *Mergers and Alliances in Higher Education. International Practice and Emerging Opportunities* (pp. 1–16). Cham: Springer International Publishing.
- Gibbons, M. (1998). Higher Education Relevance in the 21st Century. Washington: World Bank.
- Ginkel, H. van (1996). Networking and Strategic Alliances. Dynamic Patterns of Organisation and Cooperation. *CRE-Action*, 109, 91–105.
- Grant, R. M., & Baden-Fuller, C. (2004). A Knowledge Accessing Theory of Strategic Alliances. *Journal of Management Studies*, 41(1), 61–84. doi:10.1111/j.1467-6486.2004.00421.x
- Gray, B. (1989). *Collaborating: Finding Common Ground for Multiparty Problems*. San Francisco: Jossey-Bass.
- Grix, J. (2004). *The Foundations of Research. Palgrave Study Guides*. New York: Palgrave Macmillan Ltd. Retrieved from <http://gbv.ebib.com/patron/FullRecord.aspx?p=433562>
- Gschwend, T. (Ed.). (2011). *Research design in political science: How to practice what they preach* (Publ. in paperback). Basingstoke: Palgrave Macmillan.
- Gulati, R. (1998). Alliances and Networks. *Strategic Management Journal*, 19, 293–317.
- Gulati, R., & Gargiulo, M. (1999). Where Do Interorganizational Networks Come From? *American Journal of Sociology*, 104(5), 1439-1438. doi:10.1086/210179
- Gulati, R., & Sytch, M. (2007). Dependence Asymmetry and Joint Dependence in Interorganizational Relationships: Effects of Embeddedness on a Manufacturer's Performance in Procurement Relationships. *Administrative Science Quarterly*, 52, 32–69.
- Gunn, A., & Mintrom, M. (2013). Global university alliances and the creation of collaborative advantage. *Journal of Higher Education Policy and Management*, 35(2), 179–192. doi:10.1080/1360080X.2013.775926
- Guo, C., & Acar, M. (2005). Understanding Collaboration Among Nonprofit Organizations: Combining Resource Dependency, Institutional, and Network Perspectives. *Nonprofit and Voluntary Sector Quarterly*, 34(3), 340–361.
- Haan, H. de. (2011). *Enhancing Competitive Advantages: Dutch Higher Education Institutions Strategically Managing Internationalisation*. PhD Thesis. Bath: University of Bath.

- Harman, G. S. (1988). Studying mergers in higher education. In G. S. Harman & V. L. Meek (Eds.), *Institutional amalgamations in higher education: Process and outcome in five countries* (pp. 1–7). University of New England: Department of Administrative and Higher Education Studies.
- Harman, G. S., & Meek, V. L. (1988). Lessons From Recent Experience With Mergers. In G. S. Harman & V. L. Meek (Eds.), *Australian higher education reconstructed? Analysis of the proposals and assumptions of the Dawkins green paper* (pp. 111–121). Armidale: Dept. of Administrative and Higher Education Studies, University of New England.
- Harman, K., & Meek, V. L. (2002). Introduction to special issue: “Merger revisited: international perspectives on mergers in higher education”. *Higher Education*, 44, 1–4.
- Harsch, M. F. (2015). *The power of dependence: NATO-UN cooperation in crisis management* (First edition). Oxford, United Kingdom: Oxford University Press.
- Hénard, F., Mitterle, A., & OECD. (2005). *Governance and quality guidelines in Higher Education: A review of governance arrangements and quality assurance guidelines*. Paris: OECD.
- Hessels, J., & Terjesen, S. (2010). Resource dependency and institutional theory perspectives on direct and indirect export choices. *Small Business Economics*, 34(2), 203–220. doi:10.1007/s11187-008-9156-4
- IIE. (2011). *International Education as an Institutional Priority*. New York: IIE.
- Johnson, J. B., Reynolds, H. T., & Mycoff, J. D. (2007). *Political science research methods* (6. ed.). Washington DC: CQ Press.
- Jones, C., Hesterly, H., & Borgatti, S. (1997). A General Theory of Network Governance: Exchange Conditions and Social Mechanisms. *The Academy of Management Review*, 22(4), 911–945.
- Jongbloed, B. (2009). *Funding Higher Education: A View across Europe*. Brussels: European Centre For Strategic Management Of Universities.
- Kehm, B. (2014). Beyond Neo-Liberalism: Higher Education in Europe and the Global Public Good. In P. Gibbs & R. Barnett (Eds.), *Thinking about higher education* (pp. 91–108). Cham: Springer.
- Kekäle, J. (2007). Developing an Entrepreneurial and Innovative University - the Case of the University of Joensuu. In L. W. Cooke (Ed.), *Frontiers in higher education* (pp. 65–76). New York: Nova Science Publishers.
- Kinser, K., & Green, M. (2009). *The Power of Partnerships: A Transatlantic Dialogue*. Washington: American Council on Education.
- Knight, J. (1994). *Internationalization: Elements and Checkpoints*. Research Monograph, No. 7. Ottawa: Canadian Bureau for International Education.
- Knight, J. (2004). Internationalization Remodeled: Definition, Approaches, and Rationales. *Journal of Studies in International Education*, 8(1), 5–31. doi:10.1177/1028315303260832
- Knight, J. (2007a). Internationalization: Concepts, Complexities and Challenges. In J. J. F. Forest & P. G. Altbach (Eds.), *Springer international handbooks of education: Vol. 18. International handbook of higher education* (pp. 207–227). Dordrecht: Springer.
- Knight, J. (2007b). The Lure of Europe for International Higher Education Cooperation. *International Higher Education*, 48(5), 5–6.
- Knight, J. (2008). *Higher education in turmoil: The changing world of internationalization*. Global perspectives on higher education: Vol. 13. Rotterdam u.a.: Sense Publ.
- Knight, J. (2011). Doubts and Dilemmas with Double Degree Programs [online monograph]. *Revista de Universidad y Sociedad del Conocimiento*, 8(2), 297–312. doi:10.7238/rusc.v8i2.1067
- Koza, M., & Lewin, A. (2000). Managing Partnerships and Strategic Alliances: Raising the Odds of Success. *European Management Journal*, 17(2), 146–151.
- Kraatz, M. (1998). Learning by Association?: Interorganizational Networks and Adaptation to Environmental Change. *Academy of Management Journal*, 41(6), 621–643.

- Kuiper, S., & Clippinger, D. A. (2013). *Contemporary business reports* (5th ed.). Mason, OH: South-Western, Cengage Learning.
- Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. Thousand Oaks Calif. u.a.: Sage Publ.
- Lang, D. W. (2002). A lexicon of inter-institutional cooperation. *Higher Education*, 44(1), 153–183. doi:10.1023/A:1015573429956
- Leech, B. (2002). Asking Questions: Techniques for Semistructured Interviews. *PS: Political Science and Politics*, 35(4), 665–668.
- Leišytė, L. (2007). *University governance and academic research: Case studies of research units in Dutch and English universities*. Enschede: CHEPS/UT.
- Levine, S., & White, P. E. (1961). Exchange as a Conceptual Framework for the Study of Interorganizational Relationships. *Administrative Science Quarterly*, 5(4), 583–601.
- Luijten-Lub, A. (2007). *Choices in internationalisation: How higher education institutions respond to internationalisation, europeanisation, and globalisation*. Enschede: University of Twente.
- Maringe, F., & Foskett, N. (2012). Introduction: Globalization and Universities. In F. Maringe & N. Foskett (Eds.), *Globalization and internationalization in higher education. Theoretical, strategic and management perspectives* (pp. 1–13). London u. a.: Continuum.
- Marsh, D., & Smith, M. (2000). Understanding Policy Networks: towards a dialectical approach. *Political Studies*, 48(1), 4–21.
- Marshall, C., & Rossman, G. B. (1992). *Designing qualitative research* (11. print). Newbury Park u.a.: Sage Publ.
- Mason, J. (2002). *Qualitative researching* (2. ed.). London u.a.: Sage.
- Maxwell, J. (1992). Understanding and Validity in Qualitative Research. *Harvard Educational Review*, 62(3), 279–301. doi:10.17763/haer.62.3.8323320856251826
- Maxwell, J. (2009). Designing a qualitative study. In L. Bickman (Ed.), *The SAGE handbook of applied social research methods* (2nd ed., pp. 214–253). Los Angeles u.a.: Sage.
- McKelvey, M., & Holmén, M. (Eds.). (2009). *Learning to Compete in European Universities: From Social Institution to Knowledge Business*. Cheltenham: Edward Elgar Publishing.
- Merriam, S. B. (1991). *Case study research in education: A qualitative approach*. San Francisco: Jossey-Bass.
- Middlehurst, R. (2001). University Challenges: Borderless Higher Education, Today and Tomorrow. *Minerva*, 39, 3–26.
- Mikulskiene, B. (2015). *Participatory governance success based on collective identity: social network analysis*. IRSPM 2015. Panel D102 - Reinventing Public And Non-Profit Governance. Retrieved from <http://irspm2015.com/sppa/index.php/irspm/IRSPM2015/paper/view/1480/379>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2. ed., 4. [print.]). Thousand Oaks Calif. u.a.: Sage Publ.
- Molesworth, M. (Ed.). (2011). *The marketisation of higher education and the student as consumer* (1. ed.). London u.a.: Routledge Taylor & Francis Group.
- Morse, J., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification Strategies for Establishing Reliability and Validity in Qualitative Research. *International Journal of Qualitative Methods*, 1(2), 13–22.
- Neave, G. R. (1992). *Managing higher education international cooperation: strategies and solutions*. Reference Document. Unpublished. Paris: UNESCO. Retrieved from <http://unesdoc.unesco.org/images/0009/000986/098679eb.pdf>
- Nohria, N., & Eccles, R. (Eds.). (1992). *Networks and Organizations: Structure, Form, and Action*. Boston: Harvard Business School Press.

- OECD. (2009). *OECD Reviews of Regional Innovation: Piedmont, Italy 2009* (2009th ed.). OECD Reviews of Regional Innovation. Paris: OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/9789264039162-en>
- Olds, K. (2009). *Associations, Networks, Alliances, etc: Making Sense of the Emerging Global Higher Education Landscape*. Discussion Paper for the IAU 3rd Global Meeting of Associations of Universities. Retrieved from <https://globalhighered.files.wordpress.com/2009/06/oldsiaupaperenglish.pdf>
- Oliver, A., & Ebers, M. (1998). Networking Network Studies: An Analysis of Conceptual Configurations in the Study of Inter-organizational Relationships. *Organization Studies*, 19(4), 549–583.
- Oliver, C. (1990). Determinants of Interorganizational Relationships: Integration and Future Directions. *Academy of Management Review*, 15(2), 241–265.
- Oliver, C. (1991). Strategic Responses to Institutional Processes. *The Academy of Management Review*, 16(1), 145–179.
- Pfeffer, J., & Nowak, P. (1976). Joint ventures and interorganizational interdependence. *Administrative Science Quarterly*, 21, 398–418.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Stanford Calif.: Stanford Business Books.
- Provan, K. (1984). Interorganizational Cooperation and Decision Making Autonomy in a Consortium Multihospital System. *The Academy of Management Review*, 9(3), 494–504.
- Provan, K., Fish, A., & Sydow, J. (2007). Interorganizational Networks at the Network Level: A Review of the Empirical Literature on Whole Networks. *Journal of Management*, 33(3), 479–516.
- Provan, K. G., & Kenis, P. (2007). Modes of Network Governance: Structure, Management, and Effectiveness. *Journal of Public Administration Research and Theory*, 18(2), 229–252. doi:10.1093/jopart/mum015
- Ripoll-Soler, C., & de-Miguel-Molina, M. (2013). Are mergers a win-win strategic model?: A content analysis of inter-institutional collaboration between higher education institutions. *Tertiary Education and Management*, 20(1), 44–56. doi:10.1080/13583883.2013.860187
- Rossignoli, C., & Ricciardi, F. (2015). *Inter-Organizational Relationships: Towards a Dynamic Model for Understanding Business Network Performance*. Contributions to Management Science. Cham: Springer International Publishing. Retrieved from <http://dx.doi.org/10.1007/978-3-319-11221-3>
- Rumbley, L., Altbach, P., & Reisberg, L. (2012). Internationalization within the higher education context. In D. Deardorff, H. de Wit, J. Heyl, & T. Adams (Eds.), *The SAGE handbook of international higher education* (pp. 3–27). Thousand Oaks, CA: Sage Publ.
- Rumbley, L. E., Helms, R., Peterson, P., & Altbach, P. (2014). Introduction. In L. E. Rumbley, R. Helms, P. Peterson, & P. Altbach (Eds.), *Global perspectives on higher education: volume 31. Global opportunities and challenges for higher education leaders. Briefs on key themes* (pp. 1–5). Rotterdam: Sense Publishers.
- Sağlam, G. (2013). Internationalisation and international networks. In A. Labi (Ed.), *Weaving the future of global partnerships. EAIE Conference Conversation Starter 2* (pp. 19–24). Amsterdam: EAIE.
- Sakamoto, R., & Chapman, D. W. (2011). Expanding Across Borders. The Growth of Cross-border Partnerships in Higher Education. In R. Sakamoto & D. W. Chapman (Eds.), *Cross-border Partnerships in Higher Education. Strategies and Issues* (pp. 3–16). New York: Routledge.
- Scott, P. (2000). Globalisation and Higher Education: Challenges for the 21st Century. *Journal of Studies in International Education*, 4(1), 3–10.
- Scott, W. R. (1995). *Institutions and organizations: Ideas, interests, and identities* (4. ed.). Los Angeles Calif. u.a.: Sage.
- Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options. *Political Research Quarterly*, 61(2), 294–308. doi:10.1177/1065912907313077

- Sensing, T. (2011). *Qualitative research: A multi-methods approach to projects for Doctor of Ministry theses*. Eugene, Or.: Wipf & Stock.
- Silverman, D. (2015). *Interpreting Qualitative Data*. Thousand Oaks, CA: Sage.
- Skodvin, O. (1999). Mergers in Higher Education - Success or Failure? *Tertiary Education and Management*, 5, 65–80.
- Slaughter, S., & Rhoades, G. (2004). *Academic capitalism and the new economy: Markets, state, and higher education*. Baltimore: The Johns Hopkins University Press.
- Smith, K. G., Carroll, J., & Ashford, S. J. (1995). Intra- and Interorganizational Cooperation: Toward a Research Agenda. *The Academy of Management Journal*, 38(1), 7–23.
- Stockley, D., & Wit, H. de. (2011). The Increasing Relevance of Institutional Networks. In H. d. Wit (Ed.), *Trends, issues and challenges in internationalisation of higher education* (pp. 45–58). Amsterdam: Centre for Applied Research on Economics & Management, School of Economics and Management of the Hogeschool van Amsterdam.
- Tadaki, M., & Tremewan, C. (2013). Reimagining internationalization in higher education: International consortia as a transformative space? *Studies in Higher Education*, 38(3), 367–387. doi:10.1080/03075079.2013.773219
- Teather, D. (Ed.). (2004a). *Consortia: International networking alliances of universities*. Carlton, Vic.: Melbourne University Press.
- Teather, D. (2004b). The Changing Context of Higher Education: Massification, Globalisation and Internationalisation. In D. Teather (Ed.), *Consortia. International networking alliances of universities* (pp. 8–27). Carlton, Vic.: Melbourne University Press.
- Teichler, U. (2009). Internationalisation of higher education: European experiences. *Asia Pacific Education Review*, 10(1), 93–106.
- Teixeira, P., Rocha, V., Biscaia, R., & Cardoso, M. F. (2014). Policy changes, marketisation trends and spatial dispersion in European higher education: Comparing public and private sectors. *Cambridge Journal of Regions, Economy and Society*, 7(2), 271–288. doi:10.1093/cjres/rst027
- The Technopolicy Network. (2014). *Boosting Academic Entrepreneurship: Joint regional and national strategies for universities, incubators and business partners*. Retrieved from <http://lifescience.pl/en/wp-content/uploads/2014/08/General-information.pdf>
- Todeva, E., & Knoke, D. (2005). Strategic Alliances & Models of Collaboration. *Management Decision*, 43(1), 123–148.
- TUHH. (n.d.). *Internationalisation of Hamburg University of Technology*.
- U-Multirank (2015). Retrieved from <http://www.umultirank.org/>
- University of Stavanger. (2013). *Strategy for the University of Stavanger 2013-2020*. Retrieved from http://www.uis.no/getfile.php/Om%20UiS/Strategy%20for%20the%20University%20of%20Stavanger%202013-2020_110814.pdf
- University of Stavanger. (2014). *Erasmus Policy Statement: Erasmus Charter for Higher Education 2014-2020*. Retrieved from <http://www.uis.no/getfile.php/Internasjonalt%20kontor/ERASMUS%2B/EPS%20UiS%202014-2020.pdf>
- University of Twente. (2015). *Ambition, Strategy and Implementation. 2020: Educating the Global Citizen*. Internationalization Vision. Retrieved from <https://www.utwente.nl/i-overleg/overig/20150422-internationaliseringsnota.pdf>
- Vaus, D. A. de. (2001). *Research design in social research* (1. publ). London u.a.: Sage.
- Vught, F. A. (1999). Innovative Universities. *Tertiary Education and Management*, 5, 347–354.
- Vught, F. A. & Jongbloed, B. (2013). *Higher Education and Research Funding: Some trends and their impact on the university*. Paper and Presentation for the Conference "De toekomst van de financiering van de

- wetenschap“, June 4, 2013. Erasmus Universiteit, Rotterdam. Retrieved from <http://doc.utwente.nl/89365/1/Higher%20Education%20and%20Research%20Funding%20EUR.pdf>
- Wächter, B. (2000). *Handbook of European Associations in Higher Education: A Practical Guide to Academic Networks in Europe and Beyond*. Bonn: Lemmens.
- Waterval, D. G. J., Frambach, J. M., Driessen, E. W., & Scherpbier, A. J. J. A. (2015). Copy but Not Paste: A Literature Review of Crossborder Curriculum Partnerships. *Journal of Studies in International Education*, 19(1), 65–85. doi:10.1177/1028315314533608
- Weick, K. (1967). Educational organizations as loosely coupled systems. *Administrative Science Quarterly*, 21, 1–9.
- Weifang, M. (1999). *Improving the effectiveness of higher education institutions through inter-university cooperation: the case of Peking University*. Working Document. Paris: International Institute for Educational Planning/UNESCO.
- Williams, P. (2012). *Collaboration in Public Policy and Practice: Perspectives on Boundary Spanners*. Bristol: Policy Press.
- Wit, H. de. (2001). *Internationalisation of Higher Education in the United States of America and Europe*. Academisch Proefschrift. Amsterdam: University of Amsterdam.
- Wit, H. de. (2002). *Internationalization of higher education in the United States of America and Europe: A historical, comparative, and conceptual analysis*. Greenwood studies in higher education. Westport, Conn.: Greenwood Press.
- Wit, H. de. (2004). Academic Alliances and Networks: A new internationalisation strategy in response to the globalisation of our societies. In D. Teather (Ed.), *Consortia. International networking alliances of universities* (pp. 28–48). Carlton, Vic.: Melbourne University Press.
- Wit, H. de (Ed.). (2009). *Measuring success in the internationalisation of higher education*. EAIE Occasional Paper 22. Amsterdam: EAIE.

Appendix

Appendix 1: Attempts of classifying cooperative arrangements between higher education institutions

Scholar (year)	Classification of cooperative arrangements between higher education institutions	Comment
Harman (1989)	Voluntary cooperation Consortia Federation Amalgamation through merger	Focuses on structure, refers to transfer of autonomy INTENSITY OF LINKAGES
Neave (1992)	Monodisciplinary linkages Exchange partnerships Network partnerships Multidisciplinary networks and consortia	Focuses on organisational complexity including number of participants and disciplines SIZE
Van Ginkel (1996)	Associations Inter-university cooperation projects University enterprise training partnerships Institutional networks	SCOPE & NATURE OF INTEGRATION
Wächter (2000)	Associations of HEIs Associations of associations from HE Associations composed of individual members Regional associations Associations with members from outside and inside HE	Broader perspective NATURE OF INTEGRATION
De Wit (2002)	Academic associations Associations as an organisation academics or administrators and/or their academic unit Arrangements of individual, administrative nature Institutional, multipurpose, management-based and leadership-driven associations Academic consortia Institutional networks	REACH/SCOPE

Appendix 2: Some European and global inter-university networks

Name	Member-ship	Funding year	Scope	Key activities / mission	Website
League of European Research Universities (LERU)	21	2002	European	influence policy in Europe and develop best practice through mutual exchange of experience	www.leru.org
The IDEA League	4	1997	European	re-establish Europe as a technological and scientific leader by bundling academic resources and knowledge	www.idea-league.org
European University Association (EUA)	850	1999	European	Higher education policy making in Europe, promoting networking opportunities, enhancing visibility of European universities	www.eua.be
International Alliance of Research Universities (IARU)	11	2006	Global	joint education initiatives, institutional joint networking, joint research on grand challenges	www.iaruni.org
Universitas 21	25	1997	Global	foster global citizenship and institutional innovation through joint research, student mobility and wider advocacy for internationalisation	www.universitas21.com
Worldwide Universities Network (WUN)	18	2000	Global	international research collaboration on issues of global significance	www.wun.ac.uk

Appendix 3: The ECIU member institutions, including country and year of accession

University	Country	Year of Accession
Full members		
Aalborg University	Denmark	Founding member
Autonomous University of Barcelona	Spain	Founding member
University of Aveiro	Portugal	Founding member
Dublin City University	Ireland	2011
Hamburg Technical University	Germany	Founding member
Kaunas University of Technology	Lithuania	2016
Lodz University of Technology	Poland	2011
Linköping University	Sweden	2004
University of Stavanger	Norway	2012
University of Twente	The Netherlands	Founding member
Associate members		
Monterrey Institute of Technology	Mexico	2001
Southern Federal University	Russia	2006

Appendix 4: The ECIU Working Groups (indicating their current state: either terminated or recognised as professional networking groups)

ECIU Working Groups	
PR & Marketing (terminated)	Career Guidance Services
Sustainable Campus	Network of HR Managers (terminated)
Regional Innovation (terminated)	EU Working Group
Student Mobility Group (terminated)	Socially Committed Universities
Teach Trans Legal	

Appendix 5: The interviewed ECIU local coordinators of the case study universities

Case study university	Main Position	Local Coordinator since
Autonomous University of Barcelona (Spain)	Rector of International Relations	7 years
Dublin City University (Ireland)	Sustainability Manager	6-9 months
Hamburg University of Technology (Germany)	Executive Director for International Affairs	3 years
University of Stavanger (Norway)	Head of the International Office (currently interim director for academic affairs)	1 year
University of Twente (Netherlands)	Head of Internationalisation	7 years

Appendix 6: Additional contact person indicating the type of data collection, the position of the interviewee within the ECIU and the interviewee's home institution

Type	Position (within the ECIU)	University
Pers.	ECIU Secretary General	ECIU
E-Mail Interrogation	Leader of Sustainable Campus Working Group	Tecnologico de Monterrey
	Leader Tech Trans Legal Working Group	Aalborg University
	Leader EU Working Group	University of Twente
	Vice-Rector for Research	Lodz University of Technology
	Deputy executive administrator for research	Autonomous University of Barcelona
	Chair of ECIU Steering Committee on Entrepreneurship and Societal Impact of Research	University of Stavanger
	UAB's representative in the Steering Committee on Innovation in Teaching and Learning	Autonomous University of Barcelona
	UT's representative in the Steering Committee on Innovation in Teaching and Learning	University of Twente
	DCU's representative in the Steering Committee on Entrepreneurship and Societal Impact of Research	Dublin City University
Telephone conversations	Local Coordinator, Leader Career Guidance Service Working Group & of Network of HR Managers	Aalborg University
	Local Coordinator, leader of PR & Marketing Working Group	Linköping University
	Local Coordinator	University of Strathclyde
	Local Coordinator	Lodz University of Technology

Appendix 7: Analysed documents

	Strategy	Annual Report	Erasmus Policy Statement
Hamburg University of Technology	x	x	
University of Twente	x	x	x
University of Stavanger	x	x	x
Dublin City University	x	x	
Autonomous University of Barcelona (Spain)		x	x

x = available documentation

empty field = documentation was not available

Appendix 8: The European ECIU member institutions and their main characteristics: **Type** : comprehensive (C), technical (T); **Size**: Total number of students (small (s), medium (m), large (l), very large (vl); **Student/staff ratio**: Number of students per academic staff (fte); **Reputation**: THE World University Ranking 2015; **Age**: Reference 2015; **International student**: Number of foreign degree seeking students; **International joint publications**: Number of international joint publications relative to the total number of research publications; **Accession year**: x= founding member (1997). **Source**: U-Multirank, 2015; websites of the universities.

University	Type	Size	Student/ Staff ratio	Reputation	Budget/ student	Age	Intl. Student	Intl. joint publ.	Accession year
Aalborg University (Denmark)	C	20,059 (m)	9,94	351-400	18,029€	41	Low	54.89%	x
Autonomous University of Barcelona (Spain)	C	30,513 (vl)	11.56	262-250	7,632€	47	Low	43.69%	x
Dublin City University (Ireland)	C	12,280 (s)	21.09	>400	10,933€	40	High	53.69%	2011
Hamburg University of Technology (Germany)	T	6,989 (s)	17,96	>400	17,969€	37	High	40.23%	x
Kaunas University of Technology (Lithuania)	T	10,856 (s)	12,18	>400	6043€	93	Medium	18.42%	2016
Linköping University (Sweden)	C	28,409 (vl)	18.76	351-400	12,932€	46	Low	45.79%	2004
Lodz University of Technology (Poland)	T	20,400 (l)	15.08	>400	3005€	70	Low	22.59%	2011
University of Aveiro (Portugal)	T	10,596 (s)	17.63	>400	8,588€	42	Medium	50.14%	x
University of Stavanger (Norway)	C	10,094 (s)	14,42	>400	11,582€	10	Medium	47.95%	2012
University of Twente (Netherlands)	T	9,614 (s)	6,3	201-225	18,029€	54	?	47.75%	x

Appendix 9: Key figures of the case study universities which were used for the analysis of this study
(Source: U-Multirank 2015)

Indicator	External Research Income	Co- publications with Industrial Partners	spin-offs (per 1000fte academic staff)	regional joint publications
Autonomous University of Barcelona	20.94	4.881%	3.31	39.524%
Dublin City University	123.62	5.173%	9.51	24.004%
Hamburg University of Technology	185.72	10.01%	11.97	15.857%
University of Stavanger	10.91	6.731%	1.27	5.968%
University of Twente	145.33	8.146%	10.75	7.264%

Appendix 10: Interview guideline for the interviews with the case study universities' local coordinators.

Interview Guide ECIU Local Coordinators

Below are the general guidelines for the interviews. The interviews are conducted in a semi-structured manner.

University	
Respondent	
Position	ECIU local Coordinator &
Date, Duration	
Place	
Comments	
Name Audio File	

Introduction

1. Researcher introduces herself, tells about the background of the research and gets the participant's consent to record the interview
2. Introduction of the respondent: Could you please briefly introduce yourself and tell me about your formal task as local coordinator of the ECIU?
 - 2.1. For how long have you been local ECIU coordinator?
 - 2.2. You are also *POSITION*, what proportion of your work do you spend on ECIU related tasks?

Network Objectives

3. What are the specific objectives of the University of Twente towards the ECIU? What does your institution aim at? Why is your institution part of the ECIU?
 - 3.1. You said you aim at *XX*. What exactly does your institution aim to achieve through that? (e.g., increasing visibility abroad -> in a specific region?) What exactly do you mean by *XX* (e.g., internationalise, becoming more innovative)?
 - 3.2. You did not mention *XX*. Does your institution also aim at objectives in the field of *XX*? (I can see in the *DOCUMENT* that the *UNIVERSITY* aims at *XX* by engaging in the ECIU. Could you elaborate on that?)
 - 3.3. You mentioned several objectives of the *UNIVERSITY* towards their engagement in the ECIU today. These were *XX*, *XX* and *XX*. Is one / some of these objectives more important than others? Which objectives is the most important? Can you rank them according to the importance?
4. Are these objectives the official and formally decided objectives of your university for the ECIU network? How are they formalised (e.g., written down in strategic document)?

5. Do you have the impression that the objectives are known among the university staff / academics?
6. Do you have the impression that the formal goals are actually pursued with the membership?

Network Activities

7. In what kind of ECIU activities is your institution involved in? What does your institution do within the ECIU?
 - 7.1. Which of these activities do you think is most important for your institution? Why?
 - 7.2. Are some of these activities prescribed by the ECIU network? Does your institution participate in all of these activities voluntarily?
 - 7.3. Question about frequency of the activity. E.g., offer joint degree programmes -> how many joint degree programmes with ECIU partner do you offer relative to total number of joint degree programmes?
 - 7.4. Are these activities especially related to your ECIU participation or would you do it anyway?
Would your institution also have done these activities without the ECIU?
 - 7.5. Are there any other ECIU activities you can think of? E.g., in the field of...
8. Are there any ECIU related activities which you planned / tried to initiate but which were not realised?
 - 8.1. What are the most important factors that kept your institution from realizing this activity?
9. Do you have an overview of the ECIU activities performed by your institution?
10. Would you say that these ECIU related activities are targeted towards your ECIU objectives? If not, why?
11. Do you perform more activities with some ECIU partners than with others?

Thank you!

12. Is there anything you would like to add?
 13. Would it be ok if I contact you again if I have further questions?
 14. Would it be a problem if your institution was mentioned in my master's thesis?
 15. Would you like to be informed on the results of the study?
-