Explaining Variation in Public Policy Implementation: A Network Analysis of EU Cohesion policy in Scotland

Dorine Boumans

School of Government and Public Policy

European Policies Research Centre

Strathclyde University

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This thesis is the result of the author's original research. It has been composed by the author and has not been previously submitted for examination which has led to the award of a degree.'

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Abstract

Networks are increasingly used by policy practitioners to implement public policy. However, evidence that network approaches to implementation are actually beneficial for policy performance is inconclusive. Only recently studies incorporate Social Network Analysis, allowing for the inclusion of specific structural network conditions and their relationship for performance. This research contributes to this growing area of study by exploring the relationship between network position and the performance of projects implemented under European Union Cohesion policy, the EU's regional policy instrument. A mixed methods approach is adopted, including quantitative analysis of all the projects and their performance - financial and physical, and semi-structured interviews. The conclusion is that the inclusion of more actors is not automatically beneficial for performance. Instead the research identifies specific conditions under which organisational actors can improve the probability of better performance.

Summary

This research analyses the relationship between inter-organisational networks and public policy performance. Networks are increasingly used by policy practitioners to implement public policy. There are arguments in academic and practitioner debates that argue that network-approaches to implementation are more effective than models based on centralised or hierarchical principles, in achieving public policy outcomes. These arguments are prominent in regional economic development policies, where cooperation across levels of public administration and between public, private and civil society actors is increasingly emphasised. However, evidence that network approaches to implementation are actually beneficial for policy performance is inconclusive. Research on public policy implementation has only recently started to incorporate Social Network Analysis (SNA) into their studies, facilitating analyses focused on the network aspect of implementation. In particular, SNA allows for the analysis of specific structural network conditions and their relationship to performance.

This research contributes to this growing area of study by exploring the relationship between network position and the performance of projects implemented under European Union Cohesion policy, the EU's regional policy instrument.

By drawing on Social Network Analysis (SNA) and Policy Network Analysis (PNA) the main research question and related hypotheses are developed. The thesis takes Cohesion policy projects and their managers and examines the impact of their network activity, indirect access to resources, and their embeddedness, on the performance of EU cohesion projects. It also compares the influence of different network structures on two different types of performance - financial and physical performance. The research follows a mixed-methods research strategy. Through the inclusion of semi-structured interviews an in-depth knowledge of the rationale for and barriers to network-based implementation approaches in Cohesion policy is gained. The inclusion of multivariate regression analysis provides insights into the overall relationship between network position and performance.

The results of this research identify specific conditions under which organisational actors can improve the probability of better performance, making theoretical contributions to the field of policy network analysis as well as policy recommendations to the implementation of

Cohesion policy in Scotland. The results indicate that the inclusion of more actors in a project is not automatically beneficial for performance. Indeed, adding more partners to a project can have a negative effect on performance. However, beyond this, the research identifies relationships between different aspects of network activity and different types of performance, emphasising the importance of network relations in performance, particularly the leading role of key actors and their connections to the network. This finding is also confirmed by the insights from the interviews, as they emphasise the role of the Lead Applicants and their networks on compliance with regulations attached to the implementation of the policy. For Cohesion policy projects, it is important to include partners that are central in the network, extending access to information and resources to the broader network involved. This is found to be important in the financial performance of projects i.e. the extent to which they effectively spend the funding allocated to the project. For physical performance, it is significant that the organisations are embedded in networks and have experience in working together. Performance of a project is enhanced when the implementation involves a group of organisations that implement a number of projects together. The extent of having connections outside this small group of organisations actually has a negative influence on physical performance, indicating the specific conditions under which different types of performance proliferate.

In some respects, these results are in contrast with literature that highlights the general benefits of network-based implementation for policy performance. However, they support the findings of research that emphasises the role a network manager can play in securing higher performance or better implementation. Furthermore a distinction can be made between financial and physical performance. This research found that having connections that reach a wider area of the network, and connections that act as a bridge between certain parts of a network are beneficial to financial performance. These indirect ties are however unsuccessful when it comes to physical performance. In relation to physical performance the embeddedness, and thus the strength and quality of the network relations are positively associated with performance. Supporting the literature that focuses on the cohesiveness and embeddedness of network relations. Overall it can be concluded that working in partnership and creating a collaborative network is beneficial to the overall performance of policy implementation. However, depending on the type of performance under scrutiny different network positions can have a positive effect.

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Acronyms and Abbreviations

AIC - Akaike Information Criterion
CPP - Community Planning Partnerships
EAGGF - European Agricultural Guidance and Guarantee Fund
EPRC - European Policies Research Centre
ERDF - European Regional Development Fund
EUROSYS - Database of the Scottish government for project monitoring
ESF - European Social Fund
ESIF - European Structural and Investment Funds
EU - European Union
FIFG - Financial Instrument for Fisheries Guidance
GVA - Gross Value Added
GDHI - Gross Disposable Household Income
HIPP - Highlands & Islands Structural Funds Partnership Ltd
H&I - Highlands and Islands
IAB - Intermediary Administrative Bodies
LEADER - Liaison Entre Actions de Développement de l'Économie Rurale
LUPS - Lowlands and Uplands
MA - Managing Authority
MC - Monitoring Committee
MLG - Multi-Level Governance
NGOs - Non-governmental Organisations
NHS - National Health Service
NSRF - National Strategic Reference Framework
NUTS 3 - The Nomenclature of Territorial Units for Statistics
OP - Operational Programme
PMEs - Programme Management Executives
PNA - Policy Network Analysis
RTD - Research Technology and Development
RTDI - Research Technology Development and Investment
SDA - Scottish Development Agency
SDB - Strategic Delivery Body
SG - Scottish Government
SIPs - Social Inclusion Partnerships
SNA - Social Network Analysis
SMEs - Small and Medium Enterprises
UK - United Kingdom
UHI - University of the Highlands and Islands

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1. Introduction

Networks are increasingly considered by academics and policy practitioners to be important for effective and efficient implementation of public policy. This approach to policy implementation is often contrasted with more centrally organised implementation structures (Feiock and Scholz 2009; Ostrom 1994). Currently, these collaborative approaches to implementation are becoming more prominent, as it is recognised that the success of implementation is dependent on the cooperation of multiple organisations. The use of networks of organisations and actors surrounding a specific policy provide a structure in which public-, private-, and third sector interests deliberate, design and implement policy (Park and Rethemeyer 2014; Peters 2014). Through the inclusion of different stakeholders, the design of the policy is arguably better informed, it ensures the participation of appropriate organisations and beneficiaries, which in turn increases the likelihood of long-term sustainable commitment to the policy or intervention. By including different organisations extra resources from different sources can be drawn in, to extend the activity of the policy (Marks and Hooghe 2004; Perraton and Wells 2004; Weingast 1995; Shrestha 2013).

Yet, debate on the efficacy of these approaches in terms of public policy performance is ongoing. Some critics stress the retained powers of governments and the prominence of top-down implementation, even where policy networks operate. These studies note that network-based approaches complicate the process of implementation, creating additional costs, coordination challenges, overlaps and duplication (Christensen and Lægreid 2007; Lovering 1999). These factors undermine, rather than strengthen, policy performance.

Grounded in this debate, this thesis explores the relationship between network-based models of public policy delivery and policy performance. Is working in partnership, and thus creating a network for implementation useful for the outcome of the policy? Or, rather, does it only contribute to duplication of efforts and is there any benefit in including increasing number of organisations into the implementation phase? While accepting the general premise that implementation has become more multi-organisational, some public functions remain managed by a single organisation (Peters 2014). It can be assumed that not all policy fields benefit equally from a complex multi-organisational network. This research tries to contribute to this debate by analysing the variance in networks and policy performance.

These questions are important from a theoretical and a practitioner's perspective. First, because there is a on going academic debate about how and why policy implementation has various degrees of success (O'Toole 2004). This debate has been underway since the 1980s (Pressman and Wildavsky 1984), but it remains pertinent (Hupe 2014). Academic research continues to explore the relationship between network-based implementation and policy performance, assessing a range of variables that can explain impact and causality. Second, from a practitioner's perspective, the debate about collaborative networks for the implementation of public policy is sharpened by scarcity of public policy budgets. Due to the current context of crisis, austerity and constraints on public spending, the costs of implementation are under close scrutiny. The rationalisation or streamlining of public administration, including policy implementation arrangements is under discussion or underway across European governments, raising issues of the cost-effectiveness of network-based approaches. This has sparked a strong desire to find out 'what works' to implement policy more efficiently.

The evidence base to inform this debate is limited. Recent studies on implementation research and policy design have focused on the interactions between the state and different stakeholders. This resulted in academic debate on the range of explanatory variables for explaining variation in performance. A variety of factors could potentially influence policy implementation and performance (See section 2.1). Most importantly, variables that capture the structural features of networks have only recently been included in studies analysing the effects of policy networks (See section 2.1.3). This demonstrates a significant gap in the literature.

Public policy scholars, aiming to fill this evidence gap, have started to modify their analytical approach, drawing on methodologies developed in other fields to analyse network structures in the design and implementation of policy. This includes research based on Policy Network Analysis (PNA). PNA is a research approach that focuses on the analysis of network structures that initiate, implement or evaluate policy. A recent theoretical and methodological shift within PNA has been to incorporate Social Network Analysis (SNA) in studies that examine collaborative approaches and networks. SNA refers to the analysis and methods used for studying relations, structures, and interaction patterns. Unlike conventional statistical analysis, SNA allows researchers to examine the interactions of units of analysis. Within a policy network context, SNA is increasingly used to examine a wide range of management and policy issues, including emergency management (Kapucu 2006), education performance (Schalk, Torenvlied, and Allen 2010; Akkerman, Torenvlied, and Schalk 2012), transportation policy (Henry, Lubell, and McCoy 2011; Weir, Rongerude, and Ansell 2009), environmental management (Jasny 2012; Robins, Bates, and Pattison 2011; Weible 2011), network performance (Kapucu and Demiroz 2011), health and social service delivery (Milward et al. 2009; Provan and Huang 2012; Provan, Isett, and Milward 2004;

Valente 2010) and non-profit development and growth (Galaskiewicz, Bielefeld, and Dowell 2006; Isett and Provan 2005) and also regional economic development (I.-W. Lee, Feiock, and Lee 2012). By combining analyses of different components of policy networks with a more structural and quantitative analysis, these studies have improved the quality and methodological coherence of PNA-based approaches.

Although research on policy networks and the inclusion of SNA within these analyses has grown in recent years, the evidence base is still developing. Recent research has found evidence suggesting that there is added value in using networks in collaborative policy making and implementation (Agranoff and McGuire 2003; Berardo 2009; Kimberley R. Isett et al. 2011; Kapucu, Hu, and Khosa 2014; Ingold and Varone 2012). However, currently there is limited research that addresses the direct links between policy performance and network-based implementation approaches (Kim 2012; Schalk, Torenvlied, and Allen 2010; L. O'Toole and Meier 2011; Akkerman, Torenvlied, and Schalk 2012). There is no consensus on the impact of network-based approaches on public policy performance, nor on which features of networking play the most important roles. Studies have emphasised different aspects of network-based approaches as potential predictors of performance. These include: the extent of network density and direct network activity (Berardo 2009; L. J. O'Toole and Meier 2004; Torenvlied and Akkerman 2014); the scope of indirect access to knowledge and other resources from elsewhere in the policy arena (Shrestha 2013; Burt 2001; Uzzi 1996); and, embeddedness, characterised by long-term cooperation, communication and trust among partners (Schalk, Torenvlied, and Allen 2010; Shrestha 2013; Shrestha and Feiock 2011).

This thesis aims to build on this growing body of research, contributing to literature on policy networks by expanding the evidence base on the effectiveness of different features of network structure for policy performance. This research will test the three fundamental

propositions of networks and policy performance highlighted in the literature: network activity, indirect access to resources, and embeddedness. By using SNA it is possible to differentiate between these various network qualities. In addition, this research will also distinguish between two different types of policy performance: financial and physical.

More specifically, the main question posed in the research is whether network-based implementation approaches improve the performance of policy and, if so, how?

To answer this question the research tests three hypotheses:

1. More direct connections between project partners lead to higher project performance.
2. More indirect connections lead to higher project performance.
3. Stronger embeddedness among project partners lead to higher project performance.

The assessment of policy performance is challenging and demands a refined approach. There are multiple aspects to policy performance and it can be expected that different network qualities impact differently on these aspects. By focusing on two types of performance, financial and physical[1], this research is able to compare and contrast the different network features within a single embedded case study approach.

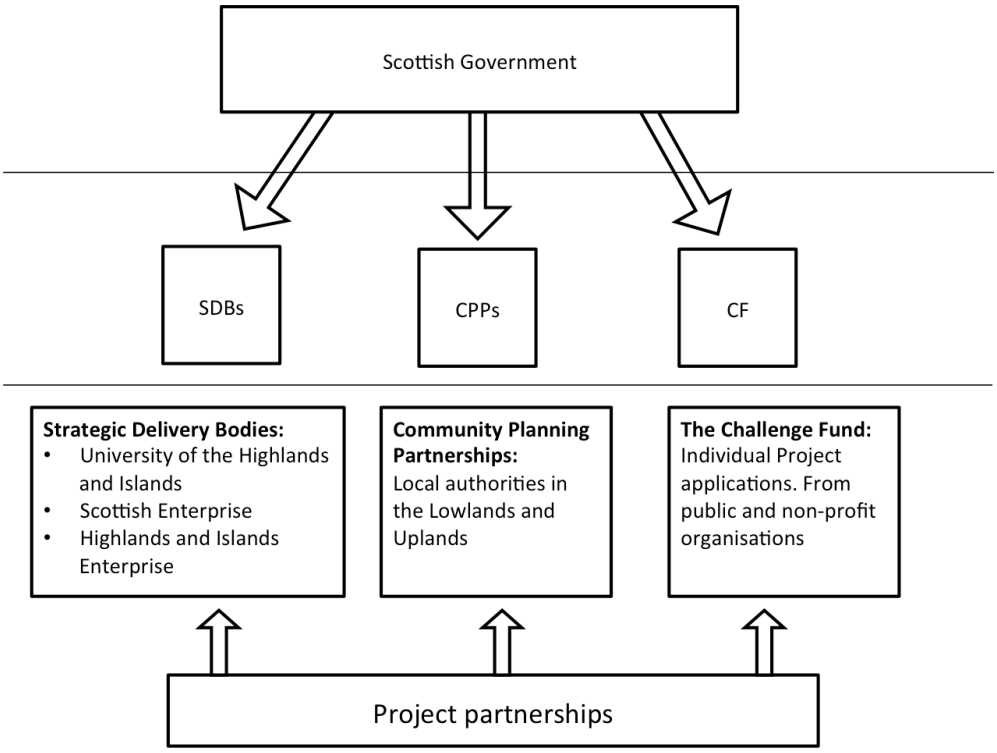
The embedded case study approach used for this research covers the projects implemented under EU Cohesion policy in Scotland. Cohesion policy, as a public policy where network-based approaches are formalised through official partnership requirements, provides an excellent case study for the analysis of the effect of these network relations on public policy performance. Scotland offers a relevant economic and institutional context, as new economic networks and partnerships of economic and public actors had to be reoriented or

[1] The term 'physical' performance is used in this research to describe the outputs of the policy. This research uses the term physical performance rather than outputs to avoid confusion with outputs under Cohesion policy. Outputs or outcomes under Cohesion policy are the effects of the policy.

replaced due to industrial restructuring. In addition, successive governmental reforms since the 1980s prompted reorganisation of the established hierarchy of government support to economic development, shifting towards a policy model with more focus on the pooling of resources and endogenous growth. Cohesion policy strengthened these processes. Network approaches to implementation are formalised in Cohesion policy implementation in Scotland strengthened these processes (Still 2010).

During the 2007-2013 period, on which this study focuses, the implementation of EU Cohesion policy in Scotland includes different mechanisms for the allocation of funding (see figure 1.1). The allocated funding to the Scottish Government is subsequently divided into three different implementation mechanisms, the Strategic Delivery Bodies (SDBs), the Community Planning Partnerships (CPPs) and the Challenge Fund. Within the three mechanisms project proposals can be submitted.

Figure 1.1 Implementation mechanisms for EU Cohesion policy in Scotland



This research focuses on project partnership and the overall network for implementation. This is in contrast with studies that study the partnership principle on a more strategic level, for example, partnership is also evident in programming preparation (see section 4.2.1) and in Monitoring Committees (see section 4.2.2). By taking the focus on project implementation, the projects under each mechanism are included and a specific focus on how these implementation mechanisms influence the particular position of a project within the overall network and the relationship to project performance becomes clear.

Scotland has a long history with EU Cohesion policy and different mechanisms have been in place for the implementation of the policy. The combination of the current three mechanisms offer an interesting approach to implementation. This makes Scotland a robust case study for analysis of network-based forms of implementation.

The thesis is structured into six parts. The first chapter sets out the theoretical framework used to guide the empirical analysis in this thesis. It sets out the three cycles of PNA and the concepts and definitions used to describe and analyse networks for policy design and implementation. It incorporates scholarship from regional development and Cohesion policy to extend the theoretical framework and to make it applicable to the case study used in this research. In addition, by adding SNA this chapter establishes the basic research question and the accompanying three research hypotheses.

Chapter two sets out the research methodology. The combination of statistical analysis with a qualitative analysis of semi-structured interviews offers a new and innovative methodological approach to analyse the implementation of Cohesion policy. This chapter provides a discussion of the approach taken in operationalising the different variables

included in the analysis as well as the strategy used to model the multiple regression analyses.

Chapter three outlines the case study selected for the research by exploring the changing context of cooperation in Cohesion policy in Scotland. It begins with setting out the historical developments in Scotland that influenced the focus on cooperation for the implementation of policy, especially Cohesion policy. This is followed by an examination of the changes in the official requirements in Cohesion policy referring to the inclusion of partners in policy design and implementation. The chapter charts how both the Scottish historical institutional setting and the developments in Cohesion policy have provided a relevant framework for analysing the relationship between network-based approaches to implementation and policy performance. This chapter includes the findings of the semi-structured interviews to provide qualitative insights on this relationship.

Chapter four presents the main empirical results of the research, focusing on the outcomes of the quantitative analyses. First, this involves a detailed description of the control variables as well as the variation of the two dependent variables; financial and physical performance. Second, two multiple regressions are modelled to test the three hypotheses, that assume a beneficial relationship between three network positions and financial and physical performance. Also an analysis of the effect-size of the significant variables is included.

The thesis concludes with a discussion of the main findings from the qualitative and quantitative research in order to directly address the research question and answer the hypotheses. It synthesizes the findings from the statistical analysis with the insights gathered from the semi-structured interviews. In addition, this chapter sets the findings within the broader theoretical literature and provides policy recommendations across two different

levels; Cohesion policy and specific recommendations relating to its implementation in Scotland.

2. Theoretical Framework: PNA and Regional policy analysis

Since the 1970s, the concept of policy networks - clusters of actors, each with an interest, or 'stake' in a given policy sector and the capacity to help determine policy success or failure - has become prominent in public sector discourses and academic debate (Agranoff and McGuire 2003; Lubell et al. 2012; Rhodes 1996; Schneider et al. 2003). This network concept emerged out of frustration with traditional frameworks such as pluralism and corporatism (Jordan and Schubert 1992). The network framework was developed and refined, as a way to capture approaches to policy design and delivery that are based on relations involving mutuality and interdependence, as opposed to hierarchy and independence. Two points of departure are considered to mark the conceptual emergence of policy networks. Heclo (1978) introduced the idea of 'issue networks' as modes of representation for stakeholder's interests in the United States. In the United Kingdom, the interactions between the public and private sector were characterised as 'policy communities' (Dunleavy and Rhodes 1990; Marsh and Rhodes 1992; Rhodes 1996). These observations of interactions between public and private actors signal the starting point of the policy network literature. Since then, linkages within and between organisations have become an increasingly prominent focus of public policy research. A body of literature has developed, producing a variety of concepts, typologies, and models, that aim to capture the structures, interactions, and outcomes of interactions between the state and interest groups. However, there is no agreement on the extent to which policy networks are beneficial to policy performance.

The turn towards policy networks emerged from debates on the utility of existing theories used for describing the interaction between public, private and third sector bodies for policy

design and implementation. According to Jordan and Schubert (1992) pluralism and corporatism were used to capture the interactions between interest groups and government. Pluralism holds that there is competition between interest groups and the state. In contrast, corporatism argues that there is cooperation between the stakeholders interested in a specific policy. During the 1970s different scholars started to describe case studies of policy making that did not fit the clear separation between pluralism and corporatism. Indeed, Jordan and Schubert point out that both these theories are naive and lack empirical relevance and logical consistency. Organisations involved in relations with political authorities inevitably utilise both strategies, cooperation and competition. For example, competition between firms or between employers or employees co-exists with a consensus on a general political goal. Similar, the consensus that underpins corporatism cannot remove all tensions between different organisations. Thus, out of disagreement with the established theories and the inability to separate pluralism and corporatism, different scholars came up with different labels that incorporate network-based approaches: group sub-government (Ripley and Franklin, 1984; Freeman 1965), Corporate pluralism (Heisler 1979, Rokkan 1966), Iron triangles, Clientelism, Sectoral- or Mesocorporatism, Issue networks, issue-expert networks, policy communities, and the negotiated economy.

Despite the success in diffusing the policy network notion, there was no immediate development of a fully-fledged network theory. Instead, Kenis and Schneider (1991) point out that the network notion was used as a metaphor to shed light on some specific empirical observations. Due to the increased importance of organised social collectives, increased societal complexity and growing interdependence between many actors, as well as the sectoralisation and functional differentiation of policy areas, and the blurring boundaries

between public and private actors[2], tasks could no longer be fulfilled without the cooperation of private organisations. This increased interdependence and complexity of social and political affairs led to the growing importance of access to information and the coordination and control of political and social affairs. In practice, networks were employed, and studies focused on their description, but there was no development of a theory on the role of networks in policy implementation.

This empirical description of case studies together with the development of a more structural approach, in the social sciences in general, led to new conceptual and theoretical developments, in political sciences and in policy analysis in particular. A number of social scientists began to apply mathematics to the formalisation and analysis of relational configurations. The most important methods were graph theory, matrix algebra, multidimensional scaling, cluster analysis and block modelling. Kenis and Schneider (1991) conclude that these methodological tools comprise great potential for policy research, which has not been yet systematically and comprehensively explored. "The tools are there but the community of craftsman is still very small" (p. 40).

Recently, the inclusion of these new mathematical methodologies in social sciences research has expanded. In particular, the inclusion of SNA, the strategy for analysing social structure through the use of network or graph theory, in policy analysis is increasing. The benefit of this is that it this helps to assess and explain relational variables in policy networks. Current reviews (Kapucu, Hu, and Khosa 2014; Kimberley R. Isett et al. 2011) show the wide range of SNA applications, but also acknowledge that more studies can focus on mixed-methods

[2] A full description of these changes is outside the scope of this research, for more information see Kenis and Schneider (1991).

research designs, and the intersections of policy networks, network governance and collaborative networks. This shows the increasing usage of SNA in policy network analysis.

Research in regional development has increasingly analysed the role of networks in place for the implementation of economic development policies, but the application of SNA remains limited. There has been considerable research focusing on the inclusion of different actors in the design and delivery of regional policy, and how this has affected the role of different levels of public administration as well as non-state actors within the policy process. However, these studies omit the structural analysis of networks.

In the regional policy literature, the broader debate focuses on the role and benefits of networks in policy design and implementation. On the one hand, there are arguments supporting the role of partnership-based approaches in improving the efficiency of regional development policies. According to its proponents, the efficient implementation of regional policy priorities is facilitated by partnership working as this informs the design of the policy, confirms the participation of appropriate stakeholders and beneficiaries in the implementation process and increases the likelihood of long-term, sustainable commitment to the policy intervention (Van Waarden 1992; Kenis and Schneider 1991). Moreover, it is argued that network approaches can ease the administrative burden of central policy-making units, improving efficiency (Scharpf 1994; Feiock 2004; Ostrom 1990). However, this argument is contested. Some research is critical of the importance accorded to networks in regional policy and questions its role in improving efficiency. Are networks approaches strong enough to supplant traditional, hierarchical policy processes? Do they complicate the process and make it more diffuse by including a broad range of actors and structures? In the current context of fiscal constraint, does the inclusion of a range of partners add to the costs

of administering policy? All of these issues relate to the overall efficiency of policy implementation (Chardas 2014; Wostner 2008).

These regional policy issues and debates, are equally prominent within Cohesion policy. Cohesion policy is the main instrument of the European Union for tackling the significant economic, social and territorial disparities between Europe's regions. Its main financial instrument, the European Structural and Investment Funds (ESIF), are implemented in co-operation between the European Commission, the Member States, regional and local actors. This Multi-level governance (MLG) approach, as well as the prominence of the 'partnership principle', (see section 4.2) makes this policy an ideal case for the analysis of network-approaches and their relationship with efficient policy design and implementation.

Formally, the partnership principle as an instrument in European Cohesion policy is "the requirement that decisions over the spending of funds are made collaboratively by a mix of state actors from different territorial levels – supranational, national and subnational – alongside non-state actors" (Bache 2010, 58). The partnership principle is a defining feature of Cohesion policy and it has been one of the fundamental principles underpinning the policy since its landmark reform of 1988 (alongside multiannual programming, additionality, and concentration) (Polverari and Michie 2009). Indeed, the formalisation of a network approach to implementation, due to the partnership principle, within Cohesion policy over the past decades has been credited with contributing substantially to the prominence of partnership in regional policy as a whole (Bache 2010; Wishlade, Yuill, and Mendez 2003).

This chapter sets out the theoretical context, covering issues in the broader literature on network-based approaches to public policy design and delivery as well as points specific to regional policy and Cohesion policy. First, the theoretical developments within policy

network analysis are outlined. Second, studies that look at regional economic development and Cohesion policy with a focus on networks are discussed. Third, based on the theory of networks and the literature review of regional development and Cohesion policy, this chapter frames the overall research question as well as testable hypotheses.

2.1 Policy network analysis (PNA)

Dassen (2010) introduced an analytical structure to assess the developments and critiques of policy network research, structuring the literature in three cycles. Policy network literature was first introduced in the 1970s and 1980s as a new framework for describing and assessing the activities of private organisations, interest groups and lobby intermediation platforms (Dunleavy and Rhodes 1990; Heclo 1978). Since then, the literature has developed significantly (Kimberley R. Isett et al. 2011; Blanco, Lowndes, and Pratchett 2011; Kapucu, Hu, and Khosa 2014; Lecy, Mergel, and Schmitz 2012). Table 2.1 shows the cycles including the different strands within them. The aim of this section is to introduce the main developments in the first two cycles before turning to the third cycle, where SNA methods are combined with PNA.

In the first cycle, studies discussed whether policy networks were solely a heuristic tool, or if they went beyond this and were actually a form of governance (Börzel 1998; Heclo 1978; Rhodes and Rhodes 1997). The second cycle argued that networks could be employed by governments for more effective and innovative policy making, fitting firmly within the broader New Public Management debate (Kickert, Klijn, and Koppenjan 1997; Klijn, Steijn, and Edelenbos 2010; Klijn and Koppenjan 2012). In the third cycle, PNA is combined with SNA (Berardo 2009; Berardo and Scholz 2010; Lubell et al. 2012; Schalk, Torenvlied, and Allen 2010; Scholz, Berardo, and Kile 2008; Shrestha 2013; Torenvlied and Akkerman 2014). It is this last development, combining SNA with PNA, which provides the theoretical context

of this research and it is the main focus of this review of the literature. There are different strands in this third cycle, but they do have one common point of departure: network structures are conceptualized as a set of compositional and relational variables. These can be applied to studies of policy implementation focussing on the networks employed for the delivery of public policy, and exploring their relationship with performance.

Table 2.1 The three cycles in PNA

Cycle	Scholars	Key themes
1st Cycle: Networks as a heuristic tool	Atkinson & Coleman 1989; Marsh & Rhodes 1988, 1992; Richardson & Jordan 1979; Van Waarden 1992	Interest mediation groups- changed relations between state and interest groups
	Kenis & Schneider 1991; Mayntz 19997; Scharpf 1978	Networks as a new mode of governance, next to markets and hierarchies
2nd Cycle: Network Management	Kickert et al, 1997; Klijn & Edelenbos 2007; Koppenjan & Klijn 2004; Sorenson & Torfing 2007; O'Toole & Meier, 2004).	Network management for the more effective and efficient implementation of policy
3rd Cycle: Combining PNA with SNA	Kalfagianni 2006; Sandstrom 2008; John & Cole 1998	Networks for policy formulation
	Shrestha 2012; Berardo 2009; Freiock & Scholz 2009;	Networks for policy implementation

Source: author's own elaboration.

2.1.1 Cycle 1: Interest mediation or network governance

The first cycle and starting point of the policy network literature developed primarily around a single debate: whether policy networks are merely a heuristic tool to describe the specifics of interactions between the public and private sector, or are real and existing structures that affect policy processes (Börzel 1998; Thatcher 1998; Thompson and Pforr 2005). The first strand - the interest mediation strand - of the literature argued that the concept of the 'policy network' was useful as an analytical tool to explore the interactions between a variety of stakeholders. It mainly focused on the identification of several distinct dimensions

along which policy networks may vary (Heclo 1978; Rhodes 1996). The second strand - networks as a new mode of governance strand - argued that the concept of 'policy network' is more than just a useful framework for analysis. Instead, this strand argued that policy networks signalled a general change from government to governance, conceptualising policy networks as a mode of governance distinct from hierarchies and markets (Scharpf 1994). Both strands provided insights into different characteristics of networks that are still included in current analyses of networks.

From an interest intermediation perspective, the policy network is conceived as a meso-level concept. The concept is applied as a generic, overarching framework for the analysis of all kinds of public-private interactions, but in particular relationships between various interest groups and the state. In the United States, Heclo (1978) developed the concept of 'issue networks' to describe the interactions between the state and industry. Heclo argued that the existing literature failed to denote specifics of the existing patterns of relations between industry and government. Rather than being characterised by closure and segmentation, 'issue networks' displayed fragmentation and openness (Van Waarden 1992; Heclo 1978). At the same time in the United Kingdom, a rather different type of state-industry interaction was observed. The term 'policy community' was coined to describe the policy process taking place between inter-dependent actors in segmented sub systems (Marsh and Rhodes 1992; Rhodes 1996). Rhodes describes the interactions between government and a wide variety of interest groups in different policy sectors in the UK, characterising these interactions as policy networks. Similar typologies of policy networks can be found in the studies presented by Cavanagh (1998), Daugbjerg (1998), Jordon and Schubert (1992), and Van Waarden (1992).

Interest intermediation scholars argue that policy making and implementation does not take place in a void, but rather in a multi-actor process were different stakeholders attempt to influence both the process and its potential outcomes. To describe these processes of interest mediation, typologies were developed to characterize the specifics of the policy process. Van Waarden (1992) developed one of the most detailed and comprehensive typology framework of policy networks. He argued that networks emerge because interdependent actors aim to reduce transaction costs. Interest groups save resources by participating in policy networks. Policy networks ensure that stakeholders (i.e. individuals and groups with a stake in and commitment to a specific policy field) do not have to repeatedly gain access and influence for each separate issue. For policy-makers, easier access to information from stakeholders signals such savings. Van Waarden argues that a second rationale can be found for governmental participation in policy networks: the interdependence between actors in a policy network stimulates cooperative behaviour among these stakeholders. As more permanent relationships of trust and resource dependency develop among both public and private actors in policy networks over time, unproductive and divisive behaviour declines. In other words, the interdependency between actors facilitates cooperative behaviour between these actors, which reduces coordination, and transaction costs.

One of the most prominent and most often applied classifications of networks was developed by Rhodes (1988) and later refined by Rhodes and Marsh (1992). They argue that policy networks differ along a continuum, ranging from issue networks to policy communities (See Table 2.2). Marsh and Rhodes stress that network membership is an important indicator of the type of policy network. The number of actors involved in the network, the characteristics of these networks members and, the degree of integration, in terms of frequency of interactions among network actors, and the distribution of resources,

are important features of networks that need to be taken into account in analysis of behaviour and outcomes of the actor within the network. Moreover, the extent of consensus in terms of problem definitions and possible solutions and the degree to which norms and values are shared among network members is an important characteristic of policy networks. These typologies also mention policy resources that can be either tangible (e.g. information, staff) or intangible (e.g. skills and experience) (Rhodes 1996).

Table 2.2 Policy communities and policy networks: the Rhodes' model

Type of network	Characteristics of network
Policy community/ Territorial community	Stability, highly restricted membership, vertical interdependence, limited horizontal articulation
Professional network	Stability, highly restricted membership, vertical interdependence, limited horizontal articulation, serves interest of profession
Intergovernmental Network	Limited membership, limited vertical interdependence, extensive horizontal articulation
Producer Network	Fluctuating membership, limited vertical interdependence, serves interest of producer
Issue Network	Unstable, large number of members, limited vertical interdependence

Source: (Marsh and Rhodes 1992)

These conceptual frameworks described the dimensions that are considered important for the identification of policy network types. Variation between the typologies is the result of the emphasis placed on these different dimensions, rather than an indicator of different policy network perspectives. The typologies have a common understanding of policy networks as power dependency relationships between government and interest groups, in which resources are exchanged. Interest mediation literature acknowledges that policy networks might influence and facilitate policy processes and the production of outcomes, but policy networks are not considered as producing those policy outcomes themselves (Marsh 1998).

The second strand of this first cycle differs in that it perceives policy networks as a potential policy instrument to produce policy outcomes. The term 'policy network' refers in this perspective to a specific mode of governance. The governance approach to policy networks differs from the interest intermediation approach because it views policy networks as an alternative to other modes of governance, such as markets and hierarchies (Sørensen and Torfing 2009). This perspective argues that the combinations of functional differentiation and the growing importance of formal organisations in modern societies have resulted in a shift from government to governance. This perspective is considered by Börzel (1998) to mark policy networks not just as a new mode of governance, but also as an indicator of the changed relationship between the state and society. Governments have become increasingly dependent upon the cooperation and joint resource mobilisation of policy actors outside their hierarchical control (Borzel, 1998). A policy network, according to this literature, includes all actors involved in the formulation and implementation of a policy in a policy sector. They are characterised by predominantly informal interactions between public and private actors with distinctive, but interdependent interests, who strive to solve problems through collective, non-hierarchical action.

Within this networks as new mode of governance strand, Kenis and Schneider (1991) define policy networks as "webs of relatively stable and on-going relationships which mobilise and pool dispersed resources so that collective (or parallel) action can be orchestrated towards the solution of a common policy" (p. 36). They perceive policy networks as specific structural arrangements employed by governments in policy processes. This conceptualisation refers to the horizontal coordination of collective action by public and private actors and particular emphasis is placed upon inter-organisational relations in policy processes. From this perspective, policy networks are more than a platform where the exchange of resources

takes place alongside the representation of stakeholder's interests. They are viewed as necessary policy instruments for modern governments to effectively steer society.

A basic argument put forward in this strand of the literature by both scholars and practitioners is that in increasingly complex policy fields, contemporary central states seldom have the resources to design and implement policies themselves. Decentralised, self-organising initiatives are frequently more effective than centrally designed programs in improving public policy outcomes (Minkoff 2013; Ostrom 1990; Feiock and Scholz 2009). As Scharpf (1987) argues;

> "It is unlikely, if not impossible, that public policy of any significance could result from the choice process of any single unified actor. Policy formulation and policy implementation are inevitably the result of interactions among a plurality of separate stakeholders, with separate interests, goals and strategies".

In a top-down approach, a central agency controls policy and the execution of projects under the assumption that these projects require considerable expertise and resources not available outside the central agency. Decentralised initiatives, on the other hand, call for collaboration because individual actors seldom control all the resources and know-how necessary to be successful (Ireland, Hitt, and Vaidyanath 2002). In these collaborative programs, the beneficiaries are encouraged to take initiative, prepare project proposals, and seek programme funds to implement their projects. Successful project proposals receive funds from the program. Thus, collaborative programs provide incentives for users to strategically seek relationships with relevant organisations whose resources are needed for successful planning and implementation of projects (Shrestha 2013).

According to Kenis and Schneider (1991) the potential value of policy networks as a mode of governance should be seen at the implementation stage. The relative effectiveness of policy

networks in implementation compared to hierarchies and markets outweighs any efficiency losses in the incorporating of networks at the policy design stage. In this view, governance networks are seen as an innovative mode of governance, especially in policy areas such as social inclusion, environmental sustainability, or neighbourhood regeneration. These policy areas are often termed as 'wicked issues' that can only be tackled by bringing together the resources of a range of different providers and interest groups. Especially, the link between policy networks and social capital is emphasised within this strand. By bringing together actors from different sectors, pooling resources and perspectives, the role of bridging social capital and how this can improve resources, innovation and flexibility of a network. Governance networks may also create social capital as new channels of cooperation over shared objectives develop (Blanco, Lowndes, and Pratchett 2011). In this way, networks are created based upon collaborative relationships between actors from different spheres, including the public, private, and third sectors (Blanco, Lowndes, and Pratchett 2011).

Both strands in the first cycle provided interesting insights to the study of networks, however, they have been subject to fundamental critiques. The first cycle of literature consists of two quite distinct policy network perspectives. The interest mediation literature introduces many dimensions along which policy networks might vary. The governance approach indicates the potential of policy networks as a new mode of policy coordination. Despite these important conceptualisations of new modes of interaction between policy stakeholders, both the interest intermediation literature and the governance approach to policy networks are subject to important criticisms. These criticisms generally point to three main omissions. First, there is the critique that these policy network perspectives lack a proper conceptualization of relational variables that would allow for close analysis of how networks operate in practice. The first cycle literature instead focuses on the characteristics of actors, which results in policy network models that are not network models in the true

sense (Pappi and Henning 1998; Peters and Pierre 1998). Marsh and Rhodes typology for example, builds on the dimension that captures the nature of network membership (Marsh and Rhodes 1992). This dimension stresses both the number of actors, and the characteristics of these actors, but does not elaborate upon the relations between actors. The governance approach also lacks the inclusion of relational variables.

A second criticism is that these policy networks perspectives lack a conceptual link between the characteristics of a policy network's structures and the characteristics of policy outcomes. No hypotheses have been put forward to systematically link the nature of a policy network with the outcome of the policy process (Ansell 2000; Bressers, O'Toole, and Richardson 1994; Dowding 1995; Peters and Pierre 1998). The interest mediation literature at best has indicated a correlation between different types of policy networks and different types of policy outcomes (Dassen 2010). However, the causal relations remain unclear. Critics suggest that policy networks are no more and no less than a useful toolbox for analysing public policy. The third strand of critique argues that early policy network perspectives focused only on the structural characteristics of the global network structure rather than including potentially important differences *within* policy networks structures (Provan and Sebastian 1998).

The first cycle introduced the concept of networks for the analysis of public policy. As network forms became more prominent in public policy making, the literature tried to capture this changing nature of governance. Scholars such as Rhodes (1992), Van Waarden (1992), Jordan and Schubert (1992) introduced many compositional variables that are still useful for the characterisation and analysis of policy networks today. Nevertheless, this strand of the literature did not include relational variables, and is therefore criticised for falling short of developing a theory of policy networks. Subsequently, the governance strand

within this cycle, focusing on networks as a new mode of policy delivery, was taken forward and refined in the second cycle.

2.1.2 Cycle 2: The management of policy networks

The second cycle of policy networks moves on from the debate surrounding the conceptualization of policy networks as either platforms of interest intermediation or a specific mode of governance. Instead, the focus is on the opportunities which policy networks offer a variety of actors, to represent their interest and influence policy outcomes. This strand is anchored in the New Public Management literature. It focuses in particular on the public management of networks in order to identify interaction processes and clarify the potential of policy networks as a more effective and efficient mode of coordination (Kickert, Klijn, and Koppenjan 1997; Stoker 2006; Torfing and Sørensen 2007). This network management literature, similar to the governance strand in the first cycle, views policy networks as a mode of societal coordination that differs from market steering and hierarchical command and control. However, this cycle assumes that management and leadership efforts can affect the process and structures of policy networks. This has been termed in the literature as 'meta-governance' (Jessop 1998; Kooiman and Jentoft 2009; Sørensen and Torfing 2009). The role of a network manager, to change and steer the network in a particular direction is emphasised. Therefore, this cycle adds to the literature a new perspective of dynamic networks that consciously evolve and develop over time and can be steered by a network manager.

Network management is the deliberate attempt to govern processes in networks and is commonly defined as "promoting the mutual adjustment of the behaviour of actors with diverse objectives and ambitions with regard of tackling problems within a given framework of interorganisational relationships" (Kickert, Klijn, and Koppenjan 1997, 44). Network

management is necessary because of the complexity of policy-making and service delivery. In order to achieve worthwhile outcomes and results, a wide variety of actors and policy levels need to be connected (Klijn, Steijn, and Edelenbos 2010). The aim is to initiate and facilitate the interaction processes between actors. In doing so, new network arrangements are created and changed; this allows for exploring new contents and ideas. In other words, the focus of these studies is "not on networks as a means of governance, but on the governance and management of networks themselves" (Provan and Kenis 2008, 233).

Networks can be managed by an network manager or leader. The structures of policy networks and the processes within them can be changed by this manager, this illustrates the dynamic nature of networks. Provan and Kenis (2008) assert that due to manangement efforts of a network manager, the governance structure of a network can theoretically evolve into a new structure. This also applies in collaborative networks consisting of 'partnerships' that implement and are responsible for projects. Within these collaborative partnerships for the implementation of projects, the ability to lead is needed. However this does not refer to hierarchical leadership. Instead leadership within these 'partnerships' is determined by negotiation. Influence is not necessarily determined by decision-making power or resources, but can also be exercised through interaction, connection, and consensus-building (Sotarauta 2010; Gerry Stoker 2006). In this way, the network manager can steer, adapt and influence the network in a particular manner.

When exercised by a formal public organisation, this activity of network management is referred to as meta-governance (Jessop 1998). Studies concerned with meta-governance focus in particular on how political authorities are engaged in promoting and guiding the 'self-organisation of governance systems'. Through the use of rules, organisational knowledge, institutional tactics, and other political strategies, network managers are able to

influence ‘self-organised’ systems. According to Klijn et al (2010) a network manager can practice two management strategies; process management and institutional design management. Process management strategies attempt to facilitate interactions between actors in policy systems (Torfing and Sørensen 2007). If the management strategies are aimed at altering the institutional characteristics of the network they are labelled institutional design strategies (Klijn, Steijn, and Edelenbos 2010; Klijn and Koppenjan 2012). According to Daugbjerg and Fawcett (2015) managers can influence the scope, characteristics, and procedures within a network by defining who can belong to the network and empowering certain actors within the network by giving them additional resources. Related, the state could engage in network framing by formulating the goals to be achieved, allocating resources, and defining the legal basis for the network. The key point here is that it is the state that plays the crucial meta-governance role within the network. This concept of meta-governance, thus offers a framework to analyse the activities of governmental organisations to steer the network in a particular direction.

The network management literature stresses that the network manager has an important role to play in securing the outcomes of the network. The legitimacy of policies is still dependent upon the perceived quality of implementation, therefore, network managers can apply different strategies to ensure the performance of policy. For example, there is the risk of rent seeking behaviour of non-state actors that capture the policy process and move the decisions that are being made in the network towards benefits for themselves (Daugbjerg and Fawcett 2015). Related, a too inclusive network can hinder performance. Policy deadlock and disagreement about the 'rules of the game' or difficulty in reaching a set of shared norms on how to proceed, may hinder the effective and efficient implementation of policy. Therefore, the ability of a state or another network manager to manage the network is important for the implementation and performance of policy.

While the second cycle builds on the second strand of the first cycle, it has been criticised for merely extending and refining the policy network concept as a descriptive tool. Thus, the main arguments voiced against the interest intermediation approach and the network governance approach, in the first cycle, are also applicable in the second cycle. A framework with variables and associated hypotheses were developed (Klijn, Steijn, and Edelenbos 2010; Provan and Kenis 2008) but this was based upon the attributes of the actors, not on the relational characteristics of these actors. Additionally, by focussing on the steering and controlling capability of managers and governments, it has been argued that this strand overlooks the horizontal characteristics of policy networks (Dassen 2010). The second cycle does conceptualise the network as a structure that can change over time. However, the drivers of these changes in policy network structure are considered to be network managers. Thus, the policy outcomes resulting from a policy network tend to be attributed to the management strategies applied rather than to the characteristics of the policy network itself (Dassen, 2010). Nevertheless, it is also important to note that this cycle of policy network conceptualisation emphasised the importance of leadership and the possibility of management within a network. This indicates that variables concerning the leadership or management of a network, or specific sections in the network, must be taken into account in analysis of their operation.

2.1.3 Cycle 3: Social Network Analysis and Policy Network Analysis

A key development in the policy cycle network literature over the past two decades is the use of Social Network Analysis (SNA) tools to model and analyse policy networks. The incorporation of SNA within policy network analysis addresses one of the main critiques – e.g. Dowding (1995) - that in the first two cycles of PNA no relational variables were included. Relational variables are variables constructed from the ties between actors within

the network. Thus whereas previous variables such as type of organisations and the available budget within the network were considered, with the inclusion of SNA, variables that measure network density or different operationalisations of network centrality can be included. See Table 2.3 for the difference between compositional and relational variables. Whereas the previous cycles focused upon the characteristics of the actors (compositional variables), this cycle is able to include relational variables that allow for a more comprehensive analysis of network behaviour and outcomes (Bressers et al. 1994).

Table 2.3 Compositional and Relational Variables

Compositional Variables	**Relational Variables**
Type of organisation	Network activity
Available budget	The distance to all other network members
Policy area	The frequency an actor is an intermediary between two other actors
Number of network members	The degree to which the actor is part of a group of many connected actors.
Tangible and un-tangible resources	The extent to which an actor is connected to central actors
	The degree of connections between all actors.

Source: Author's own elaboration.

Currently, a broad range of studies makes use of different network analysis. The application of network analysis has evolved from identifying and mapping policy network structures and descriptive measurements, to determining the most active and important network members, and to exploring patterns of association within the network. Recent applications of SNA incorporate statistical tools that allow more detailed understanding of how networks form and change based on endogenous and exogenous processes (Lubell et al. 2012; Park and Rethemeyer 2014; Saunders et al. 2013). However, as this research is concerned with the performance – i.e. outcomes and outputs of actors explained by their relational

structure or position in the network - the discussion of the SNA studies will focus on this topic and exclude other studies.

Relational features of Networks affecting performance

There are different approaches within this cycle, but they have one common characteristic: network structures are conceptualized as a set of compositional and relational variables (Borgatti et al. 2009; Provan and Sebastian 1998). While actors and the resources they have at their disposal have been recognized throughout the cycles as important parts of the policy network structures (compositional), the explicit conceptualization of relational variables potentially overcomes one of the most persistent criticisms of policy network concepts: that they neglected the assessment of relations between network actors (Dowding 1995). It is argued that these relations determine the information, trust, and resources an organisation receives, and in the end the quality of its performance.

Methodologically, networks can be studied from a range of perspectives; from the point of view of an ego-network, dyadic, triadic or whole network perspective (Wasserman and Faust 1994; Hagedoorn, Roijakkers, and Van Kranenburg 2006). Studies that take a global view, for example, hypothesise the relationship between network closure and performance in terms of efficiency and innovativeness. Network closure in the literature is described as a well-connected network, defined either according to the existence of many strong connections between the network members or indirectly through a common contact. SNA offers the measures density and network centralisation to capture these concepts (for further information cf. Wasserman and Faust, 1994). Both density and centralisation address the issue of how well integrated policy networks are. A high-density level secures the flow of communication among the actors, facilitating bargaining and joint action. However,

communication and collaboration might also be channelled through a central coordinating actor, which is why higher levels of hierarchy also point to integration. Both measures reflect aspects of a closed network; according to theoretical assumptions, the degree of closeness is likely to affect the internal process of organisation and the performance of policymaking. Studies taking a dyadic perspective focus on relationships between a focal actor and its connections to the rest of the network. Different studies focus on different features of network connectivity in explaining performance.

Studies have explored how the success of organizational performance is tied to the networking capacity of the organization (Agranoff and McGuire 2003; Agranoff and McGuire 2001; Schalk, Torenvlied, and Allen 2010; Shrestha 2013; L. J. O'Toole and Meier 1999). The way, and thus the structure, in which actors are positioned within a network can affect how information and resources circulate and get exchanged. These studies have emphasised the benefit of having direct ties to a broader set of organisational partners, and the indirect ties to other projects and their partners outside the direct partner network. However, studies showed also that greater cohesion among partners, in terms of sharing the same set of projects, can lead to better performance. For network managers this offers pressure in adopting a strategy that allows for the best network structure. To differentiate between these pressures of having strong and dense ties compared to indirect ties, this research focuses on direct connections, indirect connections and embeddedness (see Table 2.4).

Table 2.4 Social Network Measures and their Explanation.

Network features	SNA term	Explanation
Direct Connections	Degree centrality	The number of connections from the main actor to other actors in the network.
Indirect Connections	Eigenvector, Betweenness centrality	Eigenvector: a centrality measure that calculates a centrality of an actor based upon the centrality of its connections. Betweenness centrality: a centrality measure that is calculated as the fraction of shortest paths between node pairs that pass through the node of interest.
Embeddedness	Kcore	k-core: a measure that calculates the largest subgraph where vertices have at least k interconnections.

Source: based on Nooy et al., (2011) and author's own elaborations.

These network features are particular relevant in this study as these features capture the three important themes in SNA, as well as three important arguments in regional and Cohesion policy analysis (see section 2.2). For example research on direct ties and indirect ties shows how these ties can have a positive influence on different outcomes. As Granovetter (1973) explains, actors having a great number of direct ties to different organisations tend to have more information, more views and more available resources. Similarly, in Cohesion policy, it is argued that the inclusion of more partners in policy design and implementation ensures the legitimacy, and the local buy-in into the policy, and therefore the policy is better adjusted to the needs of the beneficiaries. However, SNA research has shown that diverse information and new ideas travel through weak ties - an indirect connection. They do so primarily through performing bridges between otherwise disconnected segments of a network (Burt 2001; Granovetter 1973). Within the context of

regional and Cohesion policy, these weak or indirect ties can make a network more resilient and adaptive to change.

Similarly, for strong and closed connections (embedded), within SNA when actors share these types of ties, they influence one another, share similar views, communicate effectively, and are more likely to trust each other. Similar advantages for regional development and Cohesion policy are obvious: project partners with strong ties are more likely to influence one another, and thus creating strong ties among diverse stakeholders can create mutual learning, sharing of resources and advice (Prell, Hubacek, and Reed 2009). However, benefits of strong ties may be countered by the redundancy of information that typically runs trough such ties; stakeholders that share a tie for a long period of time tend to have the same information and knowledge regarding the subject. This shows how the theoretical concepts of SNA are present in the discussions of regional and EU cohesion policy, this will be further elaborated upon in section 2.2.

The following sections will give an initial description of these measurements and a brief discussion of the studies including them in their analysis. Before turning to a discussion of the literatures on regional and Cohesion policy.

Direct connections

The direct connections of an actor in a network can be measured by 'Degree centrality'. This measure refers to how many 'others' an actor directly connected is, in other words, the number of ties in which an organisation is involved in (Nooy, Mrvar, and Batagelj 2011). Actors with a high degree centrality can be seen as important players for mobilising the network, bringing other actors together, having wide access to information. The notion of

degree centrality is based upon the idea that information and resources can more easily reach an actor when it has more connections.

Recent research in public management studies indicates a positive effect of network activity of an organisation on its overall performance. Meier and O'Toole (2001) in well-known studies on educational districts in Texas, have shown that networking by district managers - establishing contacts with other actors in the network, is positively correlated with the performance of the district, in terms of schools scores (Meier and O'Toole 2005; Meier and O'toole 2001; L. J. O'Toole and Meier 2004; L. J. O'Toole and Meier 1999). O'Toole and Meier's research in general found that managerial networking contributes positively to performance, but the returns diminish when managers reach higher levels of networking (Hicklin, O'Toole, and Meier 2008). This is consistent with Akkerman, Torenvlied and Schalk's research, focusing on the Dutch higher education system. Their results shows a non-linear relationship between networking and test scores of pupils (Akkerman, Torenvlied, and Schalk 2012; Torenvlied and Akkerman 2014). Also in collaborative networks for regional development have studies found evidence that support the benefit of having more connections to the network. Shrestha (2013), for example, looks at networks and collaborative performance by analysing the effect of network capital on rural water supply and sanitation programs in Nepal. His research shows that communities have greater success in getting funds for their projects when they are connected to a greater number of organisational partners. Showing a variety of studies that report the benefit of direct connections on performance.

Indirect connections

In addition to the direct connections there is the notion that the structure of an actors' indirect connections determine the position of an actor in a network. There are two

measures used to capture these indirect connections. The first measure is based on the notion that an actor is more central when it occupies an intermediary position in the network. This approach is based on the concept of betweenness and depends on the extent to which an actor is needed as a link in the chains of contacts that facilitate the spread of information throughout the network (Nooy, Mrvar, and Batagelj 2011). The second measure is based upon the assumption that an actor occupies a more central position when your contacts are more central - that is, if they have central contacts. It is important to know people, and especially it matters who you know. When you know influential people, it is more likely to exert influence through them (Nooy, Mrvar, and Batagelj 2011).

These approaches are inherent in the structural hole argument developed by Burt (Burt 1997; Burt 2001; Burt 2000). Structural holes can be understood as some kind of break in the social structure that is identifiable by the absence of ties or the presence of weaker ties. The actors in a position to bridge such holes are supposed to have a strategic advantage as they have access to new and diversified information (resources of any kind) that can be used in bargaining activities. Accordingly, a network that spans many structural holes is a network rich with social capital. The essential argument inherent in both the weak ties and structural holes is that an individual access to resources is determined by the characteristics of that person's social network relations. However, while Granovetter points to the relevance of tie strengths, Burt stresses the importance of non-redundant contacts (Sandström and Carlsson 2008). Gargiulo and Benassi (2000) explore the tension between cohesive communication networks and connections that connect structural holes. Their study suggest that cohesive communication networks are less likely to adapt to change in requirements and this jeopardized their coordination role within the network. Whereas, networks that are rich in structural holes were more flexible.

Embeddedness

Next to direct and indirect connections, there is the notion that structural embeddedness of organisations is positively associated with effectiveness and performance. Within this notion it is assumed that well-embedded organisations are able to acquire the necessary information and resources to ensure performance. At the same time, highly embedded organisations have trust and reputation which they can turn into influence with other organisations (Park and Rethemeyer 2014).

Different studies have reported on the link between embedded network relations and organisational performance (Schalk, Torenvlied, and Allen 2010; Baum and Oliver 1991; Uzzi 1996) or the constraints of these embedded relations (Villadsen 2011). The concept of embeddedness was first explored by Uzzi (1996), looking at the embeddedness of firms and their economic performance. Embeddedness means that an organisation is embedded in a set of social relations. The degree of embeddedness, is then determined by the degree of which an actors network contacts, also are connected between themselves. As Moran (2005) argues, "because all of one's contacts in closed networks know and interact with each other, they are more likely (than in open networks) to convey and reinforce norms of exchange and more easily able to monitor their observance and enforce sanctions" (Moran 2005, 1131). It can promote the generalised norms of trust and reciprocity within the network (Y. Lee, Lee, and Feiock 2012).

2.2 The Analysis of networks in regional and EU Cohesion policy

Collaborative network structures are prominent in the implementation of contemporary regional and local economic development policies. This is reflected in the frequent use of the network concept in regional economic development literature (Huggins and Thompson 2014). The three main features of SNA - direct connections, indirect connections and embeddedness, are applicable to Regional and Cohesion policy. Indeed, the arguments that are underlying these network features have been discussed in these policy areas. Networks and their structural relations are considered to affect economic opportunities and performance (Eagle, Macy, and Claxton 2010). Just as in other policy areas, these networks are understood to mobilise and fully develop the knowledge residing within regional organisations through inter-organisational networks, and to provide feedback loops ensuring evolution and innovation.

Network-based approaches to policy design and implementation are also particularly prominent in EU Cohesion policy. This network approach to implementation is formalised through the Partnership principle[3] and the efficiency and effectiveness of this principle in Cohesion policy has been an important issue for the European Commission (See section 4.2). Since the introduction of the principle in 1988, the Commission has undertaken internal reviews, commissioned specific pieces of research work and reviewed partnership delivery mechanisms as part of the regular ex-post evaluations of each Structural Funds programme period. The key points to note from this are:

[3] The partnership principle requires the inclusion of important social and economic bodies in the implementation of EU cohesion policy.

- The interpretation of the partnership principle in managing Structural Funds varies greatly between Member States and in some cases within Member States (for example, within the UK partnership mechanisms in the disbursement of Structural Funds have varied in England, Scotland and Wales).
- Across Member States, the level of partnership involvement varies between stages of the programming management cycle (e.g. partners may be involved in programme preparation but may not be involved in the project selection process).
- The literature and policy evaluations are not conclusive in their assessments of the influence of networks on policy performance.

This section sets out the research on networks in regional policy and Cohesion policy. It discusses those studies that focus on networks for the implementation of these policies, and tries to link these studies with the SNA features discussed in the previous section.

2.2.1 Networks in Regional policy

Studies in regional economic development have focused on the perceived advantages and disadvantages of networks for the implementation of regional economic policy. Initiatives to foster partnerships or collaborative approaches for the implementation of economic development have become an increasingly significant subject for research (Amin and Thrift 1995; Coe et al. 2004; Huggins, Johnston, and Steffenson 2008; Huggins and Thompson 2014). For example, endogenous growth of regions arguably benefits from using the knowledge that sits within regions, this means developing a network between Universities, Higher Education institutions and local SMEs (Huggins, Johnston, and Steffenson 2008). Different studies discuss how to design and initiate these networks. By having this debate, these studies indirectly discuss the main relational features present in PNA studies; direct connections, indirect connections and embeddedness.

Advocates of network based approaches in regional policy make several arguments on the basis of increased implementation efficiency. Marks and Hooghe (2004) emphasise for reasons of efficiency and accountability that the "dispersion of governance across multiple jurisdictions is more efficient than, and normatively superior to, central state monopoly". A more dispersed policy model can respond to challenges at various territorial scales, ensuring that policies are considered across functional economic areas (labour markets, travel to work areas, housing markets, as well as administrative boundaries). In addition, by including a wider range of sub-national interests, including elected authorities, private actors and societal groups, in the process of administration, potentially a stronger sense of accountability and 'ownership' of policies is created. Thus, by including organisations from different levels of governance, as well as, non-governmental organisations within policymaking and implementation new information can reach and inform the design and implementation of policy.

However, this is contested by scholars that assert the influence of the state and the fragmentation of different policy instruments and initiatives. In the current financial context, debates on public management models include discussion about the reassertion of the state to address fragmentation and duplication in public administration (Christensen, P. and Lægreid, 2007). The participation of networks in policy implementation can vary according to the level and type of funding available, the type of instruments concerned, the division of fiscal and political autonomy between central and regional levels etc. Thus, some critics suggest that this perceived shift is overstated. Crucially, many note that even where arrangements for the design and delivery of regional policy instruments have been drawn in networks, the state remains the dominant actor in deciding how funding for regional development is allocated (Lovering, 1999).

These studies focus on the interactions between the state and non-governmental organisations in a network to implement public policy, but lack the structural approach of SNA. Only recently, studies in the US focused on regional economic development started to include SNA in their analysis (Y. Lee, Lee, and Feiock 2012; Oh, Lee, and Bush 2014; I.-W. Lee, Feiock, and Lee 2012; Feiock 2004). These studies focus mainly upon explaining the emergence of policy networks for economic development. When and how do local governments cooperate with potential partners or competitors? A broad variety of collaboration mechanisms is available, such as networking, partnerships, and joint ventures, on intensity of ties, size of participating parties, and complexity of purpose, including information sharing, through institutional collective action problem solving. However, these studies have not yet linked these structures to actual outcomes or performance of policies (Kim 2012; I.-W. Lee, Feiock, and Lee 2012).

The three network strands - direct, indirect, and embedded connections.

The discussion of the benefits and disadvantages of networks for regional development is closely related to structural discussion in PNA - what type of structural networks relations are beneficial to performance and effective implementation of policy? This section will demonstrate the link between the PNA and the discussion of networks in regional development policy.

The direct connections strand is inherent to the argument that focuses on the combination of knowledge from a diverse set of actors to inform policymaking. Regional development policies are trying to resolve complex and multi-dimensional challenges, and the argument is that in practice these challenges can be more efficiently met if projects are run in partnership rather than by one organisation on its own (Agranoff and McGuire 2003). By combining knowledge within the region from a diverse set of actors a more knowledgeable

policy can be developed and implemented. This means that network approaches with non-governmental actors, in theory, can contribute to better policy effectiveness by allowing government authorities to access knowledge, which is used to improve the targeting of interventions, consequently improving funding take-up and project quality.

Studies within regional policy emphasise the concept of social capital as the reason why collaborative approaches are useful in for the implementation of regional policy. Social capital, as defined by Putnam(1993), a scholar working on regional development as well as networks, refers to two specific features of social organization such as trust, norms and networks, and can take a 'bridging' form (i.e. based on the development of links to people 'unlike me') or a 'bonding' form (based on the development of links to people 'like me'). Similar to the 'bridging' notion, Eagle et al., (2010) emphasise that opportunities for economic performance are more likely to come from contacts outside a tightly knit local friendship group, this notion of developing links between people 'unlike me'. They argue that highly clustered, or insular, social ties are predicted to limit access to social and economic prospects from outside the social group, whereas, heterogeneous social ties may generate these opportunities from a range of diverse contacts (Eagle, Macy, and Claxton 2010). This strand corresponds well with the indirect connections feature of PNA (see section 2.1.3). However another strand emphasises the 'bonding' aspect of economic development networks, which relates to the embeddedness aspect within PNA (see section 2.1.3). It is seen that trust, cooperation and mutual understanding is required to reconcile, and deal with, the increasingly fragmented and polarized social order (Healey, 1996), or 'the glue that bonds the benefits of economic and physical capital into marginalised communities' (Commission on Social Justice 1994; Lowndes and Sullivan 2004).

It is important to note that these aspects are not mutually exclusive, all three of these aspects can at the same time influence the information and knowledge available for a network actor.

However, the institutional context in which actors operate is obviously important for which network feature is more important. Hence, in the analysis of networks and their influence on policy performance institutional settings set the framework around which levels of trust and exchange of knowledge and experience build (Ostrom 1990) and need to be taken into account. For example, maintaining overlapping ties with a set of local organisations was crucial for improving the livelihoods of rural families in Tanzania. In contrast, in the context of Berardo's (2009) study in the United States, the ability of organisations to span large structural holes (bridging), e.g. maintaining a network with non-redundant ties by connecting to organisations that do not share many ties with the subgroup of organisations was more important to the success of their projects (Shrestha 2013). What works best depends, on the nature, scope and risk of the project (Schaeffer and Loveridge 2002).

This is particularly relevant to contemporary regional policy, which has a multifaceted perspective. Some components of the policy focus on region-specific economic growth, while other related policies support broader framework issues such as support for small business development on a national scale and more general policies aimed at education, labour market and infrastructure. Thus contemporary regional policy is a 'crowded' policy field, containing a complex mix of possible interventions (Bachtler and Yuill, 2001). This multi-faceted character simultaneously justifies integrated, network-based approaches while raising the possibility of increased complexity and bureaucracy.

To add another layer to the 'crowded' regional development policy, the next section will discuss the literature particular studies with a focus on networks for the implementation of EU cohesion policy.

2.2.2 Networks in EU cohesion policy: reviewing the evidence

The approach to network-based implementation in Cohesion policy has evolved over several decades. The 'partnership principle' was first introduced in 1988 as one of the four fundamental principles (alongside concentration, programming and subsidiarity) governing Structural Funds (Bache 2010) and has developed in the following programming periods. In this context, partnership is understood as the participation of national, sub-national and supranational actors in the design and implementation of programmes. Furthermore, the partnership principle is linked to the principle of *subsidiarity* which implies that decisions should be made at the level most competent to carry them out, within the context of a broader cooperative network which pools resources and experiences (Bache and Olsson, 2001). Creating a network approach to design, implement and evaluate the policy.

The perceived benefits to CP performance

To identify the effects of this partnership principle, the European Commission, in 1999, contracted the Tavistock institute, in tandem with consultants ECOTEC, to conduct a study evaluation of the partnership principle and the implementation of the Structural Funds. The report concluded that the adoption of the partnership principle had strongly embedded partnership working at all stages of Structural Fund programming in EU Member States. Crucially, partnership working had expanded beyond the statutory requirements set out for programme management and implementation and it encouraged and influenced partnership working beyond the remit of Structural Funds activities. The study ascribed a

number of positive attributes arising from the adoption of networks for Structural Funds implementation. These were identified as:

- improved effectiveness in programme development and monitoring;
- better project selection;
- improved transparency and legitimacy of decision-making;
- greater ownership of and commitment to programme outputs;
- opportunities for strengthening innovation and the exchange of learning across organisational boundaries;
- institutional capacity building at sectoral and territorial level.

According to the report, partnership had become:

> "a complex nexus of strategic and operational relationships concerned with programme development, programme management and the substantive tasks of programmes themselves" (Kelleher, Batterbury, and Stern 1999, 11).

The study reported in particular a positive effect on the capacity of institutions to work in partnership, that extended the premise of Cohesion policy. In many cases, partnership went beyond the formal arrangements for consultation, coordination, and decision-making envisaged in the Regulations, enhancing the capacity for joint multi-organisational action and operations in specific policy areas, sectors, regions and localities. The report even argued that the partnership principle had become a key initiative for broader regional and local development initiatives. It supported the conviction that a network approach to implementation had a role to play in capacity-building aspects of policy implementation within regions. The Tavistock Report highlighted that the key actors engaged in Structural Funds went beyond the 'vertical' hierarchical governmental structures consisting of the Commission and Member States to include new and complex 'horizontal' structures of sub-national actors representing cross sector interests and policy networks (Kelleher, Batterbury, and Stern 1999).

Following on from this research, another evaluation of the partnership principle was carried out by the department of the European Commission responsible for regional policy, *DG Regio* (formerly DGXVI). Its formal discussion paper, Partnership in the 2000-2006 Programming Period (2005), provides an additional analysis of the implementation of the partnership principle within EU Member States and supports many of the conclusions of the earlier Tavistock Institute Report.

The DG Regio study was generally positive about the adoption of the partnership principle. The paper concluded that the implementation of the partnership principle in the disbursement of the Structural Funds during the 2000-2006 programming period made a significant contribution to Cohesion policy performance and helped in addressing social and economic disparities between Member States. It also identified a core of common benefits of policy transfer as a result of the implementation of the partnership principle. According to the report, partnership can contribute to the effectiveness, efficiency, legitimacy and transparency of Structural Funds operations, and to the commitment to, and ownership of project outputs. Furthermore, the report highlighted that benefits were stronger in those Member States that were implementing the partnership principle well. Where it was well implemented, partnership had generated further benefits, such as:

> "…the improvement of institutional capacities at different levels (local, regional and national), better institutional co-ordination and communication at the national level, or a better involvement of civil society" (European Commission 2005, 12).

Other research carried out on behalf of the European Commission in 2009, An Agenda for a Reformed Cohesion policy by Fabrizio Barca (2009), championed a 'place-based' rationale for the policy, emphasising the value of involving horizontal partners in the process of programme design and implementation: "a process for eliciting the knowledge and

preferences of individuals, facilitating innovative actors and new ideas, and designing projects for the production of public goods and services"(Barca 2009, 177). Horizontal partners can clearly support this process of obtaining knowledge and preferences of individuals, which in turn can make policy more responsive and also more effective (Polverari and Michie 2009).

It has also been argued that the planning and implementation requirements for spending Cohesion policy funds have challenged the power balances, interests and behaviours of established actors, providing opportunities for new organisations and views to have an influence on economic development (Paraskevopoulos and Leonardi 2004; Hibbitt, Jones, and Meegan 2001). According to the Barca report, research on the application of the partnership principle reveals clear changes in the territorial relations between organisations and across levels of government, both in the implementation of Cohesion policy as well as domestic policies. This concerns the way in which sub-national authorities have become involved in the planning and implementation of Cohesion policy programmes through various forms of consultation or cooperation, although with major differences between Member States. Cohesion policy has often played a key role in supporting local development institutions and networks, which has helped them to lead and co-ordinate bottom-up, integrated responses to economic development challenges. It has also extended the number and type of organisations involved in economic development, and increased the resource base for their local bodies. It has more recently (since 2006) strengthened the exchange of experiences (through the web-based availability of material prepared in a given format) and promoted linkages across networks and local projects through the "Regions for Economic Change initiative" (Barca, 2009).

The network approach initiated by the partnership principle in Cohesion policy is not free from critique. There are two main strands of critiques - discussed in the following section - that question the benefits of this partnership approach. The first emphasises, as in regional policy and in PNA more generally, the remaining influence of the state and hierarchical policy implementation. The second strand argues that this network approach to policy implementation only complicates the implementation of Cohesion policy.

The critique: does 'real' partnership take place?

The first critique argues that, in some cases, the institutional framework facilitating partnership may be in place, but in reality partnership-working remains superficial and masks the continued operation of hierarchical approaches to policy implementation. For example, in terms of resource exchange within Cohesion policy, local authorities are still dependent upon the resources controlled at the European Commission and central government levels. Some academics argue that the role of national governments (relative to the European Commission) in key decisions on the implementation of Cohesion policy has been exaggerated (Mendez 2013) but there are arguments that national government are successful in playing the extended gatekeepers role at the implementation stage (Bache 1999). The role of government, either national or European, is strengthened through monitoring of partnerships by bureaucratic infrastructures and the power of resource dependency (Marinetto 2003).

Studies focusing on different countries come to mixed results about network approaches to implementation. Yesilkagit and Blom-Hansen's (2007) study, for example, focuses on the Netherlands and Denmark, and comes to the conclusion that central governments remain in central control of the implementation of the Structural Funds, and also that policy implementation overall did not produce new ways of policy making at all (Yesilkagit and

Blom-Hansen 2007). Similar, from an evaluation of the Italian Territorial Pacts it emerged that many of the partnerships between institutional and societal actors were in fact 'collusive', created only in order to gain from the financial opportunities secured by national or European programmes (Simona Milio 2004). Also in the UK, where there has been a strong central government, the lack of regional bodies able to interact with the Commission and the British government forced actors in regions targeted with Objective 1, 2 and 5(b) to improvise regional consortia and fora as catalysts for regional policy making and implementation. Such 'institutional creativity' was needed to mobilise a broad range of local actors. These policy networks were, however, ad hoc solutions mainly set-up to secure EU funding; their composition tended to vary according to the circumstances, creating an unstable and uncertain link between the regions and the Commission (Bailey and Propris 2002). This shows that the partnership principle does not have the same effect in all European countries.

Even though partnerships may exist at the level of implementation, the process of selecting the 'partners' is not automatically open and pluralistic as put forward. As Rhodes argues, "Policy Network Analysis stresses how networks limit participation in the policy process; decide which issues will be included and excluded from the policy agenda; shape the behaviours of actors through the rules of the game; privilege certain interests; and substitute private government for public accountability. It is about stability, privilege and continuity" (Rhodes 2007). This argument is clearly illustrated by an evaluation report from Blake Stevenson (2011) on the Community Planning Partnerships (CPPs) in Scotland. They conducted, amongst other things, an electronic survey with non-participating organisations. One of their conclusions was that:

> "Some stakeholders believe their organisations 'missed out' on participating in CPP programmes as a result, with some suggesting that there has been a lasting legacy

> from non-participation, which includes being 'frozen out' of the new funding round (although in practice we found CPPs to be keen to involve new partners in their Priority 5 applications for funding)" (Blake Stevenson 2011).

This argument is also related to the fear within Cohesion policy that participation in decisions over projects approvals by the private sector could allow partners to benefit unfairly (Polverari and Michie 2009). This critique emphasises the influence of a few elites in the policy making process.

The decision-making processes vary between Member States in terms of who is formally or informally included in the partnership structure and consulted at different stages in the SF programming cycle, i.e. at policy-making, agenda shaping or implementation, monitoring and evaluation stages. In some instances, there are strongly centralised decision-making processes such as in Greece and Portugal, where the institutional capacity of sub-national actors is relatively weak and the partnership approach is consequently much less well developed. In other Member States, there is more decentralised and diffused decision-making such as in the Netherlands, which is characterised by a high degree of willingness to co-operate in partnership at both vertical and horizontal levels (Kelleher, Batterbury, and Stern 1999). The social partners are not involved generally in regional partnership implementation structures, due partly to their more recent inclusion in the Commission's definition of partners. However, they are more actively involved in specific countries, mostly in smaller Member States where it is easier for a range of actors to get involved; Denmark, Finland, Ireland, and the Netherlands (Kelleher, Batterbury, and Stern 1999). This shows that partnership is strongly depended upon domestic institutional settings.

Do partnership-based networks complicate CP delivery?

A second critique is that networks make policy implementation overly complex. The threat of increased complexity and inefficiency through extended networks for implementation is apparent in Cohesion policy. Incremental additions to the apparatus of regional management run the risk of creating unnecessary policy duplication, administrative overlap and the inefficient use of resources. The DG Regio study noted that in some Member States the potential benefits of partnership working were "still not widely understood and the method of its application is not fully transparent" (European Commission 2005, 3). In addition, the study stated that although a wider range of partners than ever before is involved in Cohesion policy, in some cases, the involvement of partners at different stages of the programming cycle was not considered as equally necessary and sometimes was even seen as causing an additional burden on time and resources. It is important to avoid unnecessary complexity and it is essential to ensure stability in terms of the system which is adopted; endless changes to administration and governance arrangements are not cost free, whilst unnecessary complexity simply confuses and runs the risk of generating excessive expenditure on the bureaucratic aspects of the regional programme (Roberts 2003). Previous studies of Cohesion policy efficiency have included criticism of the "overly complex inter-departmental/inter-institutional coordination requirements" (Wostner 2008, 53). Inefficiency is closely related to the involvement of too many institutions in the implementation process.

Key national institutions shaping the implementation of Cohesion policy do not agree on the actual involvement of partners. Managing Authorities (MAs)[4], Intermediary Bodies (IBs)[5] and

[4] Managing authorities are the bodies that deal with the detailed management of the Operational programmes. They will inform potential beneficiaries, select the projects and generally monitor implementation.

potential partners themselves, do not agree about the exact purpose (and usefulness) of partnership-working in the different stages of programming, and which roles partners should play in these. The regulations are vague in this respect, allowing scope for national traditions, but this openness has not gone hand-in-hand in the Member States with an explicit reflection on "what partners feel they can contribute and what the programme authorities feel that they would benefit from partners involvement" (Polverari and Michie 2009). This lack of specificity is considered to be detrimental because:

> (i) it confines partnership engagement to a small group of actors who are particularly 'aware' of what their role can be;
> (ii) it reduces their impact where MAs/IBs do not share the same level of awareness;
> (iii) it ties partnership working strongly to 'policy-entrepreneurs', i.e. actors who in their own right, are active in promoting a certain understanding of partnership (because of personal interest, passion and motivations); and because
> (iv) it ends up reinforcing partnership in contexts where it is already established, and where there is therefore an implicit, tacit acceptance of partnership purpose and usefulness (whilst, conversely, weakening contexts where such practice lacks) (Polverari and Michie 2009).

As noted by one of the programme authorities interviewed by Polverari and Michie, "partners can bring significant contributions only when a Managing Authority or other body in the implementation structure specify in detail in what way partners should contribute" (Polverari and Michie 2009), yet this clarity of purpose is often lacking in practice. Furthermore, in studies focusing on Monitoring Committees (MCs), the primary institutional expression of partnership in the distribution of Structural Funds, express relatively negative assessments. Writing about the new Member States that entered the EU in 2006, Bachtler

[5] Intermediary Body are bodies that has been delegated certain Managing authority tasks. For example, Highlands & Islands (Scotland) Structural Funds Partnership Ltd (HIPP) and ESEP ltd were the IB's for the Highlands and Islands and Lowlands and Uplands respectively.

and McMaster (2008, 414) observe that much of the committee work involved administrative 'rubber-stamping' rather than active management.

Other research conducted in the UK, echoes these findings. Whilst acknowledging new policy approaches in some domains, it questions some of the added value effects of the funds including those related to partnership (ECOTEC 2003). A range of conditioning variables have been identified to explain the differential influence of programmes on domestic regional development activities and to assess the causality of change. This includes: the orientation, geographical coverage and financial scale of domestic regional development activities compared to SF programmes; the existing distribution of competences between national and sub-national levels; and the amount of experience Member States have in administering EU programmes (Bachtler and Taylor 2003).

The studies focusing on networks and Cohesion policy, mainly focus on the inclusion of actors, and if the this approach to implementation actually is a network approach or if the central state, or the European Union not remains in control. This debate in Cohesion policy reflects the discussion in the first Cycle of PNA (see section 2.1.1), if networks are a new mode of governance or are a framework for the description of governmental and non-governmental interactions for policy making. The discussion of cycle 2: the management of governance (see section 2.1.2) can be applied here. As the state remains in control over resources, it determines the rules, norms and goals of implementation by using meta-governance strategies. This is not to say that there is no network approach to implementation, rather the national government as well as the European Commission apply network management strategies to shape the structure of the network. Process management strategies for example are employed to ensure connections between different actors involved in the network. Institutional design strategies on the other hand are aimed

at changing the characteristics of the organisations involved in the network. Examples are allocating resources to particular organisations, providing capacity training, etc. There are also studies, however limited, that include SNA into their analysis of Cohesion policy. These studies focus to some extent on the direct, indirect and embedded connections, which were discussed in cycle 3 of the PNA (see section 2.1.3).

The three network strands - direct, indirect and embedded connections

There are a couple of studies including SNA in their analysis. Mostly they use SNA to map the network in place for implementation and degree centrality to measure the activity of the organisations. As will become evident after this section is that these studies analyse the type of organisations that are included and their activity. They, however, do not link the structural properties of these networks to actual performance of EU cohesion policy.

A special issue in regional and federal studies in 2004 focusing on EU cohesion policy included SNA centrality measures in their analysis of implementation. These studied mapped the domestic policy-making structures/policy network in regions in Greece (Getimis and Demetropoulou 2004), Ireland (Rees, Quinn, and Connaughton 2004), Portugal (Nanetti, Director, and Rodrigues 2004), Hungary (Kovács, Paraskevopoulos, and Horváth 2004) and Poland (Czernielewska, Paraskevopoulos, and Szlachta 2004). These studies using SNA tried to determine the regional institutions capacity for learning and adaption, in other words, to analyse the extent to which regional structures have taken up the inclusion of non-governmental actors in their policy-making activities. They compare Central and Eastern European countries and the Cohesion countries (Greece, Ireland and Portugal). They highlight that a dominant role of political parties goes hand in hand with relatively low levels of non-state actors involvement and that civic culture and social capital endowments may

influence the policy environment, and thus increase the levels of non-state actors' participation (Paraskevopoulos and Leonardi 2004). Within this special issue they included the SNA measure degree centrality and compared this across the different case studies.

Also Paraskevopoulos (2001; 2005) using SNA offered an explanation of the possible variation in actors' cooperation and the effective participation in Cohesion policy at the regional level. His study highlights the importance of the social capital existing in each region as a determinant of the performance of actors' networks, since by 'affecting the formation of actors' preferences, [it] facilitates the stability of intra-network relations and hence the learning and adaptation processes within institutional networks, which, in turn, function as an intervening variable between actors' preferences and policy outcomes' (2001: 261). By including centrality and network density measures he concludes that even if there is a weak social capital present in the region, the external impetus coming from Cohesion policy enhances the connections between organisations.

A Belgian (SEE and COMASE 2010; 2013) focusing on different operational programmes analysed the inclusion of different stakeholders in projects. One interesting finding they highlighted was that the inclusion of the number of partners was beneficial to cooperation within the project up to 5 stakeholders, after that the inclusion of an extra partner did not have a positive effect on the perceived effect of collaboration. Showing the limitations of the degree centrality hypothesis.

More recently, Jordana, Mota, and Noferini (2012) included SNA in their analysis of Cohesion policy in Spain, at the programming stage. They argue the externally introduced procedural decision of the partnership principle can have different impacts within regions, and thus different impacts on effective policy-making processes. Analysing the networks for policy

design in Galicia and Murcia, they found that the networks for implementation were different in terms of structure. With Galicia having a more centralised network, with governmental units showing a relevant central positioning in the network, while a more bottom-up dynamic in Murcia indicates a more pluralistic and integrative network of policymaking (Jordana, Mota, and Noferini 2012).

In conclusion, as can be noted from this review, the literature focusing on Cohesion policy uses SNA to map the structures of policy making to identify the actors included in the policy process. They do not link these structures to the actual performance of the policy.

2.3 Research question and hypotheses

Grounded in the above reviewed literature, the following research question is developed:

Is working in partnership and thus creating a collaborative network for the implementation of public policy beneficial for policy outcomes?

Based on the review of PNA and regional and Cohesion policy studies focusing on partnership and network-approaches to implementation, it is evident that studies in regional and cohesion policy discuss features of network activity but do not directly link them to the performance of policy. While studies focus on the inclusion of non-governmental actors in the policy making process, and use SNA measures like direct connections, indirect connections and embeddedness, they do not relate these network structures to the performance of policy. Indeed, SNA techniques are beginning to be applied to these policy fields, but crucially, as this review made clear, they have not been used for the empirical

analysis of the relationship between network-based approaches to implementation and Cohesion policy performance.

This shows a clear gap in the literature that this research will try to address. This research uses the case of EUCP in Scotland (See Chapter 4) to address this question. To answer the overall research question, three hypotheses based on network position are hypothesised to have a beneficial impact on performance. The first hypothesis relates to the extent to which an actor has direct connections within the network. The second hypothesis refers to the indirect connections of the actor, as information and know-how can spread through indirect connections as well. The third hypothesis refers to the extent to which an actor is embedded in the network. Table 2.5 provides an overview of the research question and the three hypotheses.

Table 2.5 Research question and hypotheses

Research Question	Do network based approaches to implementation improve the performance of public policy?
Hyp1	More direct connections lead to higher project performance
Hyp2	More indirect connections lead to higher project performance
Hyp3	Stronger embeddedness among project partners lead to higher project performance

2.3.1 The advantage of direct connections to policy performance.

The first hypothesis concerns the direct connections of an actor. Within a policy network, having connections to other actors in the network can be important as it opens access to the resources, information and technical expertise of other organisations. Organisations rarely have all the sufficient resources to pursue their activities and reach their goals on their own. Therefore organizations collaborate to exchange resources, providing own resources that

are abundant to others and acquiring resources that are scarce. The more an actor acquires the necessary resources, the more likely the actor will be able to accomplish its goals or improve performance. Access to resources and information makes an actor more informed about the issues, challenges, and opportunities in its policy field. This argument is reflected in regional policy and the Cohesion policy place based argument that supports the inclusion of different actors in policy making and implementation as a means of informing policy, building capacity, and ultimately improving performance (Barca 2009; SEE and COMASE 2013).

Studies that look at policy implementation report the benefit of network activity (measured in degree centrality). Within these studies scholars find that the number of network contacts is a significant contributor to an actor's success in a variety of program contexts, including education performance (Schalk, Torenvlied, and Allen 2010), improved implementation of economic development programs, increased adoption of best watershed management practices, and greater funding success for collaborative initiatives (Lubell and Fulton 2007); Lubell and Fulton 2007;). O'Toole and Meier (2004) have demonstrated that higher network activity measured in degree centrality has positive effects on the performance of superintendents and student performance in their district - conditional upon a certain degree of homogeneity of resources and environmental stability.

This relationship between network activity and performance, can also apply for the implementation of collaborative public policy programs. Network activity yields a surplus value for organisational performance as it improves organisational and environmental resources. Thus, high levels of activity in the inter-organisational network provide organisations with access to many other organisations – and hence to more, and more diverse, resources and information. Within collaborative public policy programs, this

'activity' is measured by participation on projects. If a project has more partners, it has more access to resources and information. Degree centrality of a project node measures, then, the number of partners affiliated with the project, this is equal to network activity or degree centrality of the project in a two-mode network (Borgatti and Everett 1997; Shrestha 2013).

Literature in the 2nd cycle (see Section 2.1) and certain studies in the 3rd cycle (see Section 2.1) demonstrated the effect of leadership and management to policy performance. Network managers, either from a governmental organisation or non-governmental organisation, can shape the relations within a network. How a network manager is positioned in the network can shape its ability to perform the management of the network. As it has more experience of working on other projects, it can apply the lessons learned in the project that he currently manages. Therefore, this research, besides the direct connections of the project, also includes the direct connections of a project manager. The second hypothesis therefore holds that the degree centrality of the manager/leader of the project has a positive relationship with project performance.

Recent studies have also indicated that the relationship between networking and performance is not always linear (Hicklin, O'Toole, and Meier 2008; Torenvlied and Akkerman 2014; SEE and COMASE 2013). The purpose of network-activity is to attract and acquire more resources for the organisation/project. The environment and the relevant network actors, however, do not have infinite resources. Although network activity should result in considerable payoffs much of the time, there could be a limit to these payoffs – meaning that there at some point there is nothing, or at least less, to gain from more external interactions. Thus, the first hypothesis to be tested by the research is:

Hypothesis 1: the centrality of a project positively affects its performance, but will have marginal returns when networking increases.

1a) The degree centrality of a project positively affects its performance (local centrality).

1b) The degree centrality of the lead applicant positively affects its project performance.

1c) We also expect that there is a limitation to the positive relationship.

2.3.2 The advantage of indirect connections to policy performance

Next to direct connections, indirect connections can have a positive influence on the performance of policy. In many collaborative situations, connecting to a key experienced actor, rather than making efforts to create direct ties with many other actors, can be efficient in terms of a cost–benefit calculation (Y. Lee, Lee, and Feiock 2012). Maintaining direct relationships with many actors is time consuming and resource intensive. Therefore being connected to a single organisation that has many connections to other projects (i.e. a high degree centrality) is, arguably, beneficial for a project. These highly connected actors, can potentially identify solutions and resolve problems that are faced by the project, based on experiences gained in other projects (Berardo and Scholz 2010; Shrestha 2013). Especially in regional and Cohesion policies is this argument discussed. Economic opportunities according to Eagle et al., (2010) are more likely to come from contacts outside a tightly knit local friendship group. Thus the inclusion of well connected actors, or actors that control information flows between subparts of a network can be beneficial for the overall performance of projects. Eigenvector centrality and betweenness centrality are measures that capture the indirect connections of a node based upon the centrality of its connections.

Granovetter (1973) argued that weak relations (indirect and informal) give greater access to new information and opportunities. He claims that strong ties (direct) restrict information flows from outside sources. Granovetter proposes that weak relations (these indirect ties) serve as a 'bridge' to other social groupings, holding information and resources that are not present in ones direct social circle (Salman and Saives 2005). Eigenvector centrality is a centrality measure that captures theses indirect links. Based on the idea that an actor can be central because of the centrality of the actors to which he has an relation. A project within Cohesion policy can be central through association because it is indirectly connected to another actor that is highly central in the network. Indeed, a project or Lead Applicant can be highly central with only a few ties if the organisations to whom they are linked are highly central in the network.

Related to this, it can be beneficial to performance when a project is acting as a bridge between actors that otherwise are not connected with each other. This is the structural hole proposition of Burt (1997; 2000; 2001). In this way, information and insights from different policy sectors come together and allows for a more flexible and adaptable network. These actors are said to have the potential to act as brokers or gatekeepers of information within the network.

Both these relations also hold for the lead applicant. Besides the indirect connections of a project, the indirect connections of the lead partner in the project can prove to be influential for the performance of the project. As the lead partner connects with more central organisations rather than many organisations, it can still gain all the resources, knowledge and know-how necessary for performance, while saving time and resources on connecting

with many organisations in the network. Similar, when a lead partner acts as a 'connector' between parts of a network that otherwise would not have been connected (betweenness centrality) then performance of its project is arguable better. Thus the second hypothesis proposes that the indirect connection of an lead partner is beneficial for the performance of its project.

Hypothesis 2: Indirect connections of a project positively affects its performance

H2a: The eigenvector centrality of a project positively affects its performance

H2b: The eigenvector centrality of a lead applicant positively affects project performance

H2c: The betweenness centrality of a project positively affects its performance

H2d: The betweenness centrality of a lead applicant positively affects project performance

2.3.3 The advantage of being embedded to policy performance

Although the involvement of more partners and having key experienced organisation as a partner can help to expand a project's access to information, resources, and know-how, there is a potential trade-off. These gains might be offset by potential conflicts and increased difficulties in dealing with a diverse set of partners. This is clearly featured in the argument within Cohesion policy that network approaches to implementation add complexity (European Commission 2005; Wostner 2008; Roberts 2003). This trade-off is also featured in Burt's (2000) discussion of network capital. Burt (2000) argues that the benefits of cooperation are more likely to enhance performance of projects, when partners restrain from opportunistic behaviour. Commitment of resources and information must be credible in order to benefit the project (Coleman, 1990). Obviously, the benefits of more partners will

not be realised when the partners move in different directions, and utilise their specialised resources to bargain for their narrow interests over collective benefits (Shrestha 2013; Reagans and Zuckerman 2008). Thus the third hypothesis argues that project performance improves when the project is based in a cohesive and embedded network.

An important mechanism to reduce transaction costs while ensuring agencies' credibility and reliability is the building of mutual trust (Schalk et al., 2009). Mutual trust between organisations will encourage the conviction that a partner will act in accordance with the agreements made, act as a group, restrain from opportunistic behaviour, and are credibly committed to the success of the project. Performance is expected to be better for agencies with trustworthy network relations (Provan and Sebastian 1998). Putnam (1995) and Coleman (1988) argue that densely clustered network structures reduce the cost of control by overlapping information that circulates in the network about each other's behaviour. This threat of detection and punishment of non-cooperative activity increases the chances of cooperation (Feiock & Scholz, 2010). Regardless of the organizations' characteristics, organizations are anticipated to participate in this tightly clustered network structure to enhance credible commitment.

Trust between organisations is encouraged when they share multiple and overlapping relations. Network analysis defines cohesive subgroups as a set of actors who are all strongly tied to each other by a relation with a specific strength. For example, studies on the Dutch education system found that schools when having strong ties to cohesive subgroups have higher student performance than schools that do not (Akkerman, Torenvlied, and Schalk 2012; Schalk, Torenvlied, and Allen 2010). Schalk et al (2010), identify these trustworthy relations within the network structure as cohesive subgroups. Cohesive subgroups are mutual and overlapping relationships, in this sense the relations of an actor become

embedded within the network. Embeddedness of relationships means relationships that are strong (meaning that there is more than a vague connection) and closed (meaning that two organisations are also linked to a third organisation). In this way, third parties can know information about the behaviour of agencies. Consequently, an agency's reputation can be easily damaged when it provides incorrect information, insufficient resources, or withdraws from cooperation.

However, there is another side to embeddedness, which can be called over-embeddedness. Being too embedded in a network can confer constraints and pressure from the network on the actor that might be negative for performance. When a network member has so many linkages to other actors that it has difficulty operating independently or as network ties increase in number, they run the risk of overwhelming the ability of its members to actively participate in the network, these are potential drawbacks for collaborative management designs (DeLeon and Varda 2009; Eagle, Macy, and Claxton 2010). Thus, a curve linear relationship can be anticipated.

Similar to the direct and indirect connections hypotheses are these relationships expected at the level of the project and the lead partner of a project. The embeddedness of a project through cooperation amongst its project partners is expected to have a positive influence on performance as project partners gain trust and credibility. Related, the embeddedness of the lead partners relations are expected to have a positive influence on the performance of its project.

Hypothesis 3: Embeddedness and cohesiveness of the project is beneficial to its performance, however, we expect a curve-linear relationship

3a: The degree of embeddedness of the project is beneficial to project performance

3b: The degree of embeddedness of lead applicant is beneficial to project performance

2.4 Concluding remarks

This section has reviewed the literature in PNA, Regional policy and Cohesion policy with a focus on studies that utilise a network approach in their analysis. By combining evidence from these three sections, these concluding remarks summarise the analytical framework that informed the research questions and the three hypotheses.

The developments of PNA were divided into three cycles. Where the first cycle introduced compositional variables characterizing the actors in the network, the main debate in this cycle was whether networks were merely for interest intermediation, or a new form of governance, next to the hierarchical government and market mechanisms determining the price of common goods. The second cycle, further developed the second strand in the first cycle, as networks being a different mode of governance. It emphasized the influence of leadership and management. And introduced the conceptualisation of networks as dynamic entities. The third cycle, combined the compositional variables developed in the first and second cycle and added relational variables. Evidence from studies using SNA in several policy arenas suggests that policy networks play important roles in coordinating actions among decentralised actors (Agranoff and McGuire 2003; Lubell et al. 2002; Meier and O'Toole Jr 2002; Schneider et al. 2003; Provan and Milward 1995). These studies suggest that networking and network position have a positive effect on all policy contents;

nevertheless there is a lack of studies that go beyond a single case study, or include different policy areas in one study. In addition, they are not conclusive to what extent a specific network structure is beneficial to a certain type of performance. However, they indicated three main features of network structure that potentially influences the spread and quality of information, and therefore the possible outcomes of a policy. These features are present in regional and Cohesion policy debates.

The review of regional and Cohesion policy, even though some studies include SNA measures, identified a clear gap in this body of literature. These studies focus on the advantages and disadvantages of including organisations into the policy process, or on the question if there is a real network approach to implementation. This discussion is related to the debate that occupied the first and second cycle of PNA studies. These cycles focused on the changing relations between state and other stakeholders as well as the role of government in managing these new network approaches to implementation. They developed the concept of meta-governance to describe the changed role of the state. Government roles have not reduced, instead its role is still prominent within the implementation through networks, as it can determine the rules of the network (see section 2.1.2). However, these studies in regional and cohesion policy have not moved into cycle three of the PNA literature. While there are scholars in the USA that incorporate SNA, the European literature focusing on regional development and Cohesion policy is lacking this development. Second, these studies mainly focus on explaining the tendency to collaborate, e.g. they explain why certain organisations cooperate. They have not yet extended the analysis to actually link these structures to outcomes of regional policy. Thus, there are a limited number of regional and Cohesion policy studies that apply SNA, and link these to policy performance.

By reviewing these studies the general research question that was developed is:

- Do network based approaches to implementation improve the performance of public policy?

To answer this question, three general hypotheses were formulated. They focus on network activity, by connecting to many actors within the network; indirect connections, being able to indirectly reach greater part of the network; and embeddedness, the extent to which an actors partners are also connected to each other. All three of these variables are hypothesised to have a positive influence on policy performance. The next chapter will set out how the methodology to answer the main question and how the three hypotheses will be tested.

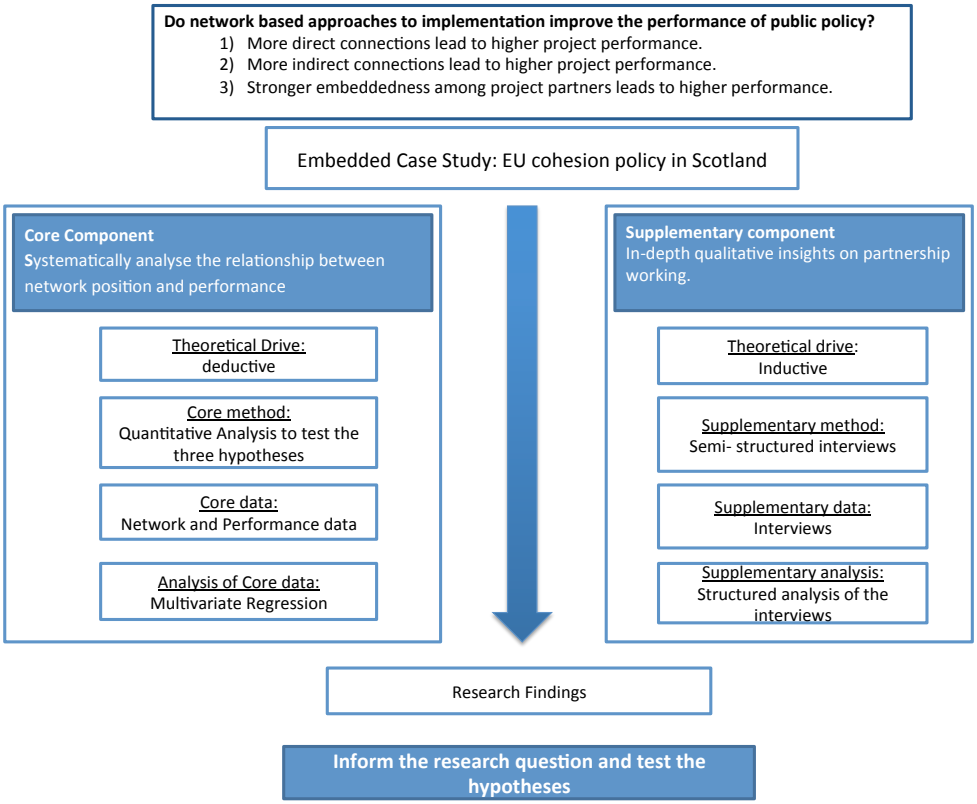
3. Research Methodology

This chapter presents the methodological aspect and the research strategy of this thesis. A combination of methods is used to answer the question if there is a relationship between networking based approaches and project performance and the more specific hypotheses established in Chapter 2. The methodology for this study is a mixed-methods approach (see figure 3.1). Morse and Niehaus (2009) argue that a mixed methods design should consist of a 'core component' and a supplementary component. The core component of this thesis aims to explore the relationship between different network characteristics of a project and its performance. For measuring such relations a quantitative analysis of the collaborative network and performance data is the most appropriate method. Network data are collected using SNA and performance data is gathered from an external database. The theoretical drive for this component is deductive. However, to understand how these results are perceived in the contextual situation of policy implementation, semi-structured interviews with project managers are more appropriate. For this 'complementary' component, the theoretical drive is inductive. In this way, there is more scope for synthesis, triangulation and multiple perspectives on a similar topic (Della Porta and Keating 2008).

The thesis combines a qualitative, in-depth case study and semi-structured interviews with quantitative SNA and statistical analysis. It has been argued by various scholars that SNA can be integrated effectively with other statistical and qualitative methods (Edwards and Crossley 2009). Moreover, Kapacu, et al (2014) recently after a review of the state of network analysis in public administration, calls for more mixed-methods research. Qualitative research can provide in-depth information that quantitative network research

cannot capture, for example, the barriers or the rationale to collaboration. This multi-dimensional approach for analysing performance for Cohesion policy is innovative, as it extends the use of SNA in Cohesion policy, and is able to focus on the relationship between relational network variables and the performance of Cohesion policy.

Figure 3.1 Components of the research design



The following sections discuss the data collection, variable construction and the analytical procedure for drawing conclusions, in all three approaches. Section 3.1 sets out the reasons for the single case study approach. This includes the introduction of the research case study, Cohesion policy implementation in Scotland. Section 3.2 provides a description of the process of semi-structured interviews with Cohesion policy project managers in Scottish programmes. Section 3.3 discusses the quantitative dimension of the research methodology

and describes how SNA techniques are applied to the case study, including the statistical approaches used for analysing the SNA data. This section will further elaborate on how SNA can be combined with PNA to produce a research methodology capable of 'filling the gaps' in the literature identified in Chapter 2; exploring the relationship between network-based implementation approaches and Cohesion policy performance in Scotland. Section 3.4 operationalises the variables used in the quantitative component of this research. First the two dependent variables are operationalised - financial performance and physical performance of Cohesion policy projects. By focussing on two different aspects of performance this research is able to compare and contrast different network figurations leading influencing different aspects of performance. As the dependent variable determines the appropriate statistical model for analysis, section 3.4.2 first discusses the Tobit and Binary Regression models used for analysis. Second, this section will discuss the operationalisation of the network variables (direct-, indirect- and embedded connections) and the control variables used in the models.

This methodology, by combining qualitative and quantitative components of analysis within one embedded case study, offers an interesting and innovative methodology for analysing network-approaches to policy implementation. By distinguishing between two aspects of performance, this research methodology sets up an interesting strategy for analysing the relationship between structural network features and policy performance.

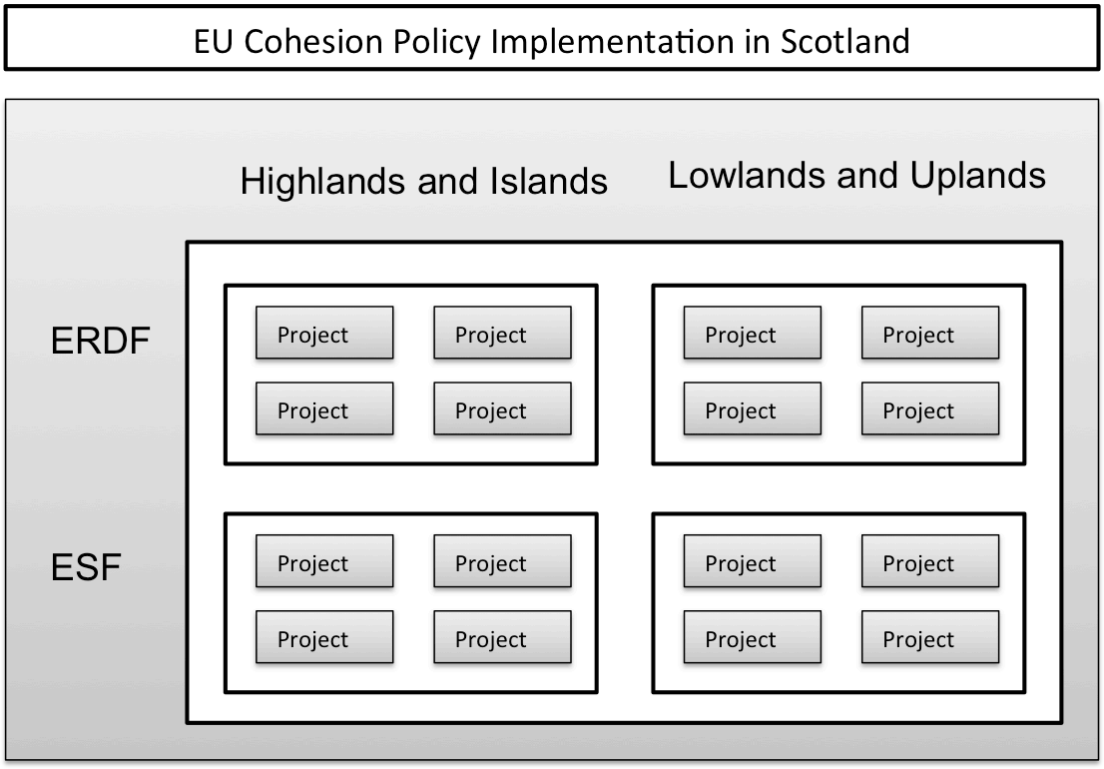
3.1 Embedded Case Study: EU Cohesion policy in Scotland

The research is based in a single case study: Cohesion policy implementation in Scotland. This research focuses upon one case study in order to carry out in-depth analysis and achieve comprehensive understanding of the implementation of EUCP in Scotland. By first

focusing on the institutional arrangements within Scotland, a detailed picture of the key actors, and the developments of EUCP within Scotland is established. A single case study, in comparison to a multi-case study, allows more emphasis to be placed on the project level interactions of implementation.

A crucial distinction must be made between holistic and embedded case studies (Yin, 1994, p. 41). A holistic case study is shaped by a thoroughly qualitative approach that relies upon narrative, phenomenological descriptions. Questions of why and how are important, and causal mechanisms are explored. Embedded case studies, in contrast, involve more than one unit, or object of analysis and usually are not limited to qualitative analysis alone. In an organisational case study, for example, the main unit may be the company as a whole, and the smallest unit may be departments, groups, or even individuals. For this research, the main unit is Cohesion policy implementation in Scotland, but the smallest units of analysis are the projects that are implemented under this policy. Figure 3.2 represents this model graphically. An embedded case study approach allows for the analysis of multiple units (e.g. projects) within the case study of Cohesion policy implementation in Scotland.

Figure 3.2 Embedded case study of EU Cohesion policy in Scotland



Based on desk-based research, a mix of policy and academic resources is drawn together to contribute to the analysis in a variety of ways. The first step is to create an overview of the Scottish economic situation and regional and urban disparities, identifying the underlying context and the socio-economic issues that Cohesion policy is designed to address. The second step is to set the Cohesion policy management arrangements in Scotland and review the findings of evaluations of partnership approaches in Scotland. The results of these data are presented in Chapter 4 as part of the presentation of the Scottish case study, justifying why Scotland, and especially Cohesion policy in Scotland, is a pertinent case for studying policy networks and partner-based approaches in policy implementation.

The reasons for choosing Scotland and the case of EUCP implementation are elaborated on in Chapter 4. But it is worth briefly noting them at this stage. First, Scotland has a relevant economic context: due to considerable changes in its economic situation and a shift in

industrial structures, Scotland has had to develop new economic activities and structures over the past five decades. This has resulted in new economic networks, and existing partnerships of economic and public actors had to be reoriented or replaced. Second, within the UK, there have been successive governmental reforms since the 1980s. These developments decentralised or devolved some policy responsibilities to Scottish institutions, this prompted reorganisation of the established hierarchy of government support to economic development, broadly moving toward a policy model with more focus on pooling resources and bottom-up and endogenous economic growth. Third, Cohesion policy strengthened these processes. Cohesion policy allocated funding for regional development requires to be implemented according to EU regulations and principles, including partnership and subsidiarity. This has arguably consolidated the above mentioned processes that were underway in Scotland. As a result of these factors, Cohesion policy implementation in Scotland provides a collaborative mode of design and delivery. This makes Scotland a robust case study for analysis of network-based forms of implementation.

A methodological approach that draws on existing literature and policy evaluations to create insights into Scottish regional development policies and underlying structures for policy implementation has several advantages for this research. First, policy reports and evaluation provide a wealth of important information. A series of evaluations of domestic and EU policy implementation in Scotland is available. Many of these documents provide official evaluations agreed upon by the Scottish government and the European Commission. However, they are based on compromises, presenting an overall beneficial picture of the implementation of Cohesion policy. Therefore, they may lack critical or alternative views that may exist between different stakeholders of Cohesion policy. Thus besides policy evaluations also academic accounts of the implementation of Cohesion policy, or

developments in regional policy in Scotland were used. These sources often are able to provide a more critical and nuanced position than policy evaluations.

Other sources that benefitted the thesis were working at EPRC and having close contacts with the Scottish Government. Working at EPRC, an internationally known consultancy company based in Scotland, provided close accessibility to Cohesion and regional policy experts and facilitated access to policy reports, and other outputs such as presentations that continuingly informed the thesis. Moreover, being at EPRC provided a research environment that was embedded in wider Cohesion and regional policy debates, which benefitted the thesis. Related, having close contacts with the Scottish Government, in the form of monthly meetings with the regional and European policy specialist, gave important insights into the Scottish case, its changing relations as well as future prospects. By drawing on these different sources, a comprehensive, balanced picture of the Scottish context as well as interesting analytical framework could be produced.

3.2 Semi-Structured interviews of Project Managers

Interviewees were targeted to provide in-depth insights into the partnership working within each project as well as to get the perceptions of how the projects and partners fit within the overall network of Cohesion policy. The insights gathered in these interviews contributed to an initial look into the process of collaboration for the implementation of Cohesion policy. The results from this analysis are presented in the case study chapter, in order to complete the in-depth analysis of Cohesion policy implementation in Scotland. For a full list of the interviewees see Annex E.

Interviewees were targeted and identified with the aim of including comprehensive Cohesion policy perspective. This framework takes into account the two different geographical areas designated under Cohesion policy: Lowlands and Uplands; and, Highlands and Islands. It also includes the two different Structural Funds; ERDF[6] and ESF. In addition, the analysis covers the different priorities implemented in Scotland; these include Research Technology and Development (RTD) and innovation, Small Medium-sized Enterprises (SME) competitiveness, Low Carbon and Renewable Energy, and Economic and Social Inclusion). Different priorities are characterised by varied institutional settings as well as diverse objectives and this influences the characteristics and functions of partnership structures and processes. These four strands consist of the 14 priorities implemented in across Scotland with both the ERDF and the ESF (See section 3.4.2).

In addition to field research, important evidence and insights were obtained through informal networking and on-going monthly meetings with the Scottish Government. Ongoing personal contacts with regional policy researchers from European Policy Research Centre (EPRC) allowed for useful insights and advice regarding Cohesion policy implementation. Moreover, an evaluation study conducted by Alec Fraser and Associates in the period January 2013 and May 2013, where the author was allowed to participate in discussion, add questions to the questionnaire, and be present when the interviews were conducted add to the insights and knowledge of Cohesion policy in Scotland.

The main drawbacks of semi-structured interviews relate to the costs and the time required to do them: organising, preparing, interviewing, transcribing, coding and analysing all require substantial resources. Additionally, the data collected are less analytically rigorous

[6] ERDF and ESF are two funds under Cohesion policy. the projects under study are funded by these funds.

than a fully structured interview and this does on occasion cause problems with data comparison (Aberbach and Rockman 2002: 674). Nevertheless, nuanced insights into collaborations for the implementation of projects cannot be obtained otherwise.

The interviews were conducted, based on a questionnaire that was structured to provide insights on the relationship between the independent and dependent variables explored in the quantitative analysis. A section of the questionnaire explored the type of actors included in a project network: are networks based on cohesive, embedded structures with actors who share similar roles or objectives or do they consist of looser formations of more disparate organisations? Another section explored the autonomy of actors involved in networks in order to gain insights into the role of leadership and the vertical or horizontal nature of network structures. The questionnaire also included questions on resources and formality: were networks based on the direct exchange of material or non-material resources or were network ties more indirect?

This resulted in 33 interviews covering £121 million of the funding. Taken together this represents 17% of the total funding allocated to Scotland in 2007 -2013. These interviews include key partners in the Scottish case, bodies that received a block of funding in order to implement projects: the Community Planning Partnerships (CPPs) in the Lowlands and Uplands (LUPS) area, Scottish Enterprise, Highlands and Islands Enterprise, and the University of the Highlands and Islands. In addition to these organisations, individual projects were selected to strengthen the insights into the implementation of Cohesion policy in Scotland in the 2007-2013 period. These projects varied in funding levels from those that received £90,000 up to those that received £12million of Structural Funds support.

The analysis of the data was carried out by using cross-cutting, thematic assessments of the interviews. By looking for patterns and themes as well as gaps in the data, conclusions were drawn. The responses of the project managers were contrasted, compared and analysed first. Second the interview notes from meetings with a representative from the Scottish Government were included in the analysis. The responses to the questions of the semi-structured interviews give rise to a discussion of key findings that are discussed in Chapter 4 as part of the presentation of the Scottish case study. Conclusions are drawn from the main findings.

3.3 Social Network Analysis: Relational Data

SNA is increasingly utilised to map and analyse the structures of policy networks. The utility of SNA is recognised throughout the social sciences. It has been applied in many fields, mapping the structures of, for example, small groups, trade patterns among nations, but also coalition formation and decision making processes (Borgatti et al. 2009) (cf. Wasserman and Faust 1994). The application in policy analysis of SNA has been recognised as a valuable opportunity to strengthen the policy network literatures, but it does not translate across directly to policy networks. Policy network analyses, are not only concerned with the interactions between various stakeholders, it has a specific interest in the utility of policy networks as a mode of governance, and therefore the impacts of networks on the outcomes of policies. Policy network analysis explores how policy networks can be employed as a policy instrument that is not only effective, but potentially also efficient in producing policy outcomes. To make SNA useful for analysing policy outcomes, social network data needs to be complemented with other data. SNA on its own, analyses and maps out the structures between different actors. PNA focuses on the network structures and the outputs these structures produce.

SNA is conceptually different from non-network explanations as it includes concepts and information on relationships among units in a study (Wasserman and Faust, 1994, p.6). Social Network Analysis focuses on ties, for example, among, people, groups, organisations or countries. These ties combine to form the network, which is the main focus of analysis. It aims to understand social organisation by focusing not just on social entities, but also by including relations among these entities into the analysis. The mechanism for explaining consequences of social network variables involves the direct transmission of resources from actor to actor. When two actors are linked, something flows between them, whether this is a physical transfer of money or material resources, or the transmission of ideas, data or principles. The underlying idea is that the two actors are connected and influence each other. There is the adoption mechanism where, actors adopt similar perceptions, ideas and opinions where they have similar social environments. Because of similar relations in the network actors can have the same level of outcomes, or the same perceptions about certain topics. The binding notion is that by connecting one actor to others new information can be combined to create something new (Borgatti et al. 2009).

Where traditional social sciences research explains individual outcomes as a function of other characteristics of the same individual, (e.g. income as a function of education and gender), social network analysis looks at the individual social environment for explanations. One set of research questions within social network analysis concerns the formation of networks: what is the basis of friendship ties, how do firms pick alliance partners, what is the basis for cooperation, for instance on joint projects or policy initiatives? More important for this research are questions that concern the outcomes of nodes and the performance of the actors involved. One of the fundamental arguments in social network research is that an actor's position in a network determines in part the opportunities and constraints that it

encounters, and in this way plays an important role in an actor's outcomes (Borgatti et al. 2009).

This section will set out how SNA is utilised in the research methodology. First it will give a description of the main concepts used in SNA. Second, it will provide detail on the data collection of the collaborative network for the implementation of Cohesion policy. Third, it will elaborate on the SNA measures used for the calculation of the variables.

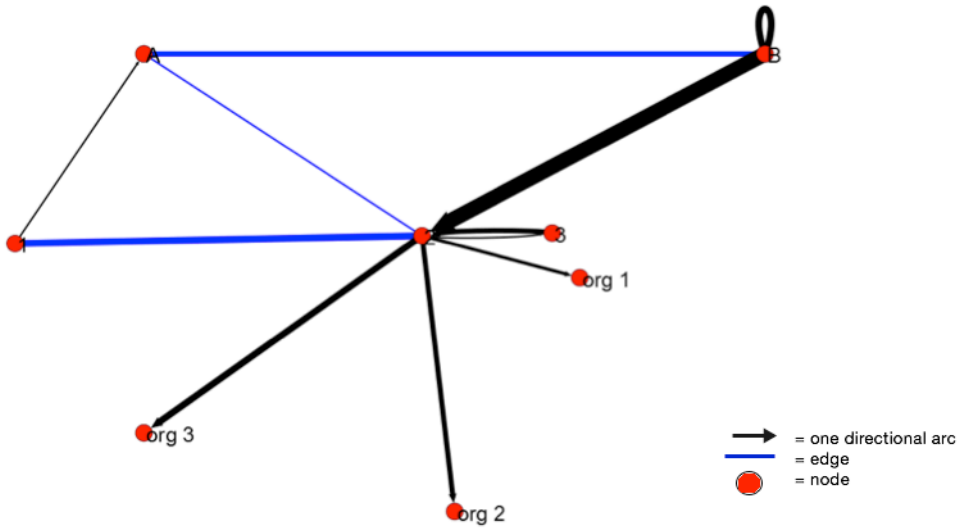
Description of concepts

Social network analysis builds on a number of basic concepts. The specification of patterns into propositions of social structure is what allows social network approaches to provide a collection of descriptive procedures to determine how the system behaves and statistical methods to test the appropriateness of the propositions (Wasserman and Faust, 1994, p. 22). The first concept to note is the 'actor'. Social entities are referred to as actors. An actor can range from a single individual to organisations, to a government, or any other collective social unit. The position of actors within the network is visualised through nodes. This brings us to the second concept, ties. Ties connect nodes to each other. Ties can be arcs or edges depending on whether the connection is mutual. Also, ties can be visualised with different widths depending on their strength. Another concept relates to actor attributes. Actors are considered to have certain attributes or resources at their disposal that they can employ when interacting with others in the network (for example, money, knowledge, type of organisation and other resources). Actors can be differentiated between on the basis of their attributes, and this can be visualised in the network.

Figure 3.3 illustrates how these concepts are represented in a network. In this case, nodes are red circles, ties can either be edges: blue lines or arcs; black lines with arrows or a loop

as is visualised with the ‘B' node, and attributes can be visualised through different sizes of nodes and different line widths of ties in a network graph.

Figure 3.3 SNA concepts in a Network



The attributes of the nodes and ties are the variables that dominated the first and second cycle of the PNA literature (See Chapter 2, section 2.1.1). They include the type of actors and their available resources. These are the compositional variables. In the third cycle, with the inclusion of SNA, research can now include relational variables. In this cycle, the position of an actor in the network, determined by its connections, is considered to be an explanatory variable. Relational variables comprise the ties between pairs of actors. Ties connect pairs of nodes in a social system. A pair of nodes and the ties between them is generally referred to as a dyad. In similar vein, the ties between three nodes are labelled triads. As mentioned before, ties can connect people, groups, organisations, or any other social unit that has been defined as an actor. These linkages can be directional, reciprocal and they vary in content, medium, and frequency. Ties are not only important because they represent a dyadic relationship, but also because they are part of the social network in which the dyad is

embedded. Ties give actors potential indirect access to others to whom the actor may not be directly connected. Ties can therefore not be attributed to a single actor, but are instead a joint dyadic property that exists only so long as both actors maintain their association. These relational elements of a social network can influence a single actor's behaviour. Furthermore, the relations between actors can affect the performance of the system in ways that cannot be attributed to this actor's individual characteristics.

Defining the network: data collection

Before analysing a network, or even collecting data, limits to the network have to be set. This means determining what type of relations are considered, and where to draw the border of the network. For this research to study the collaborative implementation network of Cohesion policy in Scotland, formal relations of the whole network are taken into account. These formal relations consist of projects and their partners. Information concerning which organisation works on what project was collected from the Scottish Government database: EUROSYS. This database is an information management system that monitors the application and progress of the Cohesion policy in Scotland. Each project that wants to receive EUCP funding has to fill in multiple application forms. The stage-2 application form includes a section on partnership, where the project applicant has to list all the other organisations that work on the project. Data collection through EUROSYS ensured the availability of data on 722 projects.

An extract of an application form is provided below (Table 3.1), it is made anonymous but it concerns a project in Fife. Based on these applications, the partner organisations of 722 projects were collected. With the help of a scripted file written in Python programming language this information was transformed into a PAJEK readable file. PAJEK transforms this

information into an incidence matrix or an affiliation matrix to capture the structure of the network as a bipartite network. This is also known as a two-mode network as the rows and columns of the matrix refer to different sets of data, in this case projects and organisations.

Table 3.1 Extract of project application and resulting network data

The applicants are ***LEAD APPLICANT*** and ***Organisation 1***. ***LEAD APPLICANT*** will have responsibility for the physical and financial delivery of the project. *Organisation 1* will primarily be responsible for promotion of the site to inward investors as part of the overall promotion of Energy Park Fife ***Organisation 1*** and ***LEAD APPLICANT*** are both members of the Fife Economy Partnership, the public/private sector group responsible for growing Fife's economy. Set up in October 2008, the Partnership brings together key people from Fife's businesses and public sector organisations to identify and take forward policies and activities that help achieve the sustainable growth of Fife's economy. Members include representatives from the private sector, a number of whom are major players in the development of Fife's low carbon economy, along with the ***Organisation 2, Organisation 3, Organisation 4*** and the public sector. Renewable energy has been identified by the Partnership within its Fife Economic Strategy 2009-2020 as one of two key sectors that have the greatest growth potential in terms of output and employment. **NETWORK DATA:** Project Reference – LEAD APPLICANT Project Reference – Organisation 1 Project Reference – Organisation 2 Project Reference – Organisation 3 Project Reference – Organisation 4

The constructed network

By collecting the data in this way, a two-mode network (or affiliation network) for Cohesion policy implementation was visualised and constructed, based on organisation affiliation with a project. When data collection is based on group membership, such as working on a project, then two types of nodes are collected. For instance, this arises when researchers collect relations between classes of actors, such as persons and organisations, or persons and events. A way to analyse and visualise these two types of actors in a network is to make a partition between the two groups of nodes. This is particularly useful when the ties of one

set of nodes can only be connected to nodes in the other set. This is the case when a network is collected according to which organisation works with whom on which project. A project node cannot be linked to another project node, and an organisation node also cannot have ties with another organisation node. This type of network is called a two-mode network or an affiliation network and is visualised in Figure 3.4 where the yellow circles are one set and the green circles are the other set. No yellow circle is connected to another yellow circle and there are also no ties between the green circles. Figure 3.5 shows a different visualisation of the two-mode network, to make clear that there are no connections between the sets.

Figure 3.4 Two Mode network

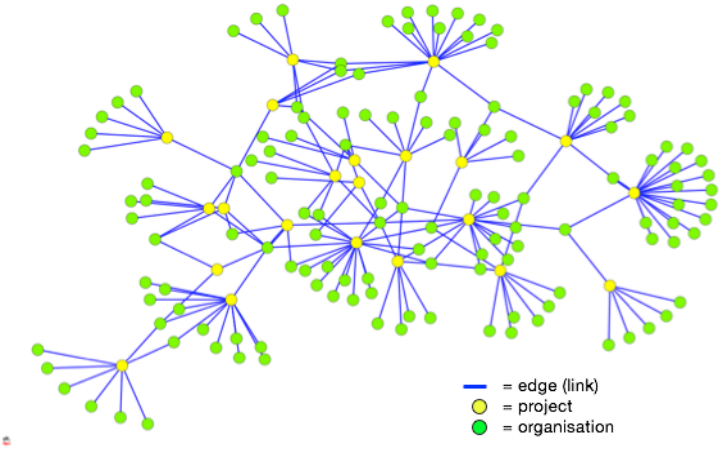
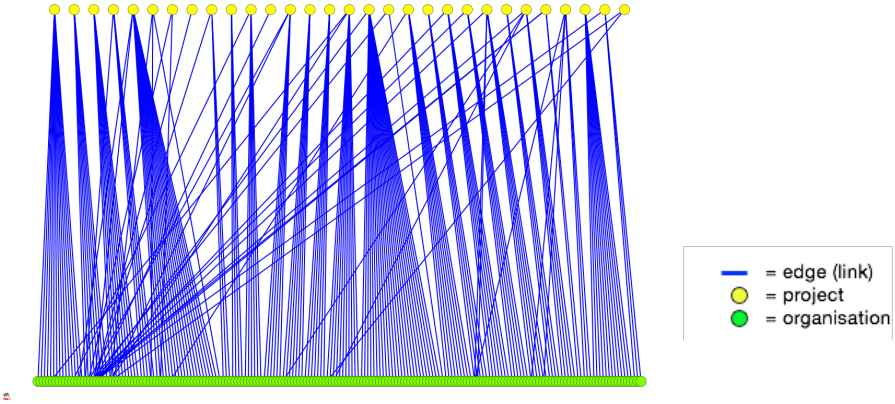
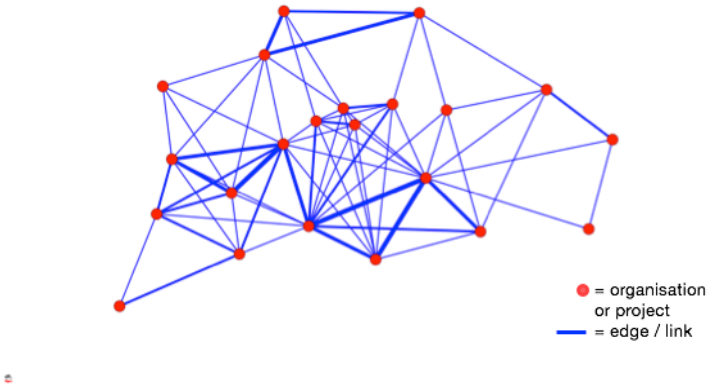


Figure 3.5 Two-mode network different visualisation



For the analysis of direct connections and indirect connections, this two-mode network is used. For the analysis of embeddedness we transform this network into a 'one-mode network'. A one-mode network can easily be derived from a two-mode network by connecting the organisations with each other if they have attended the same event, or members when they are part of the same institution. Figure 3.6 is the one-mode network derived from the two-mode network in Figure 3.4. This One-mode network now only includes organisations. These organisations are linked with each other when they share a project.

Figure 3.6 One-Mode network



The ties of the network

This collected two-mode network includes the formal ties of working on a project as the formal relationship between project and organisation and the ties are undirected. By including official formal ties, rather than informal ties, a collaborative network of organisations, rather than individuals, within a network is analysed. This has another benefit, as working together on a project is arguably stronger than informal connections (for example, meeting at conferences, talking on the phone, or meeting at other meetings). When collaborating to implement a project, organisations need to work together and share the coordination of project application, project implementation and project evaluation. The data that is used here does not provide enough detail to assess how much and what kinds of resources actually flow between the actors involved in the project. Nevertheless, one of the assumptions of project partnerships is that shared participation in these initiatives favours the transference of resources among partners. Of course, it is very likely that this transference exists in the context of shared participation in projects, but there is a lack of data on the quality or quantity of such a distribution of resources (c.f. Berardo 2009). The

ties between the nodes are undirected. This means that the relations between the actors and projects act in both directions. If organisation A works on project A, while in the same programming period, organisation A also works on project B, then it is assumed that the information and knowledge gathered in project A has the same opportunity to influence project B as well as the other way around – information gathered on project B influences project A.

Some methodological caveats should be noted at this stage. There are other options for data collection. One is the collection of ego-network data. Ego-network data involves asking the 'ego' or actor about its network members. This is more time-consuming approach and in addition, it would ask the same questions as that was already asked in the application in EUROSYS. One benefit of ego-network data is the possibility of asking about the quality of the network relation. However, due to the possibility of including 722 projects and that the Scottish government made the database EUROSYS accessible it was decided to collect information on the collaborative network on EUROSYS, rather than semi-structured interviews collecting ego-networks.

Another caveat for relational variables collected through a database is that they do not capture what people actually do in their interaction. It can be argued that mapping and measuring networks needs to be supplemented with more qualitatively sensitive forms of analysis. According to some critics, network analysis gains its purchase on social structure only at the considerable cost of losing its conceptual grasp upon culture, agency and process. It provides a useful set of tools for investigating the patterned relationships between actors. These tools, however, by themselves fail ultimately to make sense of the mechanisms through which these relationships are reproduced or reconfigured over time

(Emirbayer and Goodwin 1994). Thus, combining statistical social network methods with more qualitative approaches, as this research does, facilitates deeper analysis.

Measures of SNA

There are many ways to analyse network data. One method that is used is to understand networks and their participants, is evaluating the location of nodes in the network. Measuring the network location is about determining the centrality of a node. Freeman (1979) found that centrality has an important structural influence on leadership, satisfaction and efficiency. The centrality measures used in this research are degree centrality, betweenness centrality, eigenvector centrality and Kcore. These four measures are linked to the hypotheses described in section 2.3; direct connection, indirect connections and embeddedness. This section operationalises the variables that capture these hypotheses and thus the link between the SNA measures and the hypotheses becomes clear. Table 3.2 shows which SNA measure is linked with which hypothesis.

Table 3.2 Hypothesis and related SNA measures

Hypothesis	SNA measure
1. The advantage of direct connections to policy performance	Degree centrality
2. The advantage of indirect connections to policy performance	Eigenvector centrality; Betweenness centrality
3. The advantage of being embedded to policy performance	K-core

Degree centrality

Degree centrality is the simplest and easiest way of measuring node centrality in the graph. The degree of a node is the number of other nodes directly connected to the node. Degree of a node is calculated in terms of the number of adjacent nodes, thus the degree can be regarded as a measure of local centrality. However, it is not meaningful to compare a node with a score of 40 in a network of 100 nodes with a node of score 7 in a network with 10

nodes, as in a smaller network there are less possible connections to make. In order to have a more general measure for comparing degree centrality Freeman (1979) proposes a normalized measure. This measure normalizes the actual number of links by the maximum number of links it could have. In practice, an actor with high degree centrality can influence a group by withholding or distorting information in transmission. The degree centrality is also an indicator of an actor's communication activity or popularity (Abbasi, Altmann, and Hossain 2011). In other words, degree centrality indicates the extent to which the focal actor has relations with others (Wasserman and Faust). Isolated agencies have a degree centrality of zero, whereas the maximum possible value is N – 1 relations, where N is the number of agencies in the network

Betweenness centrality

Betweenness centrality captures the number of times a particular node lies 'between' the various other nodes in the network. This measure, which is called betweennes centrality is defined as the number of shortest paths between all pairs of nodes that pass through a given node (Borgatti and Everett 1997). Betweenness is an indicator of the potential of a node within the role of a broker or gatekeeper. By being the broker or gatekeeper to other sections of a network, it can control the frequency of information flows in a network.

Eigenvector centrality

Based on the idea that a node is more central if it is linked to nodes that are themselves central, it is argued that the centrality of a node does not only depend upon the number of its adjacent nodes, but also on the values of centrality of these adjacent nodes. A node which is connected to many other nodes that are themselves well-connected, has a higher eigenvector centrality and a node connected to nodes with fewer connections has a much lower score.

Kcore

A k-core is a maximal group of actors, all of whom are connected to some number (k) of other members of the group. To be included in a k-plex, an actor must be tied to all but k other actors in the group. The k-core approach is more relaxed, allowing actors to join the group if they are connected to k members, regardless of how many other members they may not be connected to. By varying the value of k (that is, how many members of the group do you have to be connected to), different pictures can emerge. K-cores can be (and usually are) more inclusive than k-plexes. And, as k becomes smaller, group sizes will increase (Hanneman and Riddle 2005).

3.4 Operationalising the variables for the statistical Models

This section sets out the statistical models used to test the three hypotheses established in Chapter 1. The variables that capture these hypotheses are calculated through SNA measures and were discussed in section 3.3 of this chapter. This section will first discuss the operationalisation of the dependent variables. Second, as the level of measurement and data generation process of a dependent variable determines the proper model for data analysis, the two different multivariate regression models that are used will be considered. This includes a discussion of a Tobit and a Binary logistic regression model. Third, a brief discussion of the operationalisation of the control variables used in the model will be specified.

3.4.1 Dependent variable: Performance of EU Cohesion policy projects

Operationalising a measure to assess performance in Cohesion policy is complex. Complexity arises because Structural and Cohesion Funds programmes are implemented under a common regulatory framework, but in widely differing national and regional circumstances with varied institutional arrangements for managing and delivering regional development policy. There are three particular reasons that make measuring performance difficult. First, the performance can be assessed on different levels. Second, the projects have to be co-funded by other sources of funding, which makes the projects subject to different evaluation criteria. Third, there is a range of problems associated with the output and outcome indicators used in Structural Funds programs.

The evaluation of project performance within one member state has its difficulties. First of all, there are different levels to assess performance on. There are different Operational Programmes, which consist of different priorities. These priorities are compromised of a range of interventions – targeting physical infrastructure, economic infrastructure, business development, human resources, research, technological development and innovation, environmental improvement, tourism and community development – through a mix of financial instruments and many different types of beneficiary. Thus there is not one level that measures performance. In order to evaluate these levels different output and results indicators are developed. Most often, each level has its own indicators. Making aggregations and comparisons difficult.

Second, structural funds have to be co-funded. EU support has to be co-financed with national public or private funding that may originate in several different organisations or schemes. This means that Structural Funds projects are subject to at least two different evaluation criteria. In some cases the EU can provide 100% of the eligible costs of the financing for a programme or project, but the general rule is that the beneficiary (whether a

public authority, SME or research entity) also contributes to the cost through ‘co-financing’. Thus one project usually has multiple sources of funding with each fund different criteria for evaluation.

Third, there are different problems associated with the use of output and outcome indicators used in Cohesion policy implementation. Measuring the changes in the problem to be addressed by the policy and relating these changes back the objectives of the policy, is a common problem in public policy implementation evaluation (Sabatier and Mazmanian 1980). However, within Cohesion policy, reporting of achievements was almost non-existent in the 1989 - 1993 programming period. Over time, programme authorities developed targets and indicators, both for outputs and results. Although, this development was not undertaken systematically or comprehensively across all regions, monitoring processes improved, as did the sophistication of targeting, the attention paid to economic results and choice of output indicators. However, the reliability of indicator data remains problematic due to definitional, recording, aggregation and analytical flaws (Bachtler, Mendez, and Oraže 2014). Ferry (2013) concludes that the EU indicators in the Cohesion policy programmes have been mixed and applied inconsistently, preventing comparison across countries and aggregation to EU level. Also the conclusions of the European Commission's Fifth Cohesion Report call for the setting of "clear and measurable targets and outcome indicators" which need to be "clearly interpretable, statistically validated, truly responsive and directly linked to policy intervention" (European Commission 2010; Ferry 2013). The combination of large amounts of expenditure, contested decisions on its usage, and different projects with different outputs and indicators has been reflected in the creation of a more extensive EU evaluation regime over the past decade. Current evaluation methodologies range from ‘bottom-up’, survey-based assessments of project and beneficiary outcomes to ‘top-down’, input–output models of aggregate programme impact, as well as process studies of

Structural Funds implementation. However, the uneven quality of monitoring data on which many evaluations have had to rely, the difficulty of isolating effects attributable to EU funding, and other methodological problems and limitations mean that some of the reported results have been treated with scepticism, in particular the degree to which national or regional convergence is attributable to Cohesion policy recipients (Ederveen, de Groot, and Nahuis 2006; Sapir et al. 2004; Tarschys 2003). This is a fundamental challenge for Cohesion policy as evaluations must respond to the varied interests of different stakeholders including the European Commission, national governments and regional government bodies, the Programme Management Executives (PMEs), and the programme partners (Taylor, Bachtler, and Polverari 2001).

Currently there are two aspects of performance prominent in the debates on Cohesion policy. On the one hand, the absorption capacity of the member states, in other words the ability to spend the allocated funding is perceived as an important issue. On the other hand, the ability to actually deliver high standing projects that have an impact on the regional development, in other words, the ability to produce results, is a significant part of current debates.

The absorption capacity of a Member State is an important aspect in evaluating cohesion policy performance (Tosun 2014). Absorption capacity is defined as "the extent to which a Member State is able to fully spend the allocated financial resources from the Structural Funds in an effective and efficient way" (NEI 2002, 2). This is important because, under the automatic de-commitment principle, if a sum committed to a programme has not been claimed by the end of the second year following the programme's adoption (or the third year in the case of EU10 Member States) any unpaid money ceases to be available to that programme. The absorption capacity of a member state is dependent upon the ability of the

projects to spend their allocated money. The ability of the Member State to spend the allocated funds is related to the macro-economic situation, the co-financing situation and administrative capacity of programme managers and the selection of projects. The selected projects have to spend the money. Each project sets out in their application what they are expected to spend, and keep track of all their expenses for each project year. Therefore, the first aspect of 'performance', financial spending, is conceptualised as the spending profile of the project. In other words, the percentage of the budget a project is able to spend before the end date of the project.

The second aspect of performance of a project is the extent to which it delivers against promised outputs. Projects are selected because they are set to create jobs, create space for business activity, support individuals in gaining a diploma or work experience, or support research networks. Output indicators measure the physical progress of a project against targets set at its launch. It is worth noting that such a measure of performance is particularly important in the ongoing debate in the context of a shift in the 2014-2020 EU financial perspective towards a stronger 'results orientation'. The shift is in response to criticisms of Cohesion policy regarding the lack of tangible results, which is becoming increasingly debated in the current context of crisis and austerity.

Operationalising project performance

Recognising these concerns and complexities, this research will analyse the financial and physical performance indicators of Cohesion policy. In addition, it will include qualitative insights of contextual factors that influence performance in projects. This combination of these different aspects to performance offers a comprehensive analysis of performance in Cohesion policy.

The Scottish Government made the data on the financial and physical performance indicators of projects available. The financial performance of the projects is readily accessible on EUROSYS. However, project performance in terms of physical output and outcomes is aggregated in EUROSYS. Therefore, Scottish Government officials have disaggregated this data to project level data. This was done in July 2013, resulting in 519 projects on which we have network data as well as performance data.

From this data, two performance measures are calculated. The indicator for financial performance is based on the indication of spending that was set at the commencement of the project. Then based on the actual spending of the project the financial performance indicator is operationalised as a percentage of the fulfilment of their commitments (e.g. what proportion of their allocated money did they spend). Physical performance is operationalised by making a binary variable of the percentage that measures the fulfilment of their set indicators. Thus, projects score 1 if they reached 70% of their indicator targets, and 0 if they did not. This is summarised in Table 3.3.

Table 3.3 Operationalising project performance

Financial performance	Percentage of allocated funding spent within the perceived timeline
Physical Performance	Binary variable of the percentage of outputs reached. 1 if they reached 70% of their indicators, 0 if they did not.

Financial performance

The financial performance data consists of the amount of money spent each time the project submitted a claim to the Scottish Government for payment. In official evaluations, the spending of the projects is considered at the end of the programming period and not necessarily at the end of the project period. However, this research considers the ability of a project to spend its allocation within the set time as the dependent variable, as this makes comparison between projects possible. Otherwise projects that started in 2007 would have more time than projects that started in 2010. Also, from the perspective of a government the ability of the project to spend within its set time is beneficial, as they have the overall responsibility to allocate the funding to different projects and ensure that the funding is actually spent at the end of the programming period.

Physical performance

Physical performance is operationalised by adding all output and result indicators and calculating the proportion of target indicators, which were set at the launch of the project, that are fulfilled. This is done in order to facilitate comparison between projects, as projects report against different output indicators. Thus, the outputs of the projects are conceptualised in terms of the extent the project achieves its set outputs. At the selection phase, projects are obliged to set out the amount of output indicators they are going to achieve. At the end of the project period, the amount of outputs achieved is measured and calculated as a percentage of the target set from the beginning. Moreover, to qualitatively distinguish between a project that achieved 78% and 80% of its indicators is difficult. Therefore the percentage of physical performance is transformed to a binary variable. In this way, it there are only two possibilities, either a project performs well with 70% or more, or a

project performs not well, with 69% or less. In this way a measure is constructed that is comparable among different projects.

A limitation to this approach is that all the outputs of projects are aggregated together. Another approach would be to select groups of projects that perform against a set of the same output indicators. For example, Priority 1 and Priority 2 of the Highlands and Islands ERDF programme perform against the same set of indicators. All the other priorities have different outputs. Another limitation as is discussed above is a common criticism that variation between targets and outputs may be due to unrealistic targeting rather than poor delivery. Despite these caveats, the use of physical performance indicators provides another dimension to the analysis of performance. While the ability to spend the money is valuable, the ability to deliver worthwhile projects that contribute to regional development is also a crucial aspect of performance that is important to include into the analysis.

3.4.2 Multivariate regressions used: Tobit and Binary Logistic regression

The level of measurement and data generation process for operationalizing the dependent variable determines the choice of model for data analysis. As financial performance is operationalised as a limited continuous variable, and physical performance as a binary variable, this research uses a Tobit regression and a Binary logistic regression model.

The use of Regression models is helpful in understanding and testing complex relationships among variables. Linear Modelling techniques, such as Ordinary Least squares (OLS) regression, are appropriate when the independent variables are continuously or categorically scaled and the dependent variable is continuously scaled (Osborne 2008). However, the dependent variables used in this research are not operationalised as continuous variables.

Financial performance of Cohesion policy projects, one of the two dependent variables used in this research, is measured between 0% and 100%. This is a limited dependent variable and therefore the Tobit model is the most appropriate model to use. Tobit models refer to regression models in which the range of the dependent variable is constrained in some way. In economics, such a model was first suggested by Tobin in 1985 (Amemiya 1984). The Tobit model is appropriate for analysing dependent variables that cannot take values below or above a particular limit. Censored dependent variables lead to biased parameter estimates in most statistical models, such as analysis of variance, linear regression, and multi-level or mixed linear models (McBee 2010).

Physical performance of Cohesion policy projects, the second dependent variable, is operationalised as a binary variable. A project that did not reach 70% of its indicators is assigned a 0, and all projects that did reach 70% or more are assigned a 1. A binary logistic regression analysis examines the influence of various factors on dichotomous dependent variables by estimating the probability of the event's occurrence. Binary logistic regression is typically used when the dependent variable is dichotomous and the independent variables are either continuous or categorical variables (Harrell 2013). For this research a binary logistic regression is chosen over a multinomial logistic regression due to the categorisation of the physical performance. As a binary variable, there is more clarity between a well and not so well performing project.

The network variables

As Chapter 2 made clear, from the literature on policy networks certain hypotheses can be derived about the relationship between networking and policy performance. This research has identified the relationship between direct connections, indirect connections and

embeddedness of connections as three crucial variables. In addition, the 2nd cycle of the policy network literature also identified a network manager, or a leader as a variable that could explain policy performance. Therefore, these three above-mentioned variables are operationalized on the level of the lead applicant as well as the project. These three variables are constructed using different SNA measures, namely, degree centrality, betweenness-centrality, eigenvector centrality, and Kcore.

Degree centrality

To operationalise the extent to which a project or a lead applicant maintains relationships with external actors, a direct count of its connections in the network is needed. Degree centrality is a SNA measure that measures the count of ties between one node and the other nodes.

For the project node this means that 'Degree.Centrality' measures the number of partners involved in its project. For the lead applicant there are two different operationalisations of degree centrality. The first one 'LADC' is the count of project in which the lead applicant is also the lead applicant. The second one, 'ProjDC', is a count of the number of projects the lead applicant is involved in. The degree centrality for the project node measures the size of the partnership of the project, e.g. how many organisations are involved in the project. For the project the degree centrality of the lead applicant node means: how many other projects is it connected to through the lead applicant. Thus, from how many other projects this project is able to get information, knowledge and know-how. Besides the general inclusion of the lead applicant in other projects the distinction is made between the connection to other projects through the lead applicant as a normal partner in the project and being the lead applicant of another project. In this way, the relationship between connecting to another project through a normal partner or a lead applicant can be tested.

The simplicity of degree centrality is its advantage. Only a node's local structure needs to be known in order to calculate this measure. However, there are limitations: the measure does not take into consideration the global structure of the network. For example, although a node might be connected to many others, it might not be in a position to reach others quickly to access resources, such as information or knowledge (Borgatti, 2005; Brass, 1984).

Eigenvector

Eigenvector centrality is calculated by assessing how well connected an individual is to the parts of the network with the greatest connectivity. Individuals with high eigenvector scores have many connections, and their connections have many connections, and their connections have many connections… out to the end of the network. Eigenvector centrality for the project node measures thus the extent to which the project is connected to organisations that are also working on other projects. This captures the variable 'Eigenfactor'. In this way, lessons learned from those projects are able to reach the vocal project.

Betweenness centrality

Betweenness centrality measures the frequency that an actor lies on the path between a pair of other nodes and connects them. In other words, a node with a high betweenness measurement is able to act as mediator in a network. To recapitulate, betweenness centrality informs us about the number of times an actor's position between two other actors is not otherwise linked without the node.

Freeman's betweenness centrality is calculated on the collaboration network; it only makes sense to measure centrality on interaction networks, and collaboration is typically based on

interaction (Freeman, 1979). Thus 'BTC', as a Lead Applicant indirect reach variable, measures the number of times the Lead Applicant is on the shortest path between two other actors. It is the most prominent centrality measure used to study power and dominance, as it indicates an actor's strategic position between other actors in the network. For a project having a lead applicant that has a high betweenness centrality means that the project is managed by an organisation that is central in the network and plays a connecting role between certain sections of the network. This can have a positive effect on the performance of a project as information from other parts of the network can be accessed by the project.

Kcore

The degree to which a project is embedded in the implementation network is measured by the SNA measurement K-core and is captured by 'Cohesive.Subgroup'. This measure calculates to which degree of embeddedness the project belongs. This measure is applied to the one-mode network of EUCP of projects that are connected to other projects, when they share partner organisations. This variable then measures the extent to which projects are connected to other projects by organisations and at the same time includes the amount of organisations that work on both projects. In this way the relationship and the connection between the projects becomes consolidated through the amount of organisations are shared by projects.

The degree to which a Lead Applicant is embedded in the collaborative implementation network is captured by 'Kcore' and applies the measure Kcore to the one-mode network of organisations that are connected to other organisations when they share a project. By including this variable the distinction between the strength or embeddedness of the relations of normal project partners and the lead applicant becomes clear. In other words, is

there a difference between the embeddedness of projects through 'normal' project partners, or is there a more positive influence of the lead applicant on project performance?

Control variables

In order to test the network hypotheses, the model needs to control for other 'environment' variables as they could influence the likelihood of better project performance and produce spurious relationships if excluded from the estimation (Becker 2005). Other studies when looking at EU cohesion implementation have taken into account different variables that might influence the relationship between network strategy (ties to partnering organisations) and performance of the policy. As this research looks at the project level of implementation, these variables were adjusted to make sense at the project level and thus the control variables that are included will be discussed in the following section. The control variables that are included in the models are; type of project, intervention rate, operational programme, priority, and type of Lead Applicant. The following sections will briefly operationalise these control variables, as well as describe, when needed, additional adjustments. In section 5.2 some exploratory analysis and descriptive statistics are given for the variables used in this research.

Type of project – revenue or capital

Within Cohesion policy a project can either be a Revenue or a Capital project. Based on this distinction there are different rules on eligibility of project activity. This is partly determined by what kind of project is implemented. This can be a capital project or a revenue project. The difference between the two is that a capital project is a project that under the eligibility criteria is able to purchase relevant items for the project, from purchasing land to

purchasing materials. Revenue projects are more limited, as they are able to fund consumables. For example, an evaluation in Wales of the 'increasing skills' thematic area found that projects that had to deal with procurement were delayed, especially if they had no previous experience with procurement (WEFO 2011). This signals that the performance of a project is dependent upon the type of activity it implements. Therefore the type of project is included as a control variable within this research and each project is classified as a capital or revenue project.

Intervention rate

The intervention rate indicates the percentage of Cohesion policy funding received by the project. Each project receives funds from either the ERDF or the ESF and other funding bodies. However, attached to these Cohesion policy funds is an eligibility criterion that determines what type of activity can be funded under Cohesion policy. Within a project, only that activity that falls under the eligibility criteria can be supported by Cohesion policy, and only a percentage of that activity. This amount is based upon an intervention rate established by the Scottish Government and agreed with the European Commission.

Operational Programme

Within Scotland there are 4 different Ops: ERDF in the Lowlands and Uplands, ERDF in the highlands and Islands, ESF in the lowlands and uplands, and ESF in the Highlands and Islands. These Operational Programmes have their own aims and objectives, and different priorities. Within Scotland there are 13 different priorities (excluding Technical Assistance which is aimed to support the implementation of other Priorities) with different types of project being implemented under each (see Table 3.4).

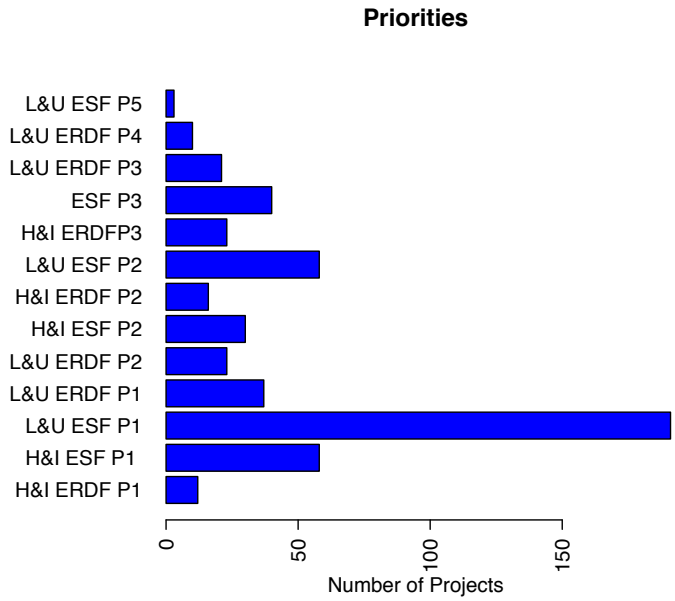
Table 3.4 Breakdown of Operational Programme and objectives

OP	Fund	Priority	Objective
H&I	ERDF	1	Enhancing business competitiveness, commercialisation and innovation
		2	Enhancing key drivers of sustainable growth
		3	Enhancing peripheral and fragile communities
		4	Technical assistance
H&I	ESF	1	Increasing the workforce
		2	Investing in the workforce
		3	Improving access to lifelong learning
		4	Technical assistance
L&U	ERDF	1	Research and innovation
		2	Enterprise growth
		3	Urban regeneration
		4	Rural development
		5	Technical assistance
L&U	ESF	1	Progressing into employment
		2	Progressing through employment
		3	Improving access to lifelong learning
		4	Technical assistance

Evaluations of priorities are mainly thematic studies where the thematic objectives of different priorities are combined. For example, in the Scotland case, Priorities 1,2 and 3 of ESF in both the Highlands and Islands and the Lowlands and Uplands, have as a common objective to increase the levels of skills in the workforce. This means these priorities have relatively similar projects that have the same objective.

For the ERDF priorities this is slightly more difficult. Business support for sustainable growth (Priority 2 ERDF H&I) includes different projects than, enhancing peripheral and fragile communities (Priority 3 ERDF H&I). Similar for the priorities in the Lowlands and Uplands, where urban regeneration can be considered different than the rural development priority (Priority 4 ERDF L&U) (see Figure 3.7)

Figure 3.7 Breakdown priorities and number of projects



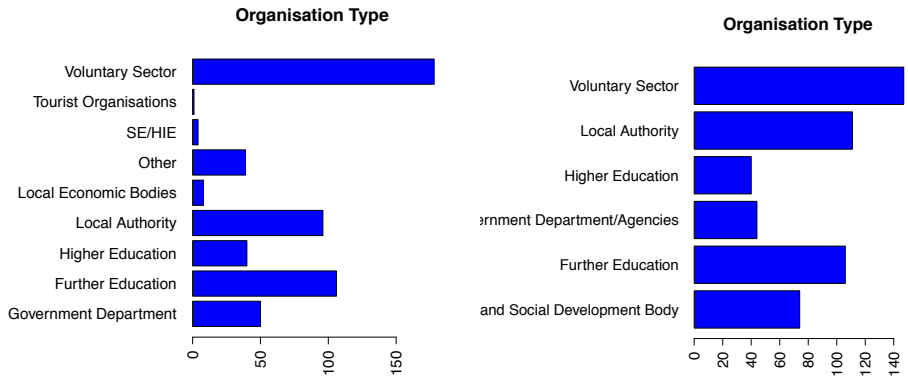
It is important to note that there are more projects in ESF P1 in the Lowlands and Uplands OP. This might influence the data when the model does not control for the different Operational Programmes or Priorities.

Type of lead applicant

Recent studies on organisational management have explored the link between organisational culture and performance (Scott et al. 2003; Michaela A. Balzarova et al. 2006). While it is beyond the scope of this study to further test this link, it can be assumed that different types of organisations have a different organisational culture that might be beneficial to the performance of projects. Therefore, this research takes organisation type as indicator to measure organisational culture. Within EUROSYS the type of organisation of the lead applicant is identified. EUROSYS defines 9 different organisation types: Government department, Further education, higher education, local authority, Local economic bodies, Scottish Enterprise (SE) and Highlands and Highlands enterprise (HIE), tourist organisations, voluntary sector and other. As these 9 categories were too extensive, and some

organisations could fit in both, this research uses a measure that consists of 6 different organisation types. This means that SE and HIE are in the new classification considered as governmental agencies. By revising the EUROSYS categories of tourist organisations, the SE/HIE, and the other category, a more compact measure is established (see Figure 3.8).

Figure 3.8 Operationalisation of Type of Lead Applicant



3.5 Concluding remarks

This chapter has set out to present the methodological aspects and research strategy of this thesis. It discussed the considerations for using the different methodologies used to answer the research question and to test the hypotheses.

Four different strategies are used; an embedded case study of Cohesion policy projects in Scotland, semi-structured interviews, SNA and multivariate regression analysis. It is argued that the combination of SNA and statistical analysis with semi-structured interviews, hence, a mixed-methods methodology with qualitative interview data complements the quantitative Social network data. The semi-structured interviews will give an initial insight into the project and the rationale of its partners for collaboration. SNA will capture, visualise and analyse the complete network for Cohesion policy implementation. The multivariate regression analyses will examine the relationship between network position of the project

and its Lead Applicant on performance, financial and physical. And the concluding chapter of this research will compare and contrast these findings to draw conclusions in the form of policy recommendations as well as theoretical contributions.

4. The Scottish Case Study: Institutional context and EU Cohesion policy

This chapter sets out the case study - Scotland, and introduces the organisation and their networks in place for the implementation of EU Cohesion policy in Scotland. These networks form the basis of the statistical analysis in Chapter 5. This chapter will first set out the three main strands for why Scotland is a good case study to analyse partnership- and network approaches to project implementation and performance. Second it will introduce the Cohesion policy context in Scotland. These sections discuss how the system of implementation for Cohesion policy in Scotland has involved under the influence of the European Commission and the Scottish Government. This is then related back to the concept of meta-governance set out in Chapter 2, section 2.1.2. Lastly this chapter will provide insights from the semi-structured interviews, to gain more in-depth knowledge of the operation of networks in the implementation of Cohesion policy in Scotland. These insights focus on the three hypotheses established in Chapter 2, namely the direct, indirect and embedded connections that surround the project and Lead Applicant.

Scotland is an ideal case for analysing partnership- and network approaches to implementation for regional development policy. This reasoning has three main strands. The first relates to the economic context. Since the late 1970s, Scotland has gone through considerable changes that affected its economic situation. Manufacturing industries – steel, coal, shipbuilding, heavy engineering and textiles – have declined and Scotland has had to transform its economy, turning towards new economic activities (Danson 1991). In addition, the economy of the Highlands and Islands of Scotland also changed. Due to its peripheral location, economic development within the Highlands and Islands faces different issues

compared to the Lowlands and Uplands of Scotland. This resulted in different area's of development as well as different networks for the implementation of regional development. This makes Scotland an interesting case concerning regional development, as new economic sectors and activities had to be developed, the linkages between industry and public policy had to be revised, and established industrial networks or partnerships reoriented or replaced. Second, on a UK basis, successive reforms dating back to the 1980s have decentralised or devolved some policy responsibilities, including under economic policy, to Scottish institutions and introduced new and more networked forms of governance. This inevitably prompted some reorganisation of the established hierarchy of government support for economic development where resource allocation in the forms of grants and subsidies was traditionally decided at the UK government level. Alongside this traditional approach, a policy focused more on pooling resources from the bottom-up and endogenous growth emerged. Especially in Scotland, there is a line of partnership-working that goes back to the 1970s: partnership-working has long been recognised as an important organisational approach to public sector management and governance in Scottish local authorities (Carley 2006). Third, Cohesion policy strengthened these processes. Scotland has received EU funding for regional economic development in Scotland since the 1970s and the 'partnership principle' in managing and implementing the funds has become increasingly prominent.

However, these motivations for partnership working are currently being reconsidered. The financial crisis is having an impact on the economic situation in Scotland but it is also prompting fiscal constraint and reductions in policy budgets. In this context, the costs of policy implementation are inevitably scrutinised and debates concerning the advantages and disadvantages of policy implementation through partnership are bound to be sharpened. Moreover, Scotland's institutional setting is still evolving: since the establishment of the Scottish parliament in 1999, there have been ongoing adjustments of policy-making powers

and institutional frameworks on which partnership-based approaches have been mapped, including under economic development policy. Indeed, 2014 witnessed a referendum where a vote on full Scottish independence was narrowly defeated. Finally, the funds available for Cohesion policy in Scotland significantly declined from the 2000-2006 period to the 2007-2013 period. Partnership arrangements have been modified to reflect anticipated changes in the level of funding available. This has already resulted in the 2007-13 period in the establishment a more centralised approach to implementing cohesion policy in Scotland. Organisations that carried out administrative functions for the delivery of Cohesion policy, instead of operating at arms-length from the Scottish government, are now under direct government control. A substantial part of EU funding now flows directly through domestic regional development agencies like Scottish Enterprise, Highlands and Islands Enterprise and other key organisations such as the University of the Highlands and Islands. All of this raises questions concerning the effectiveness of the overall network of Cohesion policy and, within this, of the quality of partnerships that are in place for the delivery of cohesion policy projects. Scotland, therefore, is a robust case study when it comes to analysing network-forms of governance.

The remaining section is structured as follows. The first section of this chapter will first set out the economic situation in Scotland, taking into account the restructuring of the country's industrial base since the 1980s and the implications of this from the perspective of partnership-working. The main economic indicators will be covered as well as other significant economic characteristics of Scotland. Second, the evolution of the Scottish institutional changes and policy response to these economic trends will be discussed, including the network arrangements that emerged. This shows governments are actively shaping the structure of networks. Third, this chapter will assess the influence of Cohesion policy, on institutional arrangements for development policy in Scotland. Last, this chapter

presents the qualitative insights gathered from the semi-structured interviews, which focus on direct, indirect and embedded connections, to complete the Scottish case study.

4.1 The Scottish economic context

This section analyses change in the Scottish economy over the past four decades as one explanation for the prominence of partnership working in economic development policy. From the early 1980s, the Scottish economy has undergone significant changes that have altered its industrial base (Sadler 1992; Danson 1991). This has had significant consequences for the established economic, political and institutional actors and networks. In addition, this reorientation of the Scottish economy has had varied territorial impacts across Scotland (Turok and Bailey 2004). From the perspective of this research, an important argument is that these processes have emphasised a 'bottom-up' policy focus where new networks and partnerships for economic development have become increasingly important.

An important distinction can be made between the economy of the Highlands and Islands and the Lowlands and Uplands of Scotland. Whereas the Lowlands and Uplands covers the core of the Scottish economy, the Highlands and the Islands face different socio-economic challenges and opportunities, that have led to specific networks and partnerships for the economic development of these more peripheral, parsley populated regions in Scotland. In particular the low population density and the high rate of population turnover act as a constraint to both social and economic development (Copus and Crabtree 1996). By reducing the opportunities for interaction, by adding to the costs of service delivery, low

population density is a problem that in particular the Islands of Scotland face[7]. Only during the 1970's there has been a population increase in the Highlands and Islands, with the exception of the most inaccessible islands (Copus and Crabtree 1996).

Historically, the area between Glasgow and Edinburgh, called the central belt of Scotland had an economy focused upon manufacturing, chiefly heavy industry and shipbuilding (Danson 1991). This economic structure was supported by the demand for steel during the two world wars became the main mode of economic production in Scotland. However, manufacturing in Scotland has shifted its focus in recent years with heavy industries such as shipbuilding and iron and steel declining in their importance and contribution to the economy. It is generally argued that this has been in response to increasing globalisation and competition from low cost producers across the world, which has eroded Scotland's comparative advantage in such industries over the latter half of the 20th century. A basic challenge has been to compensate for the decline in heavy industry in Scotland through the emergence of manufacturing in lighter, less labour-intensive products such as optoelectronics, software, chemical products and derivatives as well as life sciences (Purves 2012). Part of this challenge relates to the reorientation or replacement of traditional industrial networks and partnerships.

Similar to the central belt, also the Highlands and Islands region of Scotland witnessed a long-term decline in traditional industries, such as aluminium smelting, paper production, nuclear energy, off-shore fabrication and defence, all rapidly declining since the 1980s. A notable exception is the whisky production (Richardson and Gillespie 1996). Currently

[7] There has been a prolonged population decline in the Highlands and Islands. This began during the Highland clearances, when land owners turned from farming to sheep farming, forcing tenants to leave. This had a devastating effect on the Gaelic culture and clan society. (For more see for example Eric Richards (2012).

sectors such as agriculture and forestry, fishing and hospitality, as well as gas, electricity and water supply are important economic sectors for the Highlands and Islands (Scottish Government 2007).

A particular problem that the Islands and Highlands are facing is population decline and density. Even though the overall region's population is increasing as a result of in-migration, many young people leave the region to undertake higher education or find employment and do not return. At the early 90s there was a under-representation of the age band 20-44 and in particular the Shetlands and the Western Isles had a decreasing population (Richardson and Gillespie 1996). The University of the Highlands and Islands project established in 1990 is aimed at countering this trend, by providing university degrees to the people of the Highlands and Islands (Littlejohn et al. 2003). This difference between the organisations and networks involved in the Highlands and Islands and the Lowlands and Uplands becomes clear when the networks are visualised in sections 5.4, 5.5 and 5.6.

Concepts such as 'path-dependency' and 'lock-in' (Amin and Thrift 1995) explore the adjustment problem that mature industries and agglomerations are confronted with, emphasising interaction patterns between economic, political and institutional actors. These ideas are associated with the predominance of large integrated companies, which affect the regional labour market and local institutions. Amin & Thrift (1995) stress institutional thickness to explain the lack of adaptability. In this view, vested interests of a self-sustaining coalition of large firms, labour unions and local policy makers, are associated or 'locked into' traditional manufacturing industries. This ultimately leads to the failure of regional economies as inherited paths decay in the face of wider shifts in technologies and markets, resulting in large-scale devaluation and unemployment. Cho and Hassink (2009) more

recently showed that the difficulties of mature regions attempting renewal could be found in political, cognitive, and functional lock-ins, the latter being associated with networks:

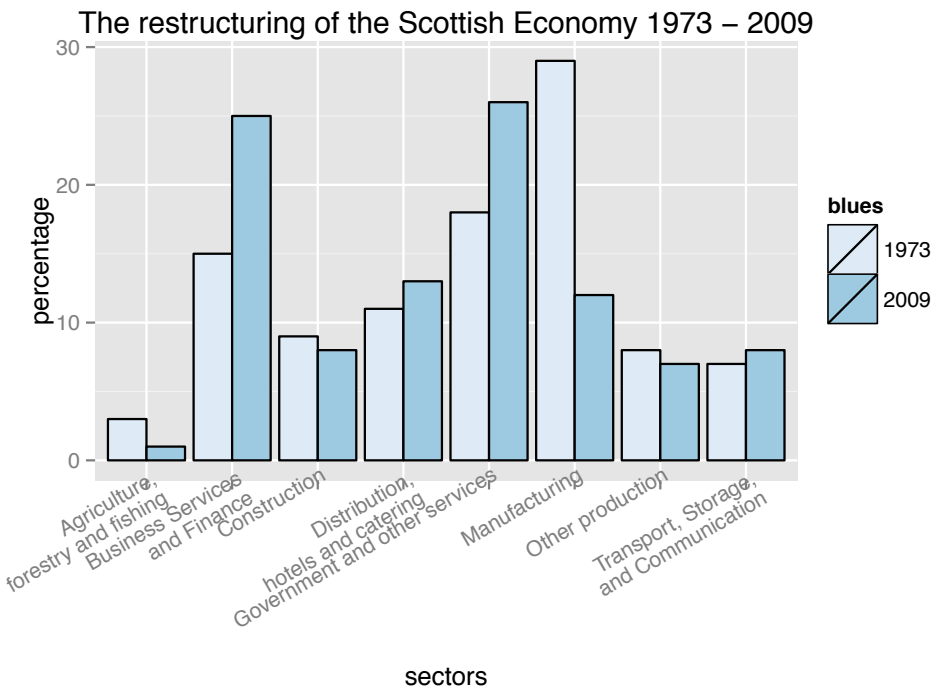
> "Local networks of dominant industrial production become so narrowly focused on a particular type of retrogressive economic activities that is unable to shift into new restructuring track" (Cho and Hassink 2009).

Such failure eventually results in the abandonment of locked-in paths and the establishment of new forms of development, including new networks and partnerships (MacKinnon et al. 2009).

This process can arguably be applied to the Scottish case, as its traditional state supported industry was replaced by a new development policy with more flexible arrangements for implementation. Scotland's conventional economy, consisting of the steel and shipbuilding industry, was heavily dependent upon public support in terms of grants and subsidies from the UK government. However, during the 1970's, employment in metal and metal using industries, - such as steel, metal goods, mechanical engineering, and shipbuilding and transport equipment - in all mature capitalist economies was moving into other sectors. In Scotland this industry, and particular it's main industrial base in the 'central belt', was declining. This makes Scotland one of the main examples of post-industrial decline (MacInnes 1995) and therefore a suitable case study as new network replaced the old-system of grants and subsidies.

As with many advanced economies, also in Scotland there has been a general shift from manufacturing towards an economy based on service sector industries. As Figure 4.1 shows in 1973, 29% of the Scottish economy consisted of manufacturing; in 2009 this was only 12%. The business services and finance sector, in contrast, increased from 15% in 1973 to 25% in 2009. Also Government and other services increased from 18% to 26%.

Figure 4.1 The restructuring of the Scottish economy

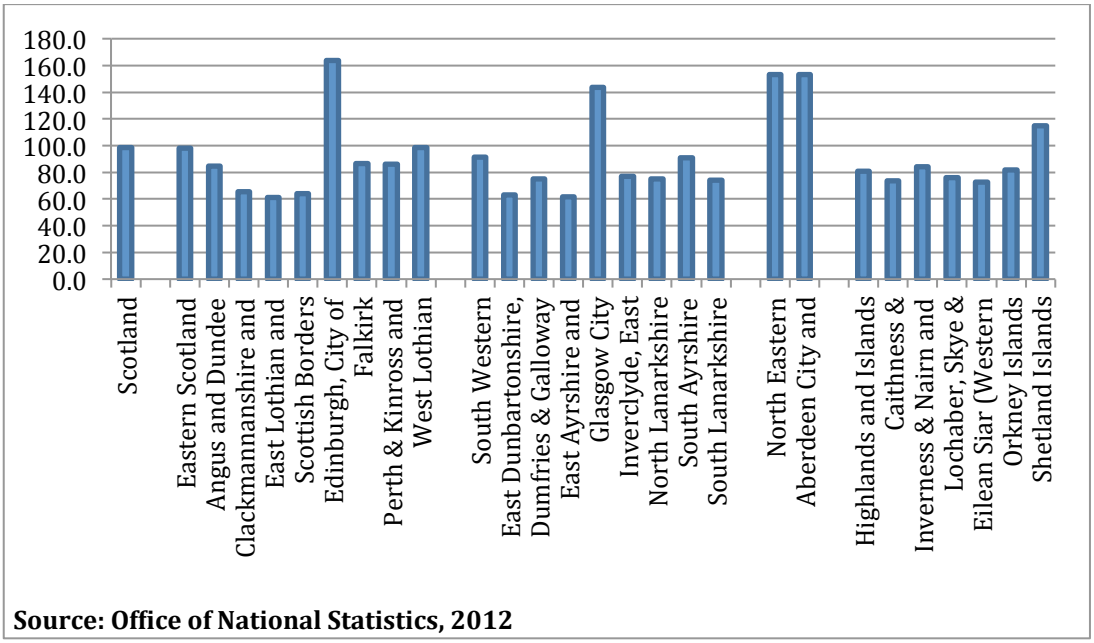


Source: adapted from Scottish Government (2013b).

The Scottish economy saw an increase in certain sectors and a decline in others. However, business services and finance as well as government services are sectors that are not labour intensive. Therefore, this overall decline of old industries included the emergence of substantial territorial disparities at local and regional scales. Job losses arising from this economic restructuring in the 1970s and 1980s disproportionally affected residents in outer council estates because of their physical isolation and economic infrastructure (Hastings 1996). While poor economic growth in the 1970s and 1980s was followed by a more prosperous time in the 1990s and 2000s, there are still highly concentrated areas of unemployment and low household income across Scotland.

In 2011, gross value added (GVA)[8] per head as a percentage form the UK average in Scotland was just below the UK average. The NUTS 3 regions with the highest GVA per head were the cities Edinburgh, Glasgow, Aberdeen and the Shetland islands respectively. GVA per head was lowest in East Lothian and Midlothian, East Ayrshire and North Ayrshire and Dumfries and Galloway (See Figure 4.2).

Figure 4.2 Gross Value Added in Scotland



Source: Office of National Statistics, 2012

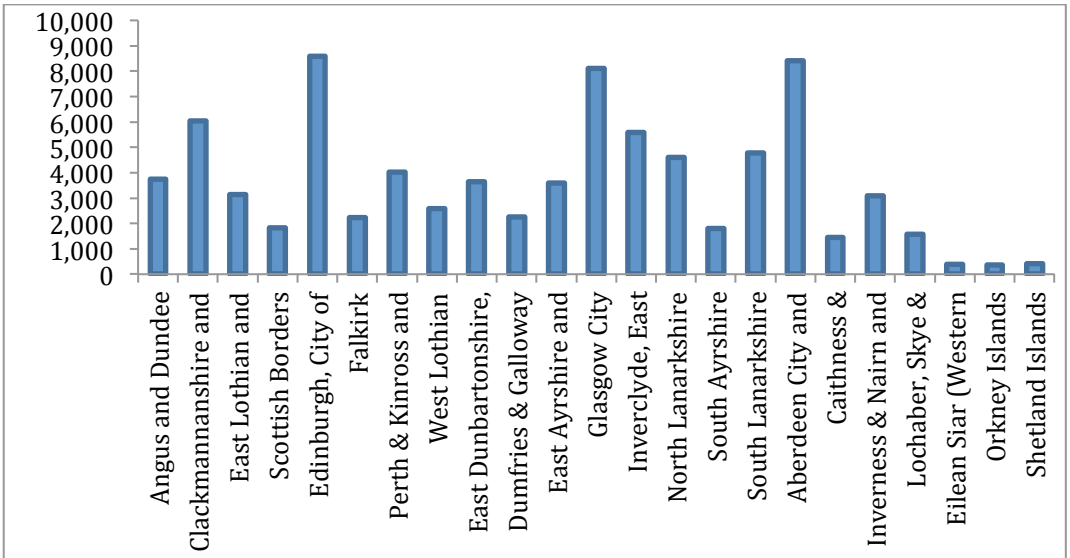
When looking at Gross Disposable Household Income (GDHI)[9] (See figure 4.3), again the three largest cities; Edinburgh, Glasgow and Aberdeen were the highest in terms of what a household has to spend or save after tax and housing costs have been deducted from their earnings and benefits payments. The lowest three NUTS 3 regions are clearly the Island regions in Scotland; Eilean Siar, Orkney and Shetland. This can be explained due to high

[8] Regional Gross Value Added (GVA) is an income-based measure of economic output of an area, mainly composed of the wages and profits earned as a result of production.

[9] GDHI, due to the inclusion of benefits payments is perhaps a better measure of living standards, than GVA, but less satisfactory as a measure for economic performance.

living expenses in the Islands, and the low population, as this graph shows totals, rather than per capita.

Figure 4.3 GDHI in Scotland

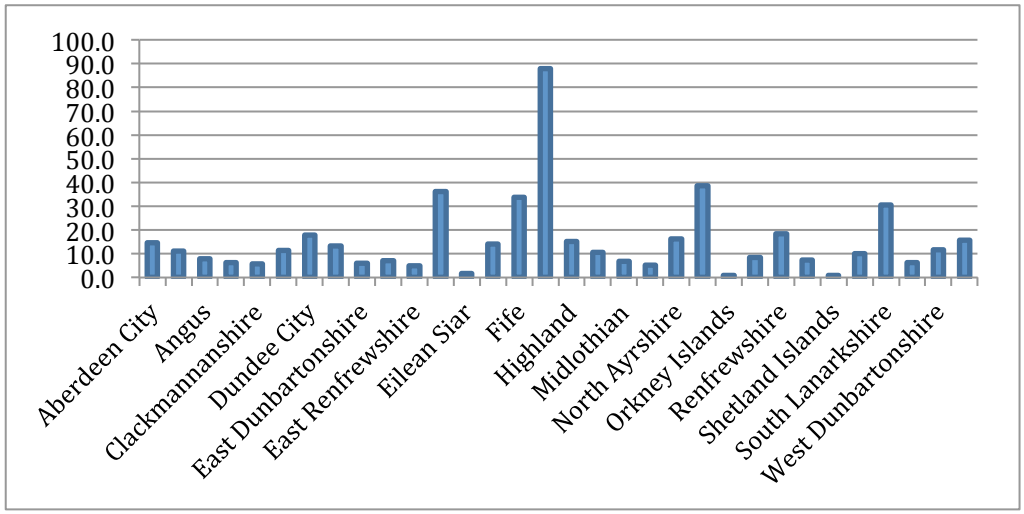


Source: Office of national Statistics, 2012

When looking at the total claimants on out of work benefits, Glasgow city centre has by far the highest number of people on out of work benefits. Especially compared to Edinburgh. Also surrounding area's such as North and South Lanarkshire, North Ayrshire and Renfrewshire show a high level of people on benefits (See figure 4.4).

This shows the diverging nature of regional economic development within Scotland. Combining economic activity, and disposable income with other labour market statistics a consistent pattern is revealed. There are significant differences between the city areas, the areas surrounding cities, specifically surrounding Glasgow or Dundee and rural and island areas and Orkney, Shetland and the Outer Hebrides are specifically different. As the following section will elaborate on, these regional area's or 'pockets' of significant unemployment triggered very local responses in the form of local networks.

Figure 4.4 Total claimants on out of work benefits in Scotland



Source: Office of National Statistics, 2012

The following sections will describe the changes in the UK and Scottish institutional setting as well as the policy responses to the challenges posed by these socio-economic processes. These institutional and policy responses included partnership and network-based approaches for regional and urban economic development and regeneration.

4.1.1 The Institutional setting

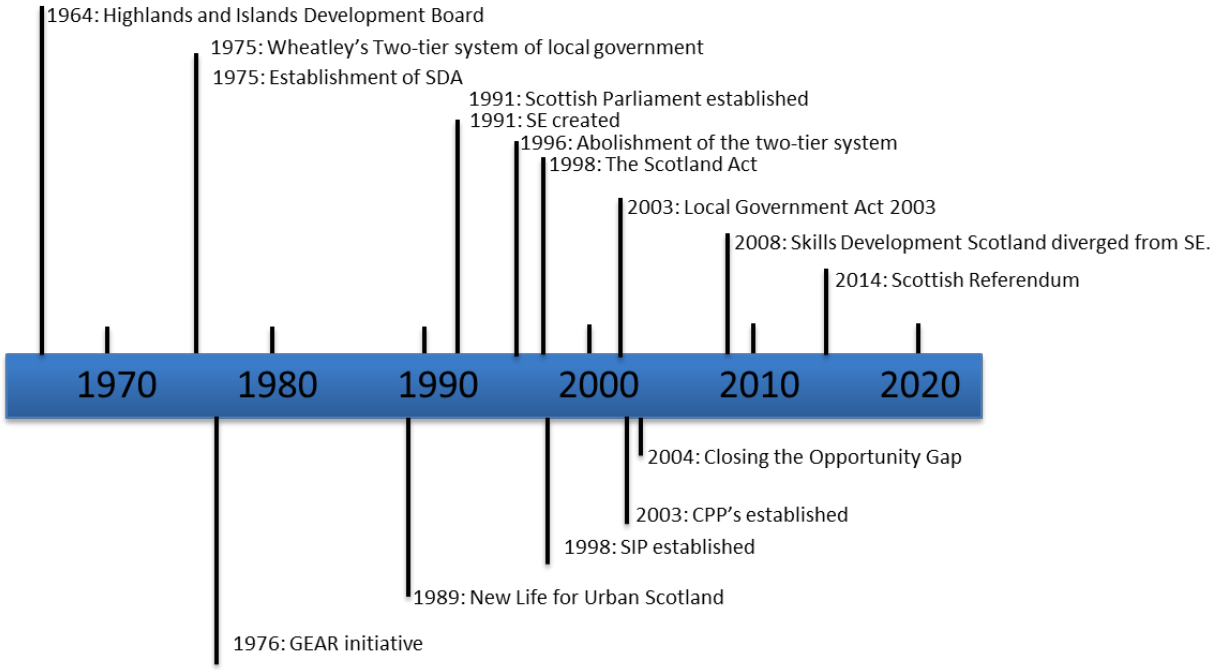
As early as 1885, with the establishment of the Scottish Office, Scotland, to some degree had a different institutional setting compared to the rest of the UK. From 1939 onwards, the Scottish Office, semi-autonomous from Whitehall, had responsibility for policies on education, law and order, agriculture and health. Its capacity in terms of economic development gradually increased. The 1990s saw an overall restructuring of the UK constitutional state as new institutional geographies emerged. The Labour Government that took office in 1997 established the Scottish Parliament, elected Assemblies for Wales,

Northern Ireland and London. Important policy responsibilities were devolved to a directly elected Scottish Parliament. “Devolved matters" include: agriculture, fisheries and forestry, economic development, education, environment, food standards, health, home affairs, Scots law – courts, police and fire services, local government, sport and the arts, transport, training, tourism, research and statistics and social work. The Scottish Parliament has the power to pass laws and has limited tax-varying capability. These powers have been extended over time, including in the aftermath of the 2014 referendum on Scottish independence.

In terms of local government, the Wheatley Commission report in 1975 led to the creation of a two-tier system of local government in Scotland (See figure 4.5). This system did not progress in England, but had major implications for the partnership between local and regional governments in Scotland. The two-tier system of local government was based on the establishment of first-level district authorities with specific local levels of responsibility for housing, libraries, museums and refuse collection etc. The second-level consisted of larger, regional authorities with a more strategic function across a wider geographical area (Carley 2006). Regional authorities became significant drivers of local regeneration initiatives, supporting the growth of new institutional structures. The regional councils also had broad planning and infrastructure responsibilities, aimed at fostering and facilitating growth. The regional tier of government was abolished in 1996 (see figure 4.5), and its responsibilities merged with the district councils to create unitary local authorities. Thus, as figure 4.5 the timeline of Scottish institutional changes shows, over several decades, institutional arrangements within the UK have granted Scotland significant scope to exercise authority and develop initiatives in different policy sectors. These institutional frameworks created the potential for network and partnership-based approaches to development policy design and delivery and the establishment of the Scottish Parliament strengthened and confirmed these processes. Economic development was one of the policy areas devolved to

these new institutions and this offered the opportunity for the formation of distinct, sub-national development initiatives (Goodwin, Jones, and Jones 2005).

Figure 4.5 Timeline Scottish institutional changes and policy initiatives



Source: Author's own elaborations

4.1.2 The Policy context

Regional policy in the UK has been in operation in various forms since the 1930s. In the immediate post-war period, the Labour Government launched a comprehensive regional industrial policy programme that aimed to control factory location to and encourage job creation in certain 'assisted areas'. The general approach lasted up to the 1970s. UK regional policy in the post-war period was based on a broad bipartisan consensus: an equity-oriented, Keynesian approach to State intervention that aimed to redirect growth from the 'overdeveloped' South to the 'underdeveloped' North (Pike and Tomaney 2009; Martin Ferry and Bachtler 2013). This general approach came to an end in the 1970s with a shift towards neoliberalism, reflected in the Thatcher government's agenda of deregulation and liberalisation.

This turn included a rejection of regional policy based on strong government intervention through subsidies that were seen as wasteful and potentially market distorting. The Conservative governments from the 1970s to the 1990s cut regional policy spending and shifted investment from automatic support to discretionary awards, maintaining a strongly centralised approach (Gamble 1994). Free market principles informed new policies, including: urban policy, local regeneration and enterprise zones. The focus shifted towards the indigenous potential of smaller firms and the potential of regions to achieve self-sustaining growth. What this meant in practice was that UK territories could not rely on central government grants to the same extent as before, necessitating the search for alternative ways of supporting development. This emphasised the development of new policy networks and partnerships, drawing in private sector and other interests.

With the election of the Labour party in 1997 the 'UK approach' to regional policy became framed as part of the Labour's government commitment to full employment, requiring an 'an active role in supporting balanced regional growth and urban regeneration' (Balls 2000). The institutional response to improving regional performance was to support and strengthen regional leadership, empowering regions to generate their own solutions (Ferry and Bachtler 2013). This policy approach sits within the overall policy agenda of devolution promoted by the first two Blair administrations. The Labour Government in 1997 was highly committed to partnership working, although from a different conceptual perspective than the previous Conservative government. The efficiency related motivators of partnership working were still evident, as the government invited multi-agency partnerships across a range of sectors to bid for central government funding (Balloch and Taylor 2001; Geddes 2005; Geddes 2006). However, other objectives were evident as well, specifically the value of partnership working in 'joining up' related policy fields as this was a central objective of

all public sector reform agendas under New Labour (Ling 2002; Considine 2002; G. Stoker 2002; Raco 2002). The introduction of the UK Government's Department for Communities and Local Government White Paper *Modernising Local Government in Touch with the People* (1998) also argued that effective local partnership was central to the strategic role of local authorities. The decentralisation or devolution of UK government services in the 1990s laid foundations for partnership working between central and regional government departments and other sub-national actors.

In Scotland, specific socio-economic conditions and the existing institutional framework meant that the shift towards partnership-working and network-based approaches in UK regional policy had a strong base to build on. On the one hand, traditional industries in Scotland were dependent upon government support but with privatization these industries were no longer subsidized. Thus, the established models of driving development became obsolete and had to be reformed and adapted to the new, collaborative policy approach. On the other hand, from the 1970s on, the Scottish Office gained the task of administrating regional development grants, although the broad policy and criteria for eligibility were set in London. In 1974, the incoming Labour government responded to a longstanding demand and set up the Scottish Development Agency (SDA), with broad powers of industrial intervention and encouragement and responsibilities in land reclamation and urban regeneration. A similar agency had existed in the Highlands since 1965, the Highlands and Islands Development Board (Keating 2010; Halkier 2006). This shows that since the 1970s Scotland had regional competencies to manage and implement its own policies (Keating 2010), this together with the changing economy meant that there is a long history of partnership-working.

The appearance of 'pockets' of significant unemployment and deprivation and funding constraints imposed on local authorities, accelerated the emergence of partnership working (Still 2010). It was imperative to mobilise a range of local actors to tackle the scale of problems that were concentrated in particular spatial areas. Increasingly, local authorities looked beyond internal departmental boundaries to collaborate in partnership with external bodies in new and innovative ways. This was promoted by the shared sense that economic regeneration issues are too complex for one agency. Strathclyde Regional Council was a significant force for stimulating locally based regeneration activities, given that it was the authority with the largest resources at its disposal (Turok 1997). At local level, a dense network of agencies developed, sponsored by the SDA, local councils or private partnerships, to offer business advice and small-scale incentives. An early example of multi-agency collaboration in the West of Scotland was the Glasgow East Area Renewal which was a formal economic development partnership established in 1976. GEAR was promoted by the Scottish Office, led by the central government Scottish Development Agency, through Glasgow Development Agency in partnership with Strathclyde Regional Council and Glasgow District Council and Scottish Special Housing. The purpose was to undertake a jointly agreed and funded programme of urban regeneration and renewal in the East End of the City of Glasgow. It used a formal partnership model as a vehicle for inter-agency collaboration.

By the 1990s, Scotland had substantial experience of regional policy and highly developed institutional arrangements focused on regional development, although policy was still made within a centralised UK framework (Keating 2010). Throughout the past two decades, there has been a significant expansion in local partnership working, aided by the growth of new Scottish institutional structures. These local initiatives linked development with the regeneration of struggling areas and the support of disadvantaged groups of the population.

For example, 48 local Social Inclusion Partnerships (SIPs)[10] were established across Scotland (ODS Consulting 2006). SIPs were local governance models involving community actors and delivery organisations in agreeing and aligning local area priorities (e.g. employability, health, community safety etc). SIPs controlled the allocation of devolved Government budget resources to each area and resources for helping specific excluded groups, for example, disadvantaged young people. There was a degree of flexibility around the organisations required to participate and partnership links within the SIP structures. In his pre-devolution study, Macleod (1996) takes an optimistic view of the "networked regional village" that brought together bodies such as the then Scottish Office, representative groups and regional development bodies to provide "the interactive synergy for a relatively informal order for governing economic development".

The fresh devolution impetus of the late 1990s and the creation of the Scottish Parliament reformed this institutional setting and the existing network of agencies such as the SDA, local councils and private partnerships had to adjust. This caused two main developments. First, the SDA, having narrowly escaped abolition, lost its role in industrial investment and was focused more on urban initiatives and sustaining private-sector projects. In 1991 it was recast and renamed as Scottish Enterprise, with a strong orientation towards the business community (Halkier 2006). Scottish Executive, subsequently Scottish Government, policies continued to view networks or partnerships as a key means of delivering public policy objectives. Second, in 2004, SIPs were replaced by Community Planning Partnerships

[10] The Scottish Executive established Social Inclusion Partnerships (SIPs) as multi-agency partnership bodies typically involving the Local Authorities, National Health Service (NHS) other Public Bodies such as the Police, Enterprise Agencies and local Voluntary and Community sectors. SIPs operated from 1999-2003 to tackle local regeneration and inclusion issues (re-accessed 15th May 2009).

(CPPs)[11], which are tasked, under legislation, with delivering public policy objectives at a local level. A number of organisations are now legally required to participate. Specifically, the CPPs pursue spatially focused strategies to address the *Closing the Opportunity Gap* policy.[12] The aims of community planning in Scotland are firstly to make sure that people and communities are actively engaged in the process of decision-making around public services that affect their lives as citizens and secondly, to co-ordinate multi-agency collaboration and joined up working in order to provide better public services.

This is not to argue that all policymaking in Scotland always is made within an environment of networks and partnership. As Lyall (2007) argues, devolution does not necessarily go hand-in-hand with better coordination, participation and associative governance. Established routines have to break-up and policy makers and other actors have to become acquainted with new ways of working that involved multiple actions in the definition, implementation and evaluation of such policies (Lyall 2007). Nevertheless, network or partnership-based working between national and sub-national public authorities, agencies and other interests is prominent in the implementation of public policy in Scotland. Socio-economic trends, political and institutional processes and the evolution of policy instruments have in different ways emphasised the necessity or value of network and partnership-based approaches to supporting development. As the next section will discuss, these developments were arguably strengthened by the role of Cohesion policy in Scotland.

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[11] Established under the Local Government (Scotland) Act 2003, Community Planning Partnerships provide the partnership framework for co-ordinating services across a range of public bodies led by the Local Authorities. There is a statutory obligation for some public agencies to participate in CPPs e.g. LAs, police, fire, National Health Service, transport authorities, and enterprise agencies. Voluntary and private sector participation is encouraged but not required under legislation.

[12] The CPPs were set up to implement the Scottish Labour policy objective of targeting social and economic exclusion as set out in their policy document: *Closing the Opportunity Gap.* Initially CPPS operated under the guidance of Communities Scotland; a Scottish Executive Agency which was established with a national remit to improve housing and regeneration in Scotland. Following the election of an SNP government this agency was abolished in 2008 and its functions subsumed by Scottish Government Departments.

4.2 EU Cohesion policy implementation in Scotland

The role Cohesion policy has been prominent in supporting these network forms of governance in Scotland, especially for economic development policy. The socio-economic trends, as well as policy and institutional changes in Scotland supported and have initiated network-based approaches to implementation and with the support of Cohesion policy these approaches are strengthened and became more consolidated, as it provided extra resources to regional organisations. The aim of this section is to illustrate how Cohesion policy has influenced network and partnership-based approaches to economic development in Scotland.

Partnership working has a specific meaning in Cohesion policy and it takes specific forms, influenced by the rules and regulations of the Commission as well as the institutional setting of a particular Member State. For Cohesion policy, Article 11 of the 2007 - 2013 regulations requires partnership to cover the various stages of programme design and delivery: from preparation, to implementation, monitoring and evaluation of Operational Programmes (European Commission 2006). This includes a specific reference to involving "particularly the regions". The 2007 - 2013 regulations strengthen partnership further by introducing a shift in the definition of partnership from "close consultation" to "close cooperation", applying to relations between the Commission and the Member States as well as the relationships between regional authorities[13]. However, beyond the preamble to the regulations and the specific article on the partnership principle, there is very little mention of partners or partnership throughout the operational sections of the regulatory texts. No precise and

[13] Art. 5 of the 2015- 2020 regulations lays down the requirements for partnership and multi-level governance.

formally binding instructions or guidance have been provided on how the principle should be applied in practice at different stages or functional tasks of the policy process, aside from broad references to the need for partners to be consulted on the NSRF and for OPs to be drawn up in coordination with partners.

This leaves the actual interpretation of how to comply with Article 11 to domestic authorities. Hence, the implementation of the partnership principle is reliant on domestic traditions and practices. Generally, however, there are three main modes of partnership working in Cohesion policy: in programme preparation, in Monitoring Committees and in project implementation. All three modes are evident in the delivery of EU regional development projects, although partnership in project implementation is given particular attention in the research as it is considered the mode where non-governmental partners have the strongest possibility to influence the outcomes of projects.

4.2.1 Partnership in programme preparation

Within the process of programme preparation organisations are required to be included in different processes. In the 2007-2013 period, as laid down by Art. 28 of Council regulation 1083/2006, different regional and local organisations should contribute to the preparation of the National Strategic Reference Framework (NSRF)[14] and the drafting of the Operational Programmes (OP)[15]. Through a process of consultation and cooperation with designated organisations (European Commission 2006).

[14] The National Strategic Reference Framework is a requirement of Structural Funds Regulations for 2007-2013, and will establish the high-level or national-level strategy for Structural Funds Operational Programmes. It is mainly a strategic reference framework for developing the Structural Funds Programmes. It provides an overview of the economic strengths and weaknesses of the respective country's regions, and sets out the approach to Structural Funds spending.

[15] An Operational Programme (OP) sets out a region's priorities for delivering the funds. Although there is scope for regional flexibility, a region's priorities must be consistent with the Member State's NSRF. There is an

Nevertheless, partner involvement in preparation varies across the different regions within the Member States. Member States generally involved most partner groups at some stage in the process, although the major actors, especially central and regional government authorities, dominate the process. Local authorities, socio-economic partners and other bodies were sometimes represented in planning groups/committees but more commonly were consulted through events such as workshops, public meetings and conferences at key stages in the process, and/or they were invited to comment on programme drafts (Bachtler et al. 2008).

4.2.2 Partnership in Monitoring Committees

At the apex of the management structure, the Monitoring Committees (MC) provide the most important platform for formal partnership working in all Member States. The MC's main function is, as the relevant Council Regulation puts it, to 'satisfy itself as to the effectiveness and quality of the implementation of assistance', or, simply put, to oversee SF management (Batory and Cartwright 2011). Their tasks include: approving project selection criteria, signing off on the annual reports that are sent to the Commission each year, and to present proposals concerning the system of indicators. The composition of the committee varies across countries, but typically, includes the managing and paying authorities, regional and sectoral policy ministries, regional authorities and development bodies, trades unions, employer organisations, chambers of commerce, NGOs, educational organisations, RTDI bodies and the voluntary sector. The regulatory requirements ensured wide partnership representation, an important factor in countries where this is weak in other areas of policy

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Operational Programme for each region in the EU. These OPs, just like the NSRF, have to be approved by the European Commission before any implementation

making and where central and/or regional government authorities are dominating the process (Bachtler et al. 2008).

In the current period, the participation of partners in Monitoring Committees is one of the more visible aspects of the application of the partnership principle in the Structural Funds. There seems to be an undisputed value added in strong partnership. The ÖIR (now ECOTEC) (2003) study, for example, found 73% support for the idea that a "monitoring committee is necessary for the efficient implementation of the Structural Funds" (ECOTEC 2003, 67). Also Bachtler et al (2008) see the monitoring committees as "the main vehicle for partnership" (pp.43).

However, there are also some negative accounts of partnership working in Monitoring Committees. As Monitoring Committees are relatively large bodies that meet only a few times a year, and deal with complex, highly technical issues which require expertise rarely available outside central government. Consequently, the 1999 thematic review of the Commission pointed out that;

> "While some MC's involve genuine joint decision-making, just as often Monitoring Committees do not even function as *committees*, and partnership, if present at all, takes place informally between a limited set of key partners" (Kelleher, Batterbury, and Stern 1999).

Furthermore, Piattoni (2006) describes MC's as "ranging from quasi-corporatist committees where some partner organisations enjoy a strong role, to window-dressing committees, which merely aim to fulfil the formal requirement of having such a body in place"(pp.64). However, the actual composition and organisation of MCs varies between Member States. In some MCs, the social partners have a mere consulting role; in others they have full proposal and voting rights. Regardless of the specific arrangement of each Monitoring

Committee, social partners have a hard time making a real contribution due to lack of expertise, time and information (Piattoni 2006; Davies et al. 2007).

4.2.3 Partnership in implementation

Partnership in implementation is linked to the principle of subsidiarity which implies that interventions funded under Cohesion policy should be implemented at the level most competent to carry this out. This refers to partners, as beneficiaries of Cohesion policy projects, should be included in the implementation process. Different resource allocation instruments can foster different structures of partnership. In general, Cohesion policy includes a range of intervention types and systems to allocate resources to projects and beneficiaries. These involve partners in a variety of ways. Even though the rules and procedures governing the Structural Funds have been described as 'one size fits all', evaluations and other studies demonstrate the great diversity of practice that exists. Variation is the result of different institutional contexts, administrative systems, funding levels and specific economic development policies (Mairate 2006). The two most prominent systems for allocating funding to beneficiaries are call systems and allocating funds to intermediary bodies.

- *Call systems:*

Call systems are likely to be used to invite individual and smaller projects. They can help to target groups of potential beneficiaries, raise awareness for a certain initiative, introduce elements of competition or allow programme managers to gain an overview of the interest generated in a certain field. This 'call system' is basically an invitation to potential beneficiary organisations to submit project applications to the programme.

Competitive calls were introduced in Nordrhein-Westfalen and according to the Managing Authority the competitive calls were bringing considerable benefits. The benefits included that actors were supported in making own initiatives, the selection criteria and the procedures are more transparent, competitive calls facilitate comparisons between project proposals, it also allowed for a more efficient approach to building on the existing strengths of the sub-regions. It also facilitated the managing authority with information on approaches, networks etc. in the sub-regions, so that policy could be designed more efficiently (Ferry et al. 2007). This approach is beneficial to partnerships as the calls are open to all partners, ensuring a pluralistic approach to the selection of partners. As well as that all partners have an equal opportunity to contribute to the Structural Funds implementation.

- *Intermediary bodies:*

Intermediary Bodies may manage substantial devolved shares of the overall financial envelope. These bodies may be located at central level (e.g. line ministries or national agencies). In other cases, it may be appropriate to allocate parts of the programme envelope to bodies or partnerships at the sub-national or sub-regional level that cover a specific thematic or geographic field. There are a number of ways to allocate funding to these bodies. Single-stream budgets or 'funding pots' are created, by combining Structural Funds with domestic funding to construct a co-funded budgetary stream or programme.

Another approach is to distribute tranches or 'blocks' of funding to specific administrative organisations, which are then responsible for managing and allocating the funding. This can be done through the use of pre-determined co-financing organisations (e.g. Scotland), co-financing competitions, where agencies or ministries bid to become co-financing bodies (e.g. Nordrhein-Westfalen), global grants, where funding for a specific group of projects is delegated to a body (e.g. France) or the use of thematic or geographic partnerships, where

sub-national partners take responsibility for managing a part of the programme budget (e.g. UK Action Plans (2000-06), Denmark, Sweden) (Ferry et al. 2007).

Allocating funding 'blocks' allows part of the management/administrative workload to be devolved. It can facilitate the integrated treatment of projects, improve the coordination of Structural Funds and domestic development strategies and exploit existing training and experience in delivery organisations. Global grants have proved to be extremely efficient in bringing the management of the funds closer to the beneficiaries and their needs. Such grants have been instrumental in funding small projects, strengthening ownership by the beneficiaries for instance SMEs in the social economy. This approach depends, however, on the availability of delivery organisations with the capacity and the willingness to become involved in the implementation process. For partnership working this means that partners have less of an administrative burden, lower risk of securing match funding and the prospect of long-term partnerships is more likely. This will make it easier of partners to implement their projects and focus on the actual performance of the partnership.

In this context, it is worth noting that for the 2014- 2020 programming period, the European Commission has proposed strengthening the local agenda in Cohesion policy, namely through: the concept of community-led local development. This involves following the LEADER approach, investing at least 5% of ERDF funds for sustainable urban development through 'integrated territorial investments' (European Commission 2014b) and, the establishment of an urban development platform to promote capacity building and exchanges of experience, and the adoption of a list of cities for an urban development platform (European Commission 2014a).

4.2.4 Scotland and EU Cohesion policy

Scotland has a long tradition of implementing Cohesion policy. This section will discuss the evolution of the institutional arrangements for implementing the Structural Funds. The prominent features for implementation in Scotland, especially during the 1994 - 2006 period, included: the challenge fund approach to resource allocation; the delegation of programme implementation tasks to quasi autonomous agencies; and the numbers and types of beneficiary; and the strong emphasis on broad-based partnership (Davies et al. 2007).

Implementation structure until 2006

Since the creation of the European Regional Development Fund in 1975, Scotland has been a mayor recipient of Cohesion funds. Due to the funding increase in the 1990s, "Scotland put in place distinctive implementation arrangements for managing and delivering the programmes" (Davies et al. 2007, 3). From 1994 until 2006, Scotland received to around €2.3 billion in Structural Funds, with the entire country benefiting to varying degrees from ERDF, ESF, European Agricultural Guidance and Guarantee Fund (EAGGF) and Financial Instrument for Fisheries Guidance (FIFG). There has also been an estimated €0.2 billion allocated to various 'Community Initiatives' such as LEADER (rural communities), RECHAR and RESIDER (restructuring of coal and steel areas) and EQUAL (gender equality) (Davies et al. 2007). There is a broad consensus that the Structural Funds in Scotland have had a positive impact. In gross figures, Structural Funds investments in Scotland in the period 1994-2006, funded 13,635 numbers of projects, assisted 153,729 businesses and created or safeguarded 222,812 jobs (Davies et al. 2007). Evaluations and studies of Structural Funds in Scotland find a number of positive qualitative impacts. It is said that without the funding projects would either not have happened, or in a smaller scale. Due to the availability of Structural Funds

additional finance from other external sources were levered-in. In addition, general improvement to strategic orientation of economic development policy and the efficiency and openness to new ideas of programme partners and project holders was made possible with Cohesion policy funding. This shows the quantitative and qualitative benefits of Cohesion policy in Scotland.

The unique model for the delivery of Cohesion policy has its origins in the Strathclyde Regional Council. Discussions between Strathclyde Regional Council and the European Commission in the late 1980s produced a model that strengthened direct connections between the regional and the Commission and promote new EU policy principles, introduced in 1988, including partnership and subsidiarity, (i.e. decision-making being taken at the level nearest the citizen) (McAleavey 1995; Bache 1999). Nevertheless, it was because there was already an established tradition of partnership working in the West of Scotland and also because Strathclyde Regional Council shared the Commission's vision of mobilising actors to tackle the scale of domestic problems that the Scottish model was established (Still 2010).

As the previous section made clear, the management and implementation of Cohesion policy programmes across the EU is based on some common components. Managing Authorities are appointed to administer the implementation of the Structural Funds. They define and publish calls for project proposals on the basis of Operational Programmes, select the projects to receive EU co-funding and monitor project implementation, reporting back to the European Commission at regular intervals. For Scotland, The Scottish Office (1994-99) and subsequently the Scottish Executive had overall management responsibility and accountability for EU funding in Scotland; in the 2000-06 period, the Executive was referred to as the 'Managing Authority' by the EU. A single certifying authority and an auditing

authority are also appointed by Member States to monitor whether the project applications comply with EU regulations. Monitoring Committees, made up of a range of sectoral or territorial stakeholders are appointed to issue recommendations to the managing authority on the use of EU Funds within a specific Operational Programme. The Scottish Office/Executive also had the responsibility for assessing claims and managing the payments system, referred to as the 'Paying Authority' function in the 2000-06.

However, within this general framework, there is considerable scope for management and implementation systems to be adapted to domestic contexts. Within Scotland there are two key components that are typical for Scotland. First was the establishment of Programme Management Executives (PMEs) as professional programme management structures. The PMEs were generally established as companies limited by guarantee, and were each accountable to a programme's Monitoring Committee and to the Scottish Executive. Scottish-based government officials acted as the Managing Authority, with overall management responsibility and accountability at a central government level for the use of EU funding in Scotland. They also acted as the Paying Authority, responsible for approving grant claims and making payments. The differentiated role of the PMEs was to undertake core administrative tasks, notably in relation to:

- project applications (e.g. providing advice to applicants);
- administering electronic monitoring systems for collecting and processing data on financial inputs and physical outputs and results;
- carrying out physical checks on project expenditure and on progress towards the achievement of targets on outputs and results;
- ensuring that rules in relation to monitoring, evaluation and publicity were met;
- secretariat tasks for the programme monitoring committees.

The second key element of the Scottish model was the creation a large and inclusive partnership to inform and guide the decision-making on priorities and the allocation of

resources. The PME structures brought together a significant mass of multi-sector expertise, thereby creating new regional policy networks through the various PME advisory group structures. Over 200 local organisations were involved in various roles at different levels in the West of Scotland Partnership, forming a range of economic regeneration policy and practitioner networks, both formal and informal. PMEs encouraged partner organisations to submit projects that conformed to the programmes' strategic objectives and facilitated the coordination and even merging of similar projects across the partnerships.

The PMEs in 2000-06 were the Highlands & Islands (Scotland) Structural Funds Partnership based in Inverness delivering Objective 1; The East of Scotland European Partnership based in Dunfermline, latterly Inverkeithing delivering Objective 2; the South of Scotland Partnership (Dumfries & Selkirk) delivering Objective 2; the Strathclyde European Partnership, for Western Scotland (Glasgow) delivering Objective 2 programmes and; The Objective 3 Partnership delivering Objective 3 in the whole of Scotland. The programmes implemented in 2000-06 with five PMEs benefitted from a regionalised approach ensuring that a high number of projects and a broad range of different types of beneficiaries profited from the Structural Funds (Davies et al. 2007). This made the Scottish Model for the governance of the Structural Funds an unique structural model that was founded upon partnership decision-making and supporting the growth of domestic partnership working capacity.

Implementation structure 2007 - 2013

The Scottish implementation structure has evolved over the years, in response to changing EU and domestic circumstances, particularly ahead of the 2007-13 period. In 2007-13 Scotland received €820 million for the 7 year period from ERDF and ESF (Bachtler, Vironen, and Michie 2007). This represents a reduction of €850 million (49%) compared to the 2000-

06 programming period. Another major change at the EU level in the 2007-13 programming period is the increased emphasis on thematic concentration and targeting. In order to increase the impact of the funds, the European Commission requires that the vast majority of funding is directed towards activities that support the Lisbon Strategy and other 'earmarked' activities that are considered to contribute directly to the Lisbon goals (Mendez 2013).

Responding to these factors, the programme architecture in Scotland changed. The changes for the implementation structure of Structural Funds in Scotland for the 2007-13 period included the reduction from the previous five PMEs to two Intermediary Administrative Bodies (IABs). For the programming period of 2007-13 the IAB for the Highlands & Islands area is Highlands & Islands Structural Funds Partnership Ltd (HIPP) and for the Lowlands & Uplands area it is ESEP Ltd. Each IAB covers two OPs, one for ESF and another for ERDF. In addition, Strategic Delivery Bodies were contracted. These receive commissioned funding for the delivery of key strategic projects. In the Highlands & Islands area the designated Strategic Delivery Bodies are Highlands & Islands Enterprise (HIE) and the University of Highlands & Islands (UHI). In the Lowlands and Uplands area the Strategic Delivery Bodies is Scottish Enterprise (SE).

This implied a more centralised approach of implementation. The five PMEs moved to two IABs and three SDBs were appointed. ESEP ltd and HIPP operated from the first of January 2007 to December 2011, at the end of the contract, the Scottish Government decided to bring the functions previously undertaken by ESEP and HIPP in-house, including the staff who had been involved in its direct delivery (Scottish Government 2014b). SE and HIE are organisations at arms-length of the Scottish Government, with the allocation of Cohesion funds directly to these organisations, a more streamlined approach between cohesion policy

and Scottish Government priorities is ensured. Section 4.1.1 set out the historical development of SE and HIE.

Another change in the programme that had significant effects on implementation was the creation of priority 5 in the ESF OP. Due to the economic downturn and problems with finding match funding, in May 2010 the PMC recommended an amendment to the LUPS ESF Programme. It was agreed that all unallocated funding should be moved into a new Priority 5, involving reallocation of €62.345 million uncommitted ESF resources to a new priority. The previously established CPPs, based on the Local Government in Scotland Act 2003 (See section 4.1.1), became the lead beneficiaries of Priority 5. By introducing a coordinated response and combining management of different projects under the lead of the CPPs, it was hoped to create joined-up service delivery for getting people back into work (Boumans 2014; Scottish Government 2013a).

It can thus be argued that Scotland's implementation system for the 2007-13 period has undergone a process of rationalisation and centralisation. The number of programme management bodies has been reduced and there is increased emphasis on the commissioning of projects through already existing organisations such as SE and HIE or existing networks such as CPPs, rather than open, competitive calls. Issues such as the availability of co-financing, alignment and coherence of domestic and EU development priorities and governance arrangements for partnership, transparency and accountability are crucial in this context.

These sections provided a discussion of the institutional arrangements put in place for the implementation of Cohesion policy in Scotland. These arrangements can be assessed through reference to the concept of meta-governance developed in Cycle 2 of the Policy

Network literature (see section 2.1.2). The Scottish government, as well as the UK government and the European Institutions, provided the institutional framework in which the network of implementation operates. The rule of network activity are framed by these regulations, processes and structures: there are specific requirements, for instance concerning eligible expenditure, eligible beneficiaries, eligibility to act as a Strategic Delivery Body, that set the 'rules of the game'.

4.3 Qualitative insights on the role of network- and partnership working

Beyond this description of the evolution of Cohesion policy implementation structures and processes, it is important to gain qualitative insights on their practical operations and the network dynamics involved. These will inform the quantitative analysis in Chapter 5. The projects within Cohesion policy are implemented through partnerships between multiple organisations. These organisations are often involved in multiple projects, and therefore, they create a collaborative network for the implementation of Cohesion policy in Scotland. Interviews were targeted to include projects under the programmes' geographical area: Highlands and Islands and Lowlands and Uplands. In addition, both ERDF and ESF are covered, including the most important priorities under these funds. This resulted in 33 interviews, covering a representative group of actors, the methodology for which was set out in Section 3.2.

4.3.1 Type and intensity of partners included in the network

An important factor that emerged out of the interviews is that the type of partner organisation is important, and that the organisations that are included in the project stay actively involved during the continuation of the project. Evidence from interviews with project partners indicates that the value of network or partnership working in terms of

strategic quality or targeting and on engendering increased commitment was appreciated. Nevertheless, several interviewees stated that this value had to be balanced against the coordination challenges of including a wide range of partners in the network behind a project. This tension increased particularly where the relevance of some partners to project activities was limited. One project manager noted that it was difficult to fully engage some partners in Community Planning Projects (CPPs):

> "the main focus of CPPs is employability but partners from the trade union sector were more interested in dealing with people already in employment. Thus no beneficial links were established[16]".

Another interviewee, involved in a project application to the Challenge fund[17], also noted varying participation across partners and associated efficiency issues[18]. Not all partners that had an initial stake in the project application maintained high levels of interest during the course of the project. As it progressed, the partners with the strongest interest in the project field naturally became the most actively involved. However, this indicates some of the limitations of a broad partnership approach as unnecessary administrative costs were incurred in incorporating additional, ultimately superfluous partners at the early stage of the project.

In addition, several interviewees indicated that the involvement of the Lead Applicant has a beneficial impact. However the interviewees gave different reasons for this. One explanation of the beneficial impact was the influence of the Lead Applicant in the efficient division of tasks. In certain cases, the Lead Applicant is responsible for the administration of a number of projects, and the other project partners can focus on the strategic aspects of the project.

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[16] Interview 3, Lead Applicant L&U, dated March, 2013
[17] The Challenge Fund is a different approach to allocating funding. See section 4.2.4 for more detail.
[18] Interview 29, Lead Applicant H&I, dated 12th November, 2013

A project manager for a ESF CCP project reports that the administrative and financial tasks were being taken up by the Lead Applicant, the council, but that the overall strategy of the project was decided in a more open an equal governance arrangement.

> *"The council is taking a leadership role, possibly due to administration support and match funding it provides. But governance of the CPP is much more open and equal*[19]*".*

Another Lead Applicant of a CPP project voices a similar opinion:

> *"Because a council is legally and financially responsible for the program they have more influence, but the right people are around the table*[20]*".*

Another explanation for additional benefit of a Lead Applicant with more experience, or one that implements more projects at the same time, was mentioned by a project manager working on ERDF and ESF implementation in the Highlands and Islands:

> *"Also, to have a Lead Applicant that implements more projects, there is a more strategic view. There is the flexibility of moving funding around different projects*[21]*".*

This was found to be helpful in the context of the economic downturn as it created the possibility of moving funds from one project to the other. In particular, when one project is implemented in an area where it is harder to find beneficiaries, or financial support. Another Strategic Delivery Body, namely Scottish Enterprise, supported this view, the interviewee stated that: "There was the flexibility to deal with change, and the economic downturn. Re-shaping of projects was possible by negotiation[22]". This approach proved to be useful when there was one coordinating body that tendered out different aspects of the projects to different companies.

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[19] Interview 11, CPP representative, dated 7th March, 2013
[20] Interview 9, CPP representative, dated 11th March, 2013
[21] Interview 12, SDB H&I, dated 8th March, 2013
[22] Interview 1, SDB L&U, dated 5th March, 2013

Indeed, according to the SG representatives, one of the main motivations for reforming the Cohesion policy implementation system for the 2007-2013 period was to take advantage of the experience of key organisations. A government official[23] states: [the] "Rationale of the Strategic Delivery Bodies was to recognise that Scotland had a number of key organisations that were likely to bring significant projects forward and had a good record on delivery".

In relation to physical performance, interviewees suggested that a project could benefit from more experienced Lead Applicants, notably when a current project, builds on previous projects. A project manager stated that his project was going to build on and bring together two previously successful projects funded through the ERDF[24], in which the interviewee's organisation was the Lead Applicant. The new project would build on their current work and achievements, and focus on addressing the particular challenges that still remain within the sector.

In addition, a CPP representative argued that this implementation structure adds to the physical performance of its project as it brings together "small third sector partners that lack expertise and resources for projects".[25] By having a council as a Lead Applicant, these third sector partners can use ESIF funding for their projects, with the Council taking the responsibility for the administration. In this way, the quality that these third sector partners can bring to a project is maintained. A Lead Applicant argues that the inclusion of certain voluntary organisations adds value through community linkage. Because the project involves certain voluntary organisations, it increases its ability to reach hard to help communities[26].

[23] Interview 34, Scottish Government Official, dated 16th February, 2013

[24] Interview 23, Lead Applicant, dated 11th June, 2013

[25] Interview 6, CPP representative, dated March, 2013

[26] Interview 2, Lead Applicant, dated 3rd March, 2012

And another Lead Applicant states: "[We] worked with the voluntary organisations as they are the thematic experts and have the community connections - to identify the needs[27]".

4.3.2 Gaining knowledge from actors outside the direct partnership

Interviewees indicated that there is a difference between direct connections and indirect connections and that certain Lead Applicants clearly act as a valuable 'broker' between certain parts of the network. A project manager who acknowledges the importance of the 'broker' function of the Lead Applicant mentions:

> *"The Council did not want the third sector to become disenfranchised so by acting as a broker it ensured there was no need for the small projects to be burdened with the onerous claims and application process for small amounts of money[28]".*

Note, that this broker function is related to procedural and regulatory matters (applications, claiming process etc.) that are important for financial performance rather than physical performance.

An interviewee of an ERDF project in the lowlands and uplands reports that they (as Lead Applicant) function as a coordinating mechanism between two different subsets of organisations that otherwise would not work together. Local SME's gain connections with the university research base through this project. As the project manager states:

> *"The partnership of this project is company led. A company comes to the Bioportal and inquires for a suitable academic partner. In this way, the Bioportal integrates technology transfer within a programme of activities. It also brings Scottish SMEs in contact with local biotech research. While this project then works with 9*

[27] Interview 2, Lead Applicant, dated 3rd March, 2012
[28] Interview 8, CPP representative, dated 1st March, 2013

organisations, a distinction must be made between direct involvement and indirect working relationships[29]".

In addition, a project manager at an University mentions that recommendations from other project managers working on ERDF funding benefited its own project. For example, they were recommended to evaluate before the end of the project. This made them able to turn around to the funders and say; "we have these results, were doing well, there is still some money left, from the evaluation we have these recommendations, would it be ok to go further than our goals[30]". Due to connections to other project managers they thus gained technical information on how to improve the performance both physical and financially of their project.

Similarly, in the case of an ESF project in the Lowlands and Uplands indirect connections, through which a wide range of organisations is reached, functions as the basis of the project.

> *"The projects are determined in dialogue with a LUPS-wide Advisory Group which involves other partners; the CPPs and [the organisation] agree on need, based on stats. Delivery is then through 350 partners. [The Organisations'] policy people get involved in the process at various stages, mainly from the point of view of ensuring that strategic objectives/priorities are met*[31]*".*

Several CPP project managers noted that they lacked practical knowledge on how the CPPs operated. As a result, they created an informal network. This network increased the indirect connections of the CPP's: while not working directly with all other CPPs they gained important information, and clarified some pressing technical issues. As a representative of the CPP reports:

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[29] Interview 23, Lead Applicant, dated 11th June, 2013
[30] Interview 21, Lead Applicant, dated 25th June, 2013
[31] Interview 20, Lead Applicant, dated 11th March, 2013

> "*There was no detailed technical guidance so the CPPs created an informal CPP Network - confusion [was] caused by SG & ESEP giving conflicting information to different CPPs. So network came together to [create] consensus. Later, SG & ESEP attended network meetings and the exchange of information improved*[32]*".*

These insights from the interview data suggest that indirect connections are beneficial for financial performance. Notably, the creation of the informal CPP network increased the indirect connections between CPPs and was a platform to get coherent technical guidance for the implementation of CPPs. The interviews suggest that certain Lead Applicants actively behave as a knowledge broker, and therefore expand the information pool available to project partners.

4.3.3 Creating a Subgroup of common partners

The interviews suggest that previous working experience on projects between partner organisations is beneficial for the projects. Especially partnerships that were established by domestic structures could be consolidated by Cohesion policy project funding. However, there is no evidence suggesting that these embedded close-knit structures also bring about other projects next to sponsored Cohesion policy projects.

Especially in the ESF OP in the lowlands and uplands the interviews confirm the finding of the binary regression on physical performance. Most of the partners working together on the CPPs already worked together before, either in previous programming periods, or through other sources of funding. According to interview#5, the CPP was reasonably well established before application, all partners had previously engaged with each other before applying to Priority 5. Other interviewees mentioned that working with Priority 5

[32] Interview 8, CPP representative, dated 1st March, 2013

"formalised the partnership[33]", or "re-energised local partnership[34]". A CPP representative mentions that even though there was a CPP in place before, applying and delivering Structural Funds, meant they were building on the current CPP[35]. Similar, another CPP representative stated that the CPP evolved to take on the new opportunities that the SF offered[36].

These results are inline with interview evidence from previous studies in Scotland. Still (2010) acknowledges that the Structural Funds provided stability and continuity of funding that encouraged new opportunities to strengthen networks and partnership approaches, thereby extending and enhancing the knowledge and experience of domestic practitioners.

However, a Scottish Government official said that the Strategic Delivery Bodies (SDB) have not had the degree of complementarity that the Scottish government had hoped for.[37] Scottish Government had envisioned the SDBs as playing a leading role in spurring other partners' activities but the interviewee was not aware that particular projects have come forward as a result. Thus, while the SDBs may have built on their current organisational base, there is no evidence of other projects, without SF funding, coming forward out of these newly structured partnerships.

One of the main motivations behind partnership working in policy delivery is the desire to 'join-up' related policy fields and instruments. In particular, the multi-faceted nature of socio-economic problems, and linkages between issues of poverty, inclusion and economic regeneration suggested the need for collaboration across organisational boundaries and

[33] Interview 5, CPP representative, dated, March, 2013
[34] Interview 6, CPP representative, dated, March, 2013
[35] Interview 8, CCP representative, dated, 1st March, 2013
[36] Interview 10, SDB U&I, dated 8th March, 2013
[37] Interview 34, Scottish Government official, dated 16th February 2013

policy fields, and this has contributed to the increasing popularity of partnership as a mechanism for policy delivery. A project manager mentions that the priority activities of the project were determined as a response to a study suggesting that in the area there was evidence of too many projects, but no partnership working and some duplication of efforts[38]. The CPP approach made it possible to have less duplication. This desire to join-up is also found in the ERDF projects. A project manager in the Lowlands and Uplands explains that his project is a collaboration of all the physics departments in Scotland [39]. By combining these departments under one project for extra activities, it became clear that there was a lack of communication between business or industry and the universities. This resulted in a second project, where ERDF was acquired to make students, lectures, departments more commercially minded. Thus, previous working experience and a strong network of like-minded organisations ensured the consolidation of the network as well as the performance of the project.

However, interview evidence indicated that there might also be negative connotations to embeddedness. Sometimes, the embeddedness of a group of organisations implies also the exclusion of others. Some private sector delivery partners among the interviewees felt that they were being treated as outsiders, seeing the public sector bodies as being on the 'inside track'.[40] Similarly, creating partnerships for the implementation of a project, while at the same time, each actor is embedded in a different organisation can also create problems. A project manager mentioned that by creating a project between different universities, people had to work in two different institutional settings and this created commitment issues[41].

[38] Interview 5, CPP representative, dated, March, 2013
[39] Interview 21, Lead Applicant, dated 25th June, 2013
[40] Interview 25, Lead Applicant, dated 12th July, 2013
[41] Interview 21, Lead Applicant, dated 25th June, 2013

In particular, the CPPs in the Lowlands and Uplands emphasised the benefits of working together with partner organisations more often on project. However, the interview data also suggests that being embedded in a network can create tensions and problems, as the embeddedness of a group of organisations implies the exclusion of others.

4.4 Concluding remarks

This chapter has introduced the case study: Scotland and its networks for the implementation of EU Cohesion policy. Three main arguments were presented to justify the selection of Scotland as a good case to study of networks in the implementation of public policy. The chapter set out the developments of implementation approaches of Cohesion policy, exploring how the Scottish Government, alongside the UK government and the European Commission, has actively shaped the network approach for implementation (meta-governance, see section 2.1.2). The last section provided qualitative insights from the semi-structured interviews. These insights were on the practical operations and the dynamics within different projects, focusing on the three hypotheses established in Chapter 2.

Scotland's history and institutional setting are ideal as a case study to study network-approaches to implementation. The overall decline of the old industries in Scotland led to the emergence of substantial territorial disparities at local and regional scales. And while poor economic growth in the 1970s and 1980s was followed by a more prosperous time in the 1990s and 2000s, there are still highly concentrated areas of unemployment, social disparities and low business activity across Scotland. This challenging economic situation together with changes in the institutional context at UK and Scottish levels set the context for local networks for regional and urban development to emerge. Public and private

organisations concerned with urban and regional regeneration were encouraged to work together and create partnerships. While the devolution process in Scotland did not necessarily causes a network approach to policy making or implementation to develop, new institutional arrangements for urban and regional development created space and provided a strong focus for the inclusion of different types of actors, as can be seen from the development from GEAR partnerships to SIPs and currently the CPPs.

From the above analysis, it can be seen that the emergence of partnership working was particularly noticeable where policy focused on issues of poverty, inclusion and economic regeneration. Growing appreciation of linkages between these issues and their tendency to be spatially concentrated, suggested the need for collaboration across organisational boundaries and policy fields, and this has contributed to the increasing popularity of partnership as a mechanism for policy delivery.

This has resulted in a large body of organisations that work together to implement regional economic development projects, especially with funding from the EUCP. Cohesion policy has influenced network and partnership-based approaches to economic development in Scotland. According to the official requirements of Cohesion policy, partnership needs to cover various stages of programme design and delivery: from preparation, to implementation, monitoring and evaluation of Operational Programmes. Within Scotland there was a unique structural model for implementation, founded upon partnership decision-making, and supporting the growth of domestic partnership working capacity. The direct engagement of decentralised bodies such as the Strathclyde Regional Council with the European Commission, promoted this network approach to implementation. However, as is pointed out by other scholars, the focus on partnership in the Scottish model was because there was an established tradition of partnership in the West of Scotland, and both the SRC

and the Commission had the mutual goal of mobilising actors to tackle the scale of domestic problems (Still 2010).

The qualitative insights gathered from the semi-structured interviews established that partnership and network structures for implementation are not always positively associated with better performance, financially or physically. Three themes became evident while analysing the interviews. First, the type and intensity of the connections between partners in a project is important. While the value of networks and partners of a project were recognised, it was indicated by interviewees that this value had to be balanced against the coordination challenges of including a wide range of partners in the network that implements a project. Second, multiple interviewees mentioned the significance of information that was acquired outwith the direct partnership. Especially the Lead Applicant, and its wider network or connections to previous projects, was indicated as potentially having a positive effect on the performance of projects. Third, previous working experience between organisations of a current project was also identified as a beneficial factor. Through the sharing of previous work organisations are more likely to understand the motivations behind the partners, which enhances together towards the same goal.

This section gave a historical background into the Scottish partnership approach in economic regional development, emphasised the role of Cohesion policy in supporting these network structures for implementation and gave crucial insights into the current partnership- and network approaches in the implementation of Cohesion policy in the 2007- 2013 period. The next section will take these insights and develop them further. With the help of Social Network Analysis certain specific measures of network position will be measured and related to financial and physical performance.

5. Quantitative Analysis: The effect of network position on project performance

This chapter analyses the variation of project performance of Cohesion policy in Scotland. In doing so, it tests the three hypotheses established in Chapter 2 (see Table 5.1) based on the review of policy network theory. The dependent and independent variables used in this chapter are operationalised in Chapter 3. The detailed analyses in this chapter build on the qualitative insights on the effects of network-based policy implementation provided by the case study review of Cohesion policy in Scotland and the semi-structured interviews in Chapter 4. Specifically, this chapter includes detailed quantitative analyses of the effect of network position on the performance of projects implemented under Cohesion policy in Scotland.

Table 5.1 Research Question and hypotheses

Overarching Research Question	Is working in partnership, and thus creating a collaborative network for the implementation of policy beneficial for project performance?
Hypothesis 1	More direct connections lead to higher project performance.
Hypothesis 2	More indirect connections lead to higher project performance.
Hypothesis 3	Stronger embeddedness among project partners leads to higher performance.

Other studies have used a broadly similar approach, employing regression analysis to study network effects or network activity on the performance of public agencies and policies (Andrews et al. 2011; Meier and O'toole 2001; Schalk, Torenvlied, and Allen 2010; Akkerman, Torenvlied, and Schalk 2012; Shrestha 2013; I.-W. Lee, Feiock, and Lee 2012). Schalk et al (2010), for example, use a multilevel logistic regression to analyse if the network positions of colleges significantly contributes to a positive evaluation by graduates of these

colleges. Shrestha (2013) uses a logistic regression to estimate the effects of a community's network on the likelihood of the community's programmes being funded. Furthermore, Lee et al, (2012) apply a quadratic assignment procedure regression analysis to examine how cooperation influences policy network structures for economic development. This research builds upon these studies and the results can be related and contrasted to the findings of these analyses. However, by applying SNA to Cohesion policy projects, and distinguishing between financial and physical performance, this research adds new and innovative insights to this body of literature together with insights into the debates surrounding Cohesion policy.

The rest of this chapter is structured as follows, first, the variation of the dependent variables will be explained. Second, a description of the key control and explanatory variables will be provided. Third, the three hypotheses will be tested through the use of a Tobit model for financial performance and a binary regression model for physical performance and the results will be presented.

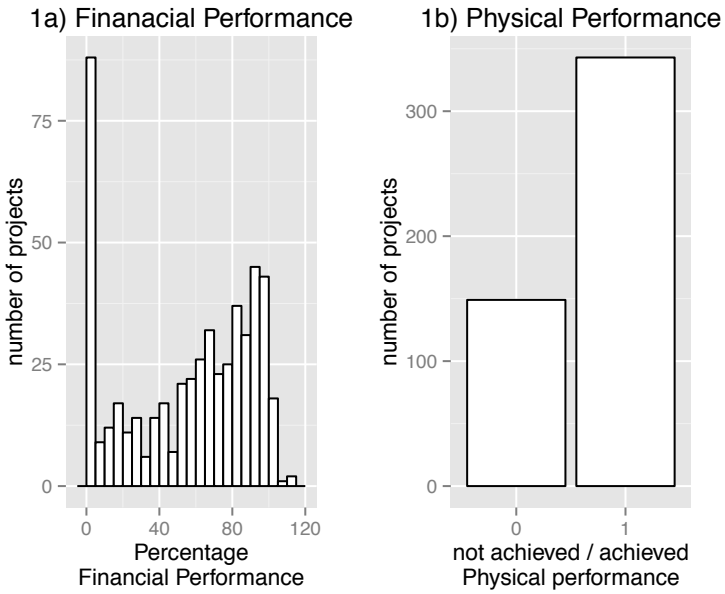
5.1 Variation of the dependent variables

There is a wide variation in the performance of Cohesion policy projects in Scotland. While there is an overall consensus that Cohesion policy performs relatively well in Scotland (see Chapter 4), individual projects show a more diverse spread of performance. As Chapter 3 explained, performance here is measured according to two variables: financial performance and physical performance. In this research, financial performance is understood as the ability of the projects to spend their money within their official life span, calculated as a percentage of their original spending target. Physical performance is operationalised as a binary variable. The total amount of physical performance based on output indicators is

calculated as a percentage of their original target. A binary variable is created, by coding the variable as '0' when the project did not achieve the 70% of their outputs, and '1' when they achieved 70% or more of their outputs (see methodology chapter 3).

There is variation in both financial and physical performance across the projects within the 2007-2013 programming period. Figure 5.1 illustrates this variation. As can be seen from the histogram (1a), there are a high number of projects that have a financial performance of 0. However, there are also a high number of projects with a financial performance 80 and 120. Figure 1b shows the variation in physical performance; the number of projects that achieved 70% of their output indicators, and those that did not. As the bar graph shows, around 350 projects did achieve their indicators, and around 150 did not. These figures clearly show the variation of performance of the Cohesion policy projects in Scotland.

Figure 5.1 Dependent variables - Financial and Physical performance



5.2 Description of the control variables

The control variables are those variables that could have an effect on the dependent variable and are therefore taken into account in the analysis in order to test the relative effect of the network variables. These variables were operationalised in section 3.4.2. Recent studies contend that control variables are particularly important for network studies. Torenvlied and Akkerman (2014) show that different types of schools need to network with different actors in order to increase performance. Similar, Shrestha (2013) shows that for funding success in Nepal, projects are more likely to get funding when they are in embedded networks with indirect links. However, Berardo (2009) shows that for project implementation in Florida, embeddedness is not a significant predictor variable for project success. This shows the different effect of network variables in different policy settings and emphasises that it is important to take control variables into account. This section will briefly describe the control variables used in the statistical model (See table 5.2).

Table 5.2 Control variables and their explanation

Control variables	Explanation
Operational Programme (OP)	Within the 2007-2013 programming period there were 4 different OPs in Scotland. These include the geographical distinction between the highlands and islands and the lowlands and uplands, as well as the type of fund; ERDF and ESF.
Type of organisation of the Lead Applicant	There are 5 different types of Lead Applicant that implement projects within Cohesion policy. These are: economic and social development bodies (ESDB), further education institutions (FE), government departments/agencies (GDA), higher education institutions (HE), local authorities (LA) and voluntary sector organisations (VS).
Type of project	The type of project, either captial or revenue, is related to the costs that are eligible for spending under the different type. Capital projects are used for the purchase of, for example, land and real estate. Revenue projects are related to projects that offer services and where the project funds staffing costs.
Intervention rate	Takes into account the amount of funding that comes from the Cohesion policy funds.

For the analysis of Cohesion policy in Scotland, the following control variables are built into the analysis: the operational programme in which the projects are implemented (OPs), the type of organisation acting as the lead applicant of the project, the type of project (either revenue or capital project) and the amount of project funding (See Table 5.2 for further description).

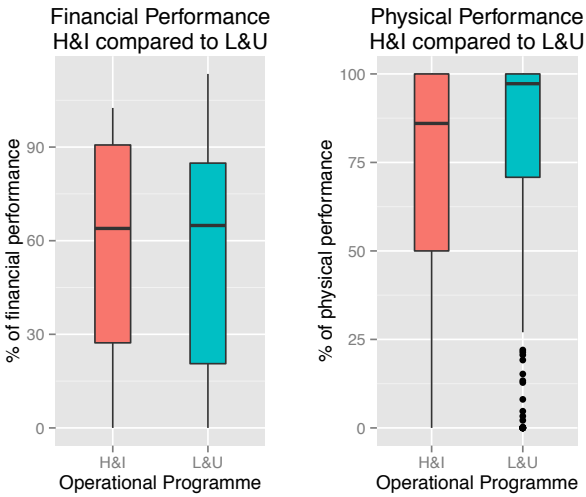
5.2.1 Operational Programme

The first and an important control variable is Operational Programme. As section 3.4.1 operationalised and Chapter 4 explained, within the 2007- 2013 period there were four different Cohesion policy OPs in Scotland. These OPs were divided by type of fund (ERDF or ESF) and geographical area (Highlands and Islands and Lowlands and Uplands). There were substantial differences between the OPs in the Highlands and Islands and Lowlands and Uplands in terms of the socio-economic and institutional context, the type of organisations involved in the implementation of the funding, but also the type of projects being implemented.

Literature on innovation systems recognizes contextual differences between peripheral regions and agglomerated regions. For example, the local environment of peripheral regions is smaller, there is a limited number of connections between a smaller milieu of actors and organisations and these connections are more likely to include informal characteristics. Different types of actors are likely to be involved in leading roles in development processes than in agglomerated regions. For instance, in the field of innovation, rather than large firms, there is more emphasis on local public organisations, such as technical colleges, research institutes and government as sources of innovation (Tödtling and Trippl 2004).

In addition, the challenges that are being addressed within these geographical areas are different. Programme areas have quite distinctive sets of challenges: in the LUPS there is a higher concentration of urban areas where socioeconomic deprivation is particularly acute; the H&I area has a much higher share of rural territories which face different sets of competitiveness challenges (see section 4.1). Figure 5.2 shows the difference between financial and physical performance in the Highlands and Islands compared to the Lowlands and Uplands. Financial performance shows a similar spread in both areas. The graph showing physical performance illustrates that the average performance of LUPS projects is closer to 100% than the average of physical performance of projects in the Highlands and Islands programme area. This suggests that it is more difficult for projects in the Highlands and Islands to reach their physical performance indicators within the set time period. For financial performance, the spread of the projects in both geographical areas is similar; suggesting that for financial performance geographical area is not a significant explanatory factor in explaining performance.

Figure 5.2 Financial and Physical performance by geographical area



5.2.2 Type of Funding: ERDF and ESF

In this analysis, it is also important to take account of different types of Cohesion policy funding: ERDF and ESF. ERDF is focused on business support, innovation and infrastructure.

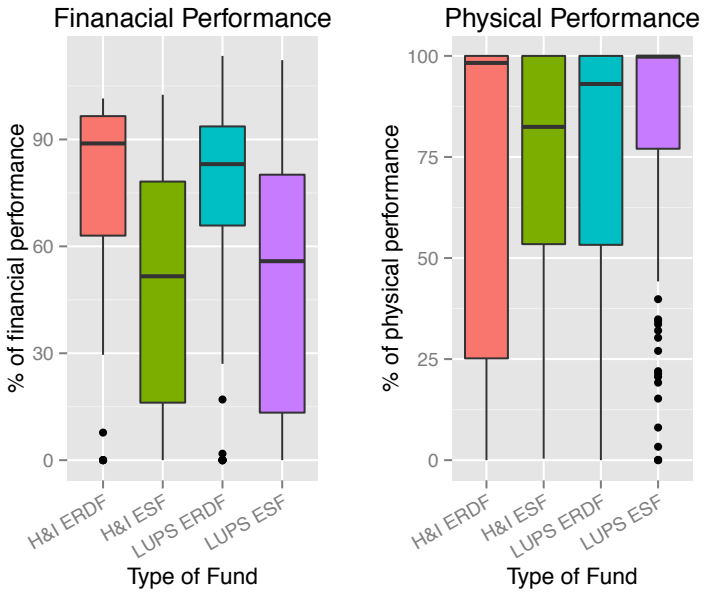
ESF is concerned with training and labour market issues and improving employment rates. In practice, this produces different types of projects and, potentially, different implementation challenges and levels of performance. Within each funding stream there are different priorities and it is easier to spend and achieve results against indicators in some priorities more than in others. For example, the research, development and innovation priority of the ERDF has been identified as one of the easiest to spend areas. This is mainly due to universities that have experience in using the funding available and are comfortable with Cohesion policy implementation requirements (Michie 2014).

The performance of projects is more related to the funding type, ERDF or ESF, rather than geographical area. Figure 5.3 shows the financial performance of the different OP. The OPs of the H&I ERDF and the LUPS ERDF follow a similar pattern of distribution, as do the LUPS ESF and H&I ESF. This suggests that the type of fund, ERDF or ESF, is important for the analysis of financial performance. The financial performance of projects in the ESF ranges from less than 30% of money allocated being spent to 80%. The projects within the ERDF, in contrast, have a smaller range of financial performance from around 60% to 95% of allocated funds. Analysing physical performance operationalised as a continuous variable shows clearly the spread of physical performance in different OPs. This indicates that the LUPS ESF OP has a mean of almost 100% of physical performance, similar to the ERDF OP, however, the spread of projects is larger in the ERDF OP. H&I ESF has a mean of around 80, suggesting they have the most projects with low physical performance.

For Physical performance as a binary variable, the relationship between the different OPs and achieving 70% of their indicators or not is surprisingly evenly divided. Table 5.3 shows the physical performance in the different OPs, based on the amount of projects that achieved 70% of their physical performance indicators and those that did not. The ESF OP in

the Lowlands and Uplands has the highest percentage of projects that achieved 70% or more of their physical performance targets. The other OPs are relatively similar with around 60% of the projects reaching 70% or more of their physical indicators.

Figure 5.3 The spread of financial and physical performance by OP



Note: Physical performance here is operationalised as a continuous variable between 0 and 100. Projects that had over-achieved on their indicators were re-coded as 100.

Table 5.3 Binary variable of Physical performance

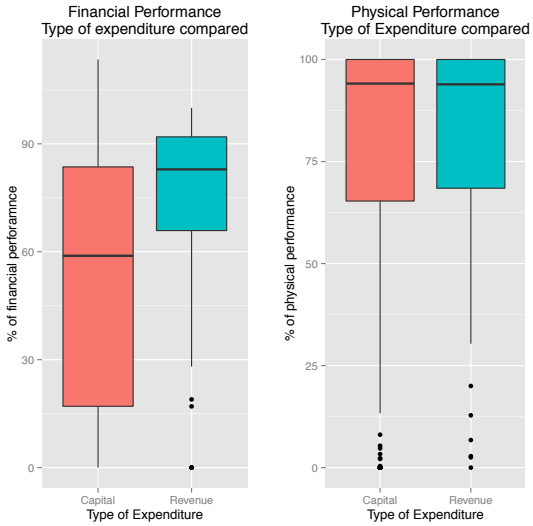
Programme	**0***	**1****	**Number of projects**
H&I ERDF	0.37	0.63	19 + 32 = 51
H&I ESF	0.41	0.59	42 + 60 = 102
L&U ERDF	0.34	0.66	31 + 59 = 90
L&U ESF	0.20	0.80	57 + 218 = 275
* 0 = did not reach 70% of its indicators ** 1 = did reach 70% or more of its indicators			total projects: 518

5.2.3 Type of project: Capital or Revenue

It should be noted that especially in the case of analysing physical performance, the type of project (either revenue or capital) is, potentially, an important control variable. Capital projects are projects that focus on the purchasing of equipment, land, and real estate. This

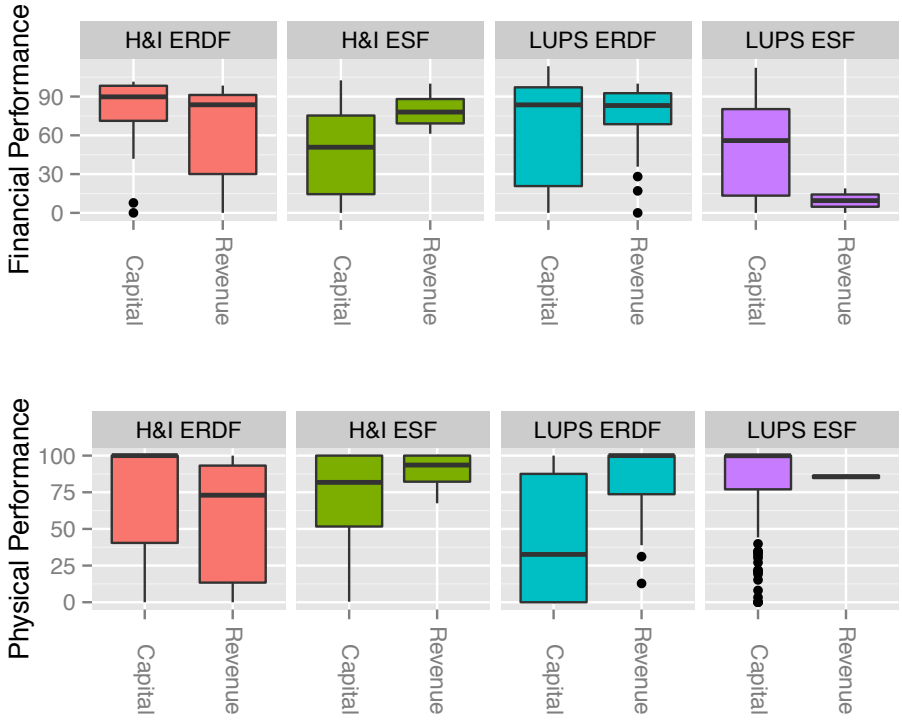
concerns projects that construct roads or buildings. Revenue projects are projects where staffing costs are the main expense. For example, these projects fund salaries in order for people to spend part of their time on a specific activity. This involves projects that, for instance, operate a business support scheme, or schemes to get people back into work. The physical performance of either capital or revenue projects is considerably different. This can imply that it is easier for one type of project to achieve their results indicators. In terms of physical performance indicators, the physical targets of km roads build, or m^2 office space build are more straightforward to isolate and measure and achieve than the number of people back into work or increased turnover in businesses. Figure 5.4 shows the difference in financial and physical performance in terms of the type of project (capital other revenue). For financial performance, revenue projects have a higher mean and a smaller spread between 70 and 90 of financial performance. For physical performance the means are similar as well as the spread, showing no clear difference between revenue and capital projects.

Figure 5.4 Boxplot of financial and physical performance by type of expenditure



More information can be drawn from the capital revenue distinction when looking at the different OPs. Figure 5.5 shows financial performance and physical performance divided by capital and revenue projects and split by the different OPs. Clearly the revenue projects in the LUPS ESF have the lowest mean in financial performance. Whereas, the revenue projects in LUPS ERDF and H&I ESF have a high mean in financial performance. In addition, whereas the H&I ERDF has a lot of variance in revenue projects for physical performance, the capital projects perform well. For physical performance, the revenue projects of the LUPS ESF show a small spread, as well as the H&I ESF. The capital projects in all OPs for physical performance show a wider spread than the Revenue projects, except for the highlands and islands ERDF, where capital projects seem to perform better than the revenue projects for both financial and physical performance. Within certain OPs the type of project has an influence on the performance, both financially as well as physically. This indicates that that type of project is an important variable to take into account, when controlling for OP.

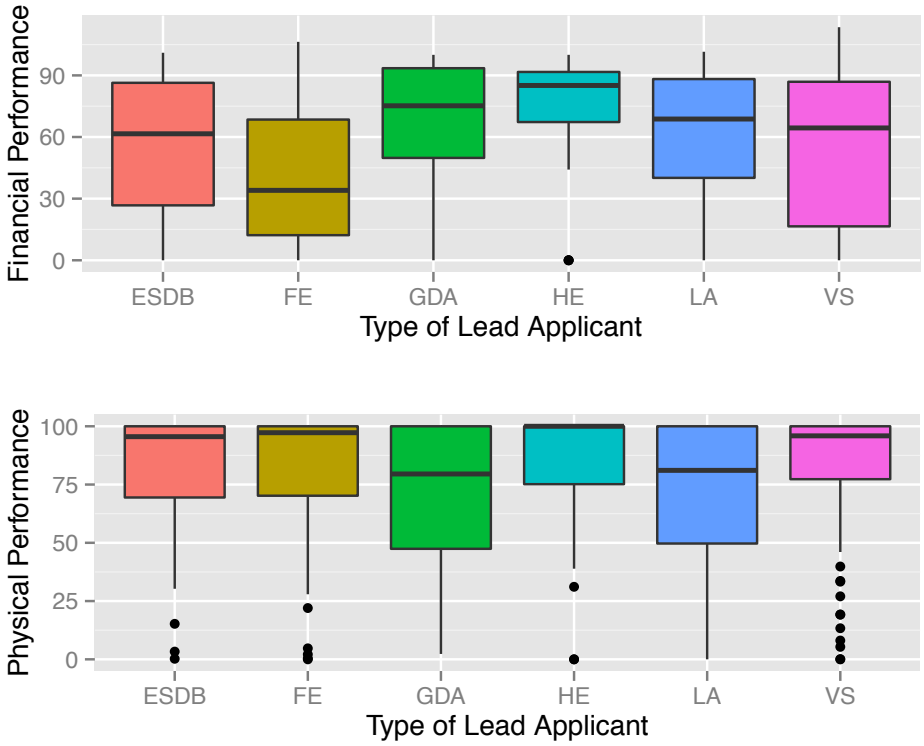
Figure 5.5 Boxplot of financial performance by capital and revenue OP



5.2.4 Type of Lead Applicant

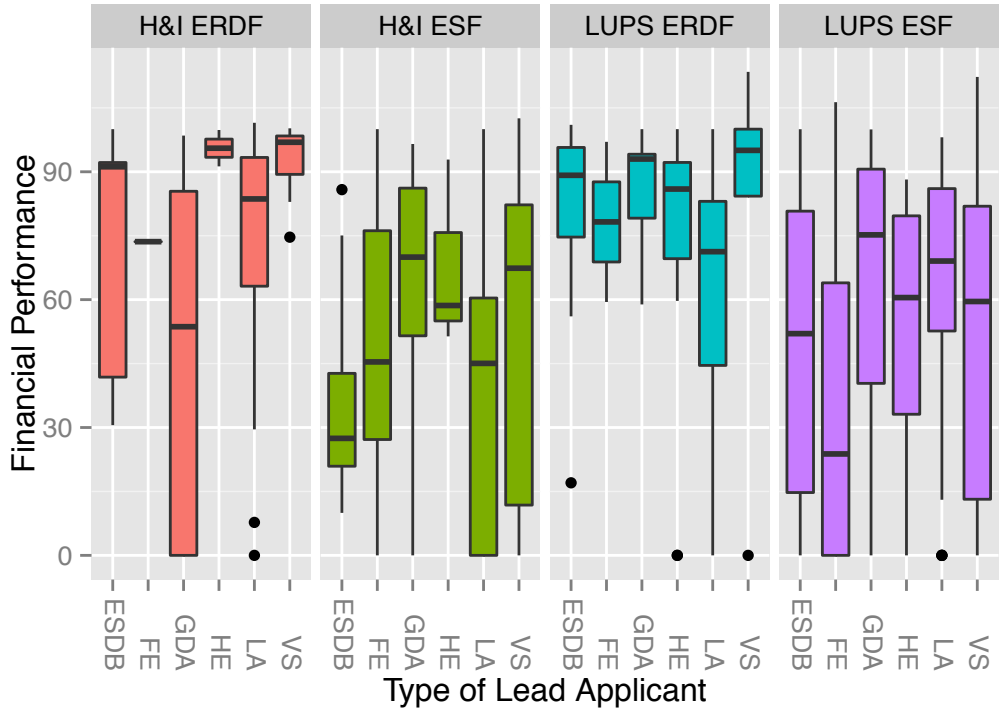
The type of Lead Applicant is also controlled for in the statistical analysis. Potentially, the type of organisation (its level of experience, staff numbers and experience, financial an administrative resources etc.) can determine its ability to deal with the requirements of implementing Cohesion policy projects. There are 5 different types of Lead Applicant, namely: economic and social development bodies, further education institutions, government departments/agencies, higher education institutions, local authorities and voluntary sector organisations. As figure 5.6 shows, there is considerable difference in the performance of Lead Applicants in financial terms. The mean of Lead Applicants of Higher Education is around 90 for financial performance while the mean of Further Education is around 30 for financial performance. This suggests that the type of Lead Applicant is important to take into consideration.

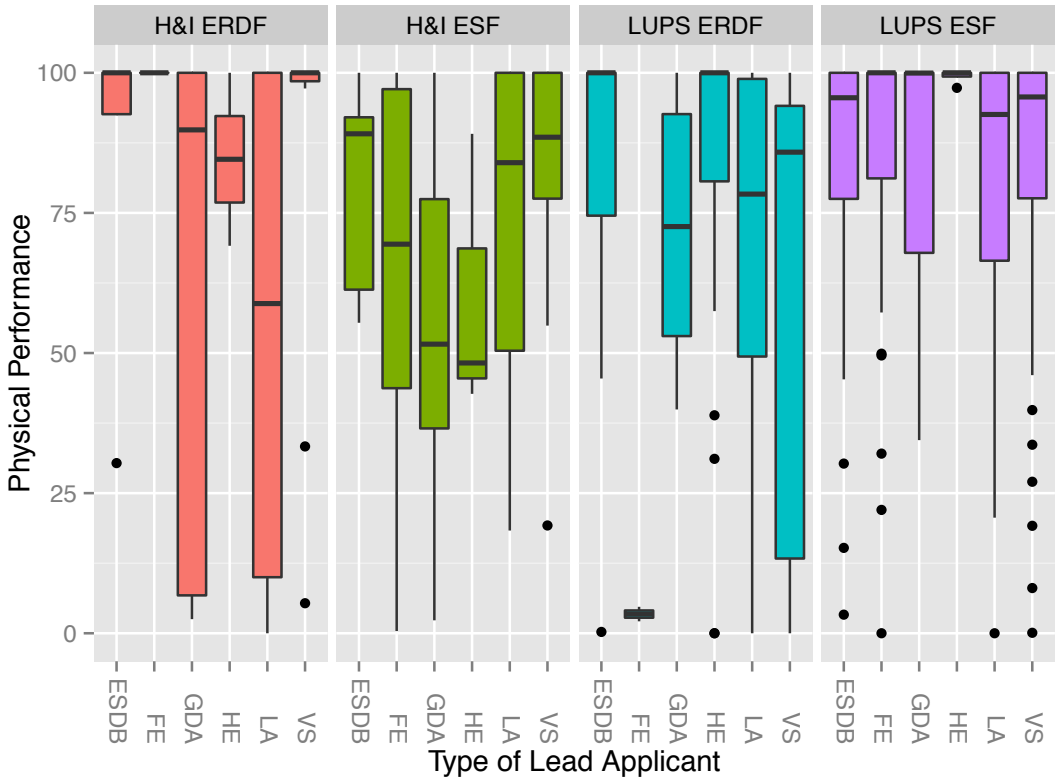
Figure 5.6 Type of Lead Applicant and Performance



In terms of physical performance, all Lead Applicants perform well, apart from Government Department Agencies and the Local Authorities. In order to explore this variable further, Figure 5.7 shows the Type of Lead Applicant by OP and performance. In terms of financial performance, only the LUPS ERDF OP has a mean for each Lead Applicant between 60 and 100 percentage points. H&I ERDF shows a more varied picture with only Higher Education and the Voluntary sector having a mean higher than 100. In terms of physical performance, the LUPS ESF OP has all the means of type of Lead Applicant between 80 and 100. For the ERDF in the LUPS OP the Further Education Lead Applicants show a really low mean of physical performance, close to 0. However, the spread for Lead Applicant and Physical performance is in general quite varied.

Figure 5.7 Type of Lead Applicant, Operational Programme and Financial Performance

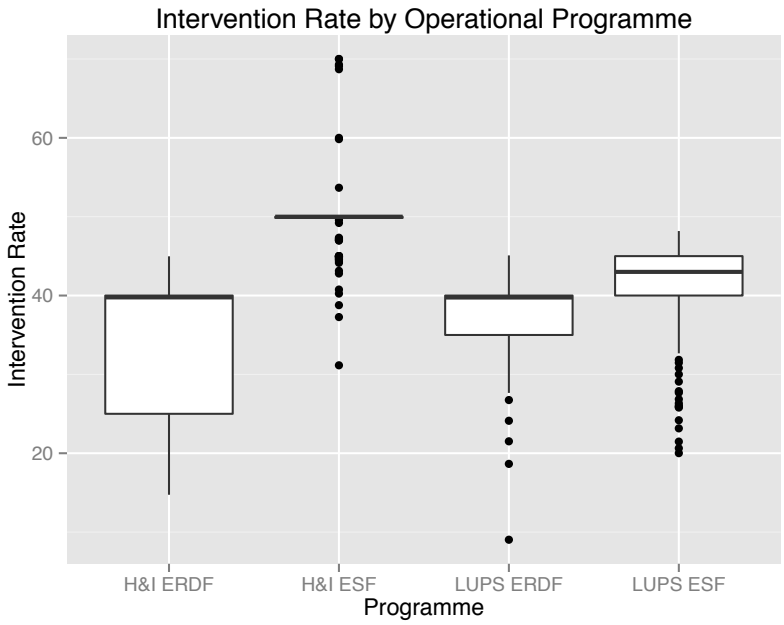




5.2.5 Intervention rate

Another control variable is the approved intervention rate of the Structural Funds in the project. As the funding for the projects cannot solely come from the Structural Funds, the project needs to be match funded by national sources or other sources. The amount of funding that comes from the Structural Funds is based on the amount of activity that is eligible for funding. Figure 5.8 shows the different intervention rates across the OPs. While most of the projects have an intervention rate between 30% and 50%, clearly the H&I ERDF has a bigger spread of intervention rates. However, LUPS ERDF also has a project with only 9% of the funding coming from the Structural Funds.

Figure 5.8 Intervention rate by Operational Programme



This descriptive analysis gives insights into the spread of performance set against the control variables. It demonstrates that the type of funding is more important than geographical area in explaining financial performance. Moreover, within certain OPs the type of project also plays a role in explaining performance. The type of Lead Applicant and the intervention rate

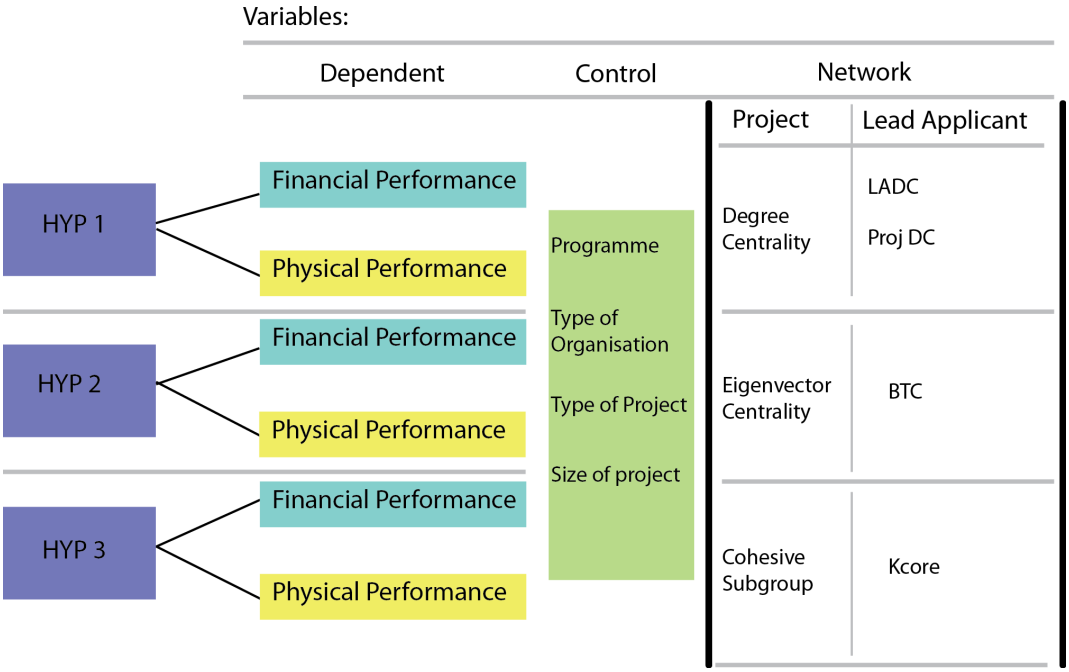
have also shown to be a factor influencing the performance of projects. Nevertheless, while these variables do have an influence on the performance of the projects they do not completely explain the variation of performance of these projects. Therefore, the next section, in addition to these control variables, sets out the explanatory variables considered, namely those related to network-based implementation.

5.3 Network variables

The explanatory network variables are the variables that measure network position in the collaborative network for project implementation. These network variables relate to the three hypotheses established in Chapter 2. The analysis will look at how these network variables relate to the dependent variables in order to test the three hypotheses. These variables are set out in detail in Chapter 3 and are measured using the SNA program Pajek[42]. It is important to note that these network variables are not mutually exclusive. In other words, it is possible to have more or less direct connections, but have a similar level of embeddedness or have a similar level of indirect connections. To test Hypothesis 1, the variables 'Degree Centrality', 'LADC' and 'ProjDC' are used to count the number of partners involved in the project, the number of projects the Lead Applicant implement as a Lead Applicant, and the total number of projects the Lead Applicant is part of, as a Lead Applicant or an 'ordinary' project partner, respectively. To test Hypothesis 2 'Eigenvector centrality' and 'BTC' are used to measure the 'indirect connections' of the project and Lead Applicant. Lastly, to test Hypothesis 3 'Cohesive Subgroup' and 'Kcore' are used to measure the extent of embeddedness of the project and the Lead Applicant. Figure 5.9 shows the structure of the hypotheses with the variables used in the analysis.

[42] V. Batagelj, A. Mrvar: Pajek – Program for Large Network Analysis. Connections, 21 (1998) 2, 47-57.

Figure 5.9 Structure of the analysis



To measure the effect of these variables simultaneously on the performance variables, these, together with the control variables, are included in the two multivariate statistical models (the Tobit and the Binary Regression model). However, in order, for them to be included in the model the variables should be tested for multicollinearity. Multicollinearity occurs when two variables in a model are highly correlated. This can imply that the estimates of the multiple regressions may change erratically in response to small changes in the model or the data. Nevertheless, multicollinearity does not reduce the predictive power or reliability of the model as a whole. Table 5.4 shows the ranges and standard deviations of the network variables and Table 5.5 shows the correlation matrix between these variables. As the table shows, there are no high correlations between the network variables. The highest correlation is between Kcore and ProjDC, with a correlation of 0.6.

Table 5.4 Descriptive Statistics of explanatory variables

Variable	Min	1st Qu.	Mean	3rd Qu.	Max	SD
Degree Centrality	1	5	9	11	38	5.4
LADC	1	3	7	9	27	6.7
ProjDC	3	44	96	128	512	74
Eigenvector Centrality	0	0.0018	0.011	0.014	0.1	0.0015
BTC	0	0.002	0.012	0.015	1	0.004
Cohesive Subgroup	0	3	8	13	32	7.8
Kcore	3	19	23	27	37	6.7

Table 5.5 Correlations of explanatory variables

	Degree Centrality	LADC	ProjDC	Eigenvector	BTC	Cohesive Subgroup	Kcore
Degree. Centrality	1						
LADC	-0.11	1					
ProjDC	0.01	0.35	1				
Eigenvector	0.32	0.00	0.36	1			
BTC	0.04	0.07	0.24	0.07	1		
Cohesive Subgroup	0.10	0.45	0.31	0.43	0.06	1	
Kcore	0.02	0.29	0.62	0.20	0.08	0.24	1

The above section has provided descriptive statistics of the dependent variables (financial and physical performance), the control variables and the explanatory variables. While this provided important insights, the main focus of this research is on the relationship between project performance and partnership, network-based working. This research explores whether and how different network variables have an effect on financial and physical performance. Therefore, two different multivariate regressions are modelled: a Tobit regression to analyse the effect of the network variables on financial performance; and, a Binary regression to analyse the effects on physical performance. These models are presented in Table 5.6 and 5.7.

The following sections set out the results of the analysis. The three hypotheses are tested

based on regression models. Each section follows a similar structure: briefly restating the main hypothesis; describing the steps taken in the analysis to test the hypothesis; setting out the results from the regressions; and, examining the magnitude of the effects by analysing the impact of a change in value of a variable. The results of the regression models are presented in table 5.6 and 5.7.

To assess the different models the Akaike Information Criterion (AIC) is used. The AIC is a measure that shows the relative quality of statistical models for a given set of data. The AIC estimates the quality of each model, relative to each of the other models. Hence, AIC can help in model selection. Given a set of candidate models for the data, the preferred model is the one with the minimum AIC value. However, as increasing the number of variables in the model always improves the goodness of fit, the AIC also includes a penalty as an increasing function of the number of estimated parameters (Aho, Derryberry, and Peterson 2014). As table 5.6 and 5.7 show, the complete models in both regression models have the lowest AIC score, indicating that this model fits the data the best.

Table 5.6 Determinants of Financial Performance (Tobit model)

	Control	Project	Lead Applicant	Complete
(Intercept)	**92.64** (13.30)***	**101.96** (13.37)***	**93.59** (14.17)***	**91.33** (13.93)***
Control Variables				
ProgrammeH&I ESF	**-18.87** (8.82)*	**-17.45** (8.72)*	-15.67 (8.69)x	-13.84 (8.46)
ProgrammeLUPS ERDF	-0.98 (8.03)	5.46 (8.10)	2.98 (7.97)	13.99 (7.99)x
ProgrammeLUPS ESF	**-24.41** (7.13)***	**-18.38** (7.15)*	**-17.38** (7.26)*	-11.06 (7.11)
New.Type.OrganisationFurther Education	-10.61 (6.26)x	-9.08 (6.21)	**-17.34** (6.35)**	**-16.06** (6.21)**
New.Type.OrganisationGovernment Department/Agencies	6.35 (7.80)	1.46 (7.94)	6.80 (8.23)	3.94 (8.16)
New.Type.OrganisationHigher Education	7.76 (8.58)	11.75 (8.50)	15.40 (8.68)x	**28.16** (8.73)**
New.Type.OrganisationLocal Authority	-1.84 (6.19)	-5.74 (6.18)	-2.90 (6.27)	-7.20 (6.17)
New.Type.OrganisationVoluntary Sector	2.95 (5.86)	1.91 (5.78)	1.97 (6.04)	6.33 (5.89)
Type.ExpenditureRevenue	1.97 (7.13)	2.17 (7.00)	2.78 (6.99)	2.07 (6.77)
Approved.Intervention.Rate	-0.54 (0.32).	-0.55 (0.31).	**-0.62** (0.31)*	**-0.61** (0.30)*
Project Variables				
Degree.Centrality		-0.60 (0.36)x		-0.50 (0.35)
Eigenfactor		247.22 (140.32)x		**438.05** (143.82)**
Cohesive.Subgroup		**-1.20**(0.27)***		**-1.95** (0.32)***
Lead Applicant Variables				
LADC			0.07 (0.32)	**1.14** (0.37)**
ProjDC			**-0.33** (0.07)***	**-0.41** (0.07)***
BTC			**1271.91** (295.58)***	**1622.73** (295.77)***
Kcore			0.69 (0.37)x	**1.02** (0.36)**
Log(scale)	**3.68** (0.04)***	**3.66** (0.04)***	**3.65** (0.04)***	**3.62** (0.04)***
AIC	4485.67	4469.46	4468.44	4434.69
BIC	4536.74	4533.30	4536.53	4515.55
Log Likelihood	-2230.84	-2219.73	-2218.22	-2198.34
Deviance	654.41	647.72	649.36	
Total	521	521	521	521
Left-censored	86	86	86	86
Uncensored	414	414	414	414
Right-censored	21	21	21	21
Wald Test	72.00	95.79	95.47	138.14

*** p < 0.001, ** p < 0.01, * p < 0.05, x p < 0.1

Table 5.7 Determinants for Physical Performance (Binary Regression)

	Control	Project	Lead Applicant	Complete
(Intercept)	0.27 (0.73)	0.29 (0.76)	0.12 (0.80)	0.43 (0.82)
Control Variables				
ProgrammeH&I ESF	-0.32 (0.48)	-0.49 (0.48)	-0.24 (0.48)	-0.38 (0.49)
ProgrammeLUPS ERDF	-0.54 (0.43)	-0.75 (0.45)^{x}	-0.32 (0.44)	-0.66 (0.46)
ProgrammeLUPS ESF	0.65 (0.39)^{x}	0.38 (0.39)	0.77 (0.41)^{x}	0.55 (0.41)
New.Type.OrganisationFurther Education	0.06 (0.37)	-0.05 (0.38)	0.01 (0.38)	-0.09 (0.40)
New.Type.OrganisationGovernment Department/Agencies	-0.64 (0.42)	-0.54 (0.45)	0.02 (0.48)	-0.04 (0.50)
New.Type.OrganisationHigher Education	0.33 (0.51)	0.07 (0.51)	0.72 (0.54)	0.29 (0.55)
New.Type.OrganisationLocal Authority	-0.45 (0.35)	-0.40 (0.35)	-0.23 (0.36)	-0.20 (0.37)
New.Type.OrganisationVoluntary Sector	0.20 (0.35)	0.27 (0.35)	0.47 (0.37)	0.36 (0.37)
Type.ExpenditureRevenue	**0.83** (0.39)*	**0.90** (0.40)*	**0.90** (0.40)*	**0.96** (0.41)*
Approved.Intervention.Rate	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Project Variables				
Degree.Centrality		-0.02 (0.02)		-0.02 (0.02)
Eigenfactor		**-19.96** (8.04)*		-14.13 (8.56)^{x}
Cohesive.Subgroup		**0.06** (0.02)***		**0.07** (0.02)**
Lead Applicant Variables				
LADC			**0.05 (0.02)****	0.02 (0.02)
ProjDC			**0.00 (0.00)**^{x}	0.00 (0.00)
BTC			-4.24 (7.51)	-10.48 (18.06)
Kcore			0.00 (0.02)	-0.01 (0.02)
AIC	592.98	583.08	587.28	581.26
BIC	639.16	641.86	650.26	656.83
Log Likelihood	-285.49	-277.54	-278.64	-272.63
Deviance	570.98	555.08	557.28	545.26
Num. obs.	492	492	492	492

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ^{x} $p < 0.1$

5.4 Hypothesis 1: Having direct connections is beneficial to project performance.

The first hypothesis explores the relationship between the direct connections of a project with partners and the influence on performance. It is hypothesized that having partners directly involved in a project is beneficial for project performance. Partner organisations contribute a range of data, skills, experience, information, and other material and non-material resources that can benefit the project. Particularly in the case of regional policy, there is an argument that directly involving a range of partners in a development project can inform its design and delivery according to specific conditions and needs. It is also argued that involving networks of stakeholders in implementation improves policy performance by strengthening legitimacy and transparency in decision-making processes. Finally, network-based approaches to regional policy arguably strengthen commitment to and ownership of project outputs, increasing the likelihood of long-term impact and sustainability. Such approaches bring together a wider a range of sub-national interests, including elected authorities, business interests and civil society groups in the process of administration, potentially creating a stronger sense of accountability or 'ownership' of policies. It is therefore expected that direct connections have a positive influence on performance.

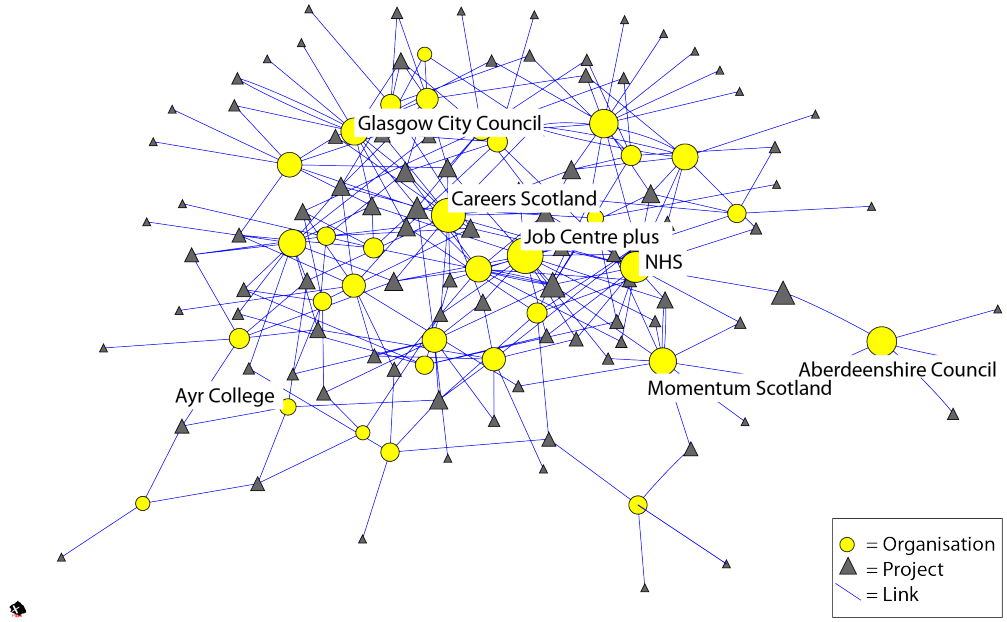
On the other hand, according to the literature the main perceived challenge to improved project performance through partnership working is its complexity. The administrative effort required to coordinate the various inputs of partners can direct vital resources to the fulfilment of purely administrative requirements and have a detrimental effect on performance. The higher the number of actors involved, the more complex the administration behind policy development and implementation becomes.

A visual representation of the network with associated projects and organisations with the highest degree centrality, makes clear the organisations that are key actors in the network as well as projects that have potentially the greatest access to information, as they have a high number of partners working on the project. Figure. 5.10 shows the overall networks of ESF and ERDF within the lowlands and uplands.

The lowlands and uplands networks of the ESF and the ERDF besides different organisations show a similar network visualisation. Within the ESF network in the lowlands and uplands there are 1503 organisations involved with the implementation of Cohesion policy. When looking at the most active organisations the network in figure 5.10 is visualised. The key actors are Glasgow city council, Job Centre plus, Careers Scotland, NHS and Momentum Scotland. Also included in this most active organisations network are for example Ayr college and Aberdeenshire Council, signalling that the councils and colleges of the Lowlands and Uplands are also represented in this network. The ERDF network of the Lowlands and Uplands is visualised by section b of figure 5.10. This network has a total of 924 organisations involved in the implementation of the ERDF fund. This visualisation, with only the most active organisations, clearly shows the central position of Scottish Enterprise (Scotland's main Economic Development Agency) in the network implementing ERDF in the Lowlands and Uplands. Other key actors are Strathclyde university, business gateway and Job centre plus (JobCentre Plus 2015). This clearly show the different organisations included in the implementation of ERDF and ESF. There are more universities involved with the ERDF in comparison to the ESF.

Figure 5.10 Degree centrality network of the Lowlands and Uplands

A) ESF Network with organisations with the highest degree centrality.



B) ERDF Network with organisations with the highest degree centrality.

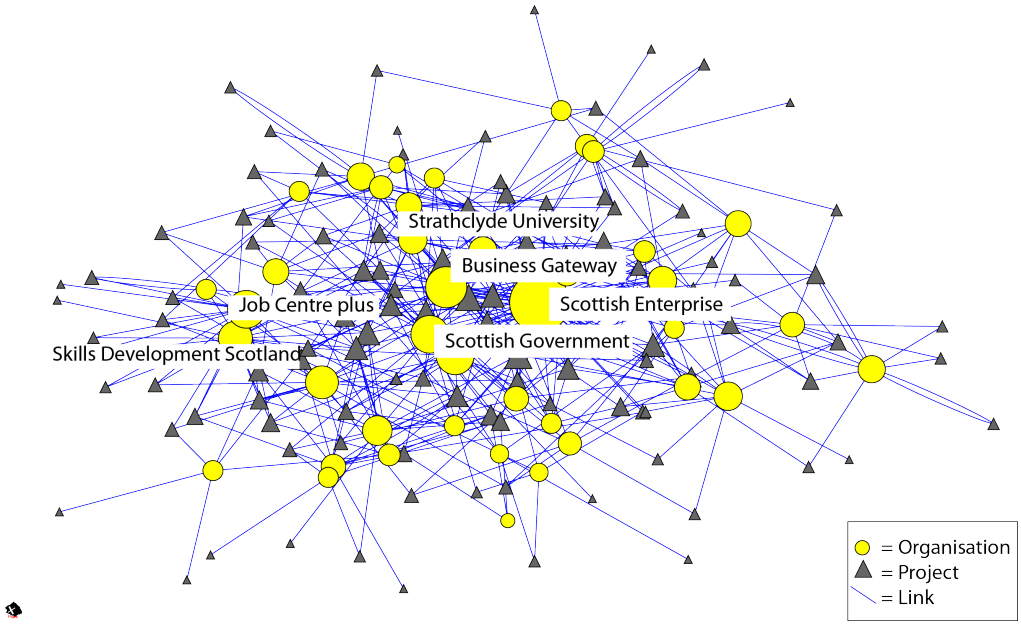
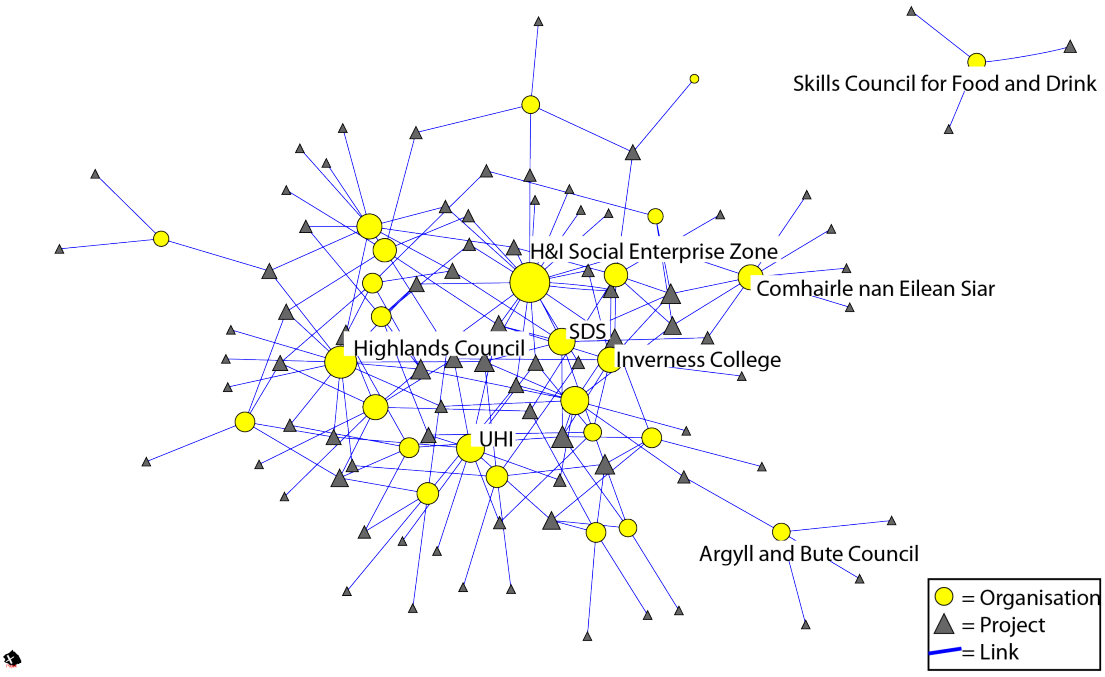


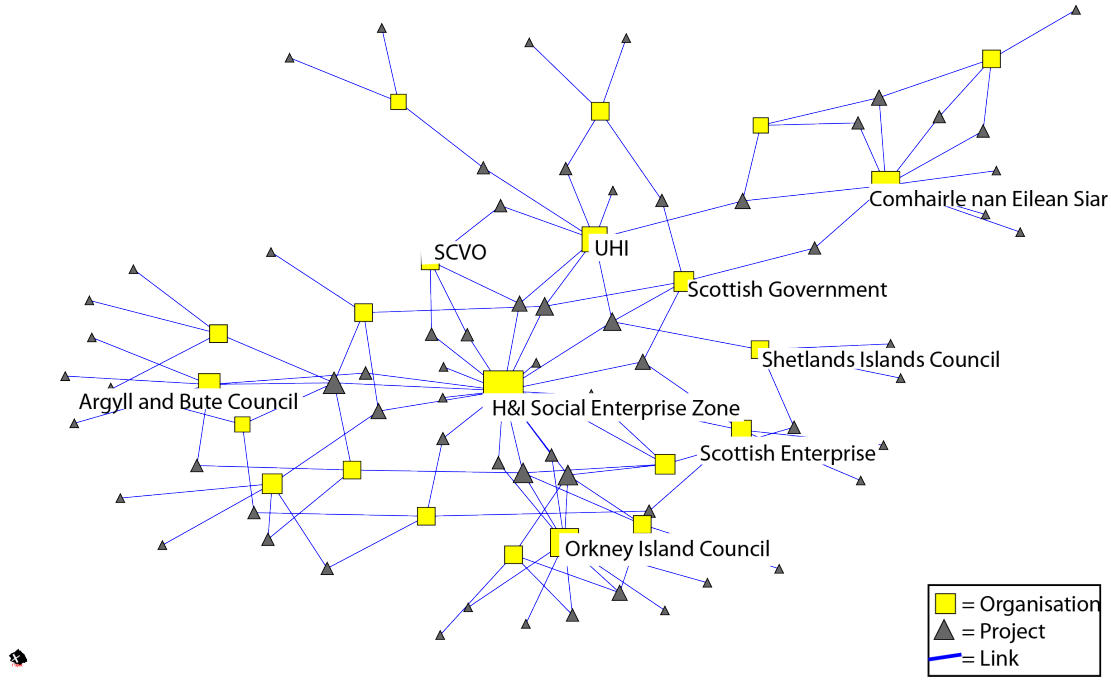
Figure 5.11 shows the networks of ESF and ERDF in the Highlands and Islands. Clearly there are less projects implemented in the Highlands and Islands compared to the Lowlands and Uplands (see section 5.2.2). The ESF network in the Highlands and Islands has a total of 681 organisations involved in implementing the funds. When looking at the visualisation of the network with most active organisations two separate parts become clear. One network is focused on the food and drink sector in the Highlands and Islands and the other network is a more general and connected network of councils, colleges, SDS and UHI. In both networks H&I Social Enterprise Zone plays an important role and is involved in a high number of projects.

Figure 5.11 Degree centrality network of Highlands and Islands

A) ESF Network with organisations with the highest degree centrality



B) ERDF Network with organisations with the highest degree centrality



5.4.1 Results of the analysis of direct connections and financial performance

A Tobit model was employed in order to test the effect of direct connections of the project and the Lead Applicant on project performance. Table 5.6 represents the results of the Tobit regression for financial performance. Four different models are considered: the control, the project, the Lead Applicant and the Complete model (which includes all variables). First, considering the direct connections hypothesis, within the project model the results suggest that adding another partner to a project has a significant negative effect on the financial performance of this project. Adding one partner to a project has an association of -0.60 (p=0.05) with financial performance. The implication is that projects with more partners are less likely to perform well in financial terms. However, when looking at the complete model, including the control, project and Lead Applicant variables, the significance disappears.

The second variable that is concerned with the direct connections hypothesis is the direct connections of a Lead Applicant in a given project to other projects where it also acts as Lead Applicant. The Lead Applicant DC, shows a significant effect on financial performance at $p< 0.001$[43] in the expected direction: more ties of the Lead Applicant as a Lead Applicant in other projects leads to stronger financial performance of the project. This means that there is a positive relationship to the connectedness of a project to other projects with the same lead applicant, through the link of a Lead Applicant. The third variable concerned with direct connections is the count of all the projects in which the Lead Applicant of a certain project is involved. This variable shows a significant negative effect on financial performance with -0.39 (p<0.001). This is consistent in both Lead Applicant and Complete model. This means there is no benefit for financial performance when a project is connected to other

[43] Only in the complete model.

projects through the Lead applicant, in which the Lead Applicant is not also the Lead Applicant. In other words, when a Lead Applicant is involved in an increasing number of projects as an ordinary partner, there is likely to be a negative impact on the financial performance of a given project.

Thus the three variables for measuring the direct connections of the project and its Lead Applicant show diverging results. Both the direct connections of the project, as well as the direct connections of the Lead Applicant to other organisations show a negative relationship, with the second being significant. However, the direct connections of a Lead Applicant to projects in which the Lead Applicant is also a Lead Applicant show a positive and significant relationship.

The effect of the significant variables

In order to assess the magnitude of the significant variables LADC and ProjDC, it is necessary to examine the effect on performance when we change the LADC and ProjDC from their 25% (1st qu.) and 75% (3rd qu.) points of the spread of these variables. For LADC this represents a change from 3 to 9. For LADC 3, there is a predicted 57.75% of financial performance and for LADC 9, there is a predicted 65.59% of financial performance. This indicates that an increase in approximately the standard deviation (the standard deviation of LADC = 6.76) of LADC results in 8% higher financial performance. For ProjDC, a change to the third quartile represents a shift from 44 to 128. At 44 there is an associated predicted financial performance of 83.99% while with a ProjDC at 128 financial performance is predicted at 49.29%. This indicates a clear negative impact of ProjDC with 33% less financial performance for projects at the 3rd quintile of ProjDC (see table 5.8).

Table 5.8 Effect size of direct connections on financial performance

Variable	1st quartile	3rd quartile	difference
LADC	58	66	8
ProjDC	84	49	- 33

Testing for a curvilinear relationship

Different studies on the performance of networks have concluded that there is not always a linear relationship between network activity and performance (L. O'Toole and Meier 2011; Torenvlied and Akkerman 2014; SEE and COMASE 2010; SEE and COMASE 2013). Torenvlied (2014), for example, found that increasing network activity after a certain threshold did not continue to add to performance. They explained this phenomenon by arguing that there is a limited amount of information needed to perform well, and there are also a limited number of actors that provide this information. When increasing network activity after that optimal point of information is reached, network activity can cause duplication, obstruction. In other words, there are 'too many voices around the table'.

An initial look at the results in Table 5.6, suggest that there is a negative relationship between number of partners in a project and financial performance, however, there could be a curvilinear effect to networking. This might, likewise, be the case for the connections the Lead Applicant has with other projects. However, when testing for this relationship by including a quadratic transformation of the variable, ProjDC and I(ProjDC^2) [44] are significant, with a -0.36 and 0.00 respectively (see Annex A). This suggests that there is not a curve-linear relationship between direct connections and financial performance. In other words, where other studies found that having extra connections as a manager, or within a

[44] Ordinary Least Square (OLS) a another statistical regression model, that in contrast to the Tobit model does not take into account the boundedness of the variables.

project, has a beneficial but diminishing impact on performance, after a certain amount of connections were established, this research did not find such a relationship. In fact, within this research there is a negative relationship between adding another partner and financial performance, however this negative relationship evens out. Suggesting that the negative effect of including more partners within a project on financial performance is evening out after a certain amount of partners are included.

This evidence suggests that in contrast with other studies, there is no curve-linear relationship between the connections of a project, or Lead applicant, and the financial performance of a project. This relationship was explained by emphasising that information gains are limited; there is only a certain amount of new information that can be used by a project through its partners, information gains from new partners after this threshold is fulfilled are not adding positively to performance.

5.4.2 Results of the analysis of direct connections and Physical performance

To test the effects of direct connections on the physical performance of projects, a binary logistic regression is estimated. Table 5.7 presents the regression results. The analysis included the same control variables used in the analysis of financial performance.

The results for the analysis of direct connections on physical performance are different than those for financial performance. The variables concerned with the direct connections hypothesis do not show any significant effects in the complete model (the model including the control, project and Lead Applicant variables). Degree Centrality shows a negative effect

on physical performance, but this is very weak effect and insignificant. LADC shows a positive and significant effect in the Lead Applicant only model (0.05 (0.02)**) however this relationship disappears when including the project variables in the complete model. ProjDC shows also an insignificant effect, even though, this relationship is in the hypothesized direction[45]. Hence, we can discard hypothesis 1 for physical performance: there seems to be no effect between direct connections and physical performance.

One explanation for the lack of relationship between direct connections and physical performance concerns the nature of physical performance. From the perspective of physical progress, it is arguable that the most valuable resource that can be exchanged in project networks is sector-specific and exchanged between actors with specific skills and experience in a given field. Therefore, it is not necessarily the amount of direct connections that leads to better performing projects. Instead, it can be argued that for physical performance the quality and experience of organisations that work in a particular field is important. Thus, to be part of a small, focused, coherent network with partners that have experience in a particular area or field in which the project is implemented will lead to stronger physical performance (see the analysis under Hypothesis 3).

These findings could potentially be explained by the way the dependent variable is operationalised. When including quadratic transformations of the variables, there was no considerable change in the significance of different variables. In addition, different operationalisations of the dependent variable were tested to assess the robustness of the findings. Five different operationalisations were included, where the line between '0' and '1' was set at 90, 80, 60 and 50. For the 80 and 60 operationalisations the results were similar

[45] Briefly note that the experience variable of the Lead Applicant only counts the number of projects in which the Lead Applicant is a Lead Applicant, it does not take into consideration weather the project partners of one project also work together in the other project of the lead applicant.

to the model included in this analysis (see Annex B). This indicates that the findings are robust to different operationalisations of the dependent variable physical performance.

5.5 Hypothesis 2: Having Indirect connections to the network is beneficial for project performance

Hypothesis 2 proposes that there is a positive relationship between having indirect connections that cover a large proportion of the network and project performance. The argument is as follows, projects and Lead Applicants can gain information, experience and 'know how' through reaching the network via indirect connections. A project can benefit from the experiences learned in other projects through partner organisations being active in these projects, or having a Lead Applicant that is active in these projects. Valuable insights and information can come from organisations that have worked in other similar projects and are familiar with the specific problems and the array of potential solutions experienced by such projects (Shrestha 2013). This hypothesis, therefore, takes into account the ability of a project to reach outside of the network of partners directly involved in a project to the wider network, by its partner organisations and its Lead Applicant.

This hypothesis emphasises a different dimension of network position than Hypothesis 1. Instead of connecting to many organisations, Hypothesis 2 argues that being connected to well-connected organisations leads to higher project performance, as the indirect reach of the project to the broader network increases, by either the indirect connections of its partners or its Lead Applicant. A critique of Hypothesis 1 is that adding more organisations to a project can lead to divergent opinions and high administrative costs. Hypothesis 2 argues that the inclusion of indirect connections, avoids the resource intensive and time consuming administration that is associated with involving many actors directly in one project, while benefiting indirectly from the experience of a wider range of organisations

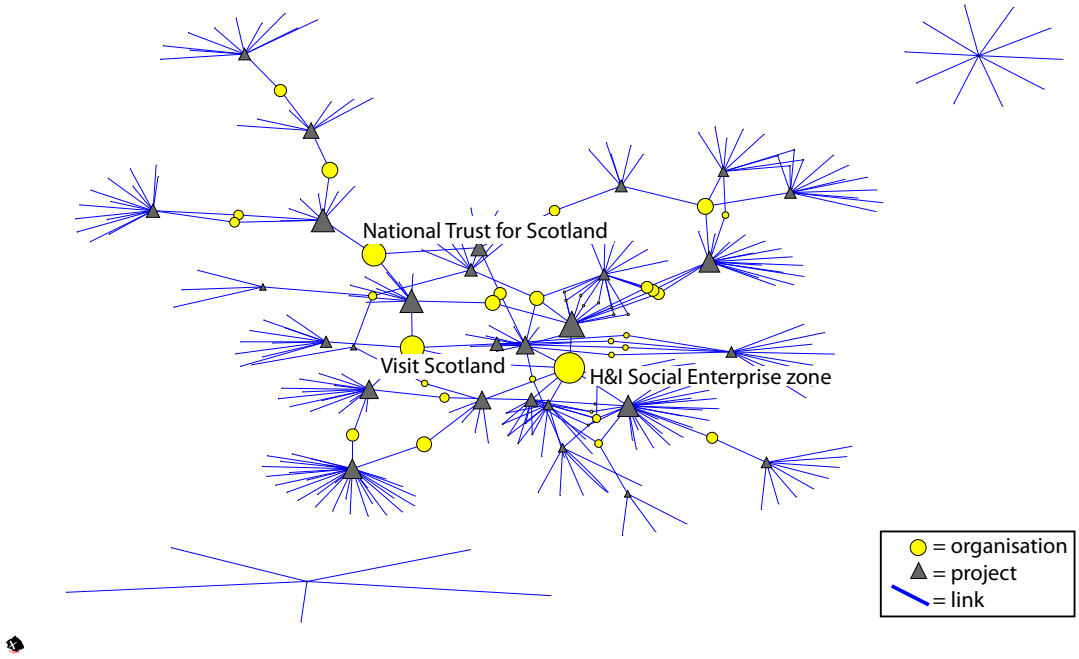
and projects that are in the network.

To test the relationship between indirect connections and project performance, 'eigenvector centrality' and 'betweenness centrality' are calculated and used as explanatory variables in the Tobit and the logistic binary regression model. Betweenness centrality assesses whether the project, through it's Lead Applicant, connects aspects of the network that otherwise would not be connected. In other words, is a project's Lead Applicant a broker between organisations and parts of the network? Eigenvector centrality measures the extent to which a project's partners are themselves connected to many other projects. It then assigns to each project a centrality score. Thus, in theory, a project with a high centrality score is able to learn from experiences acquired in other projects more easily than projects with a lower centrality score, as it takes longer for knowledge to be transferred to the given project with a lower centrality score. A project with a high eigenvector centrality score does not need to have many connections to achieve a substantial level of information, resources and know-how.

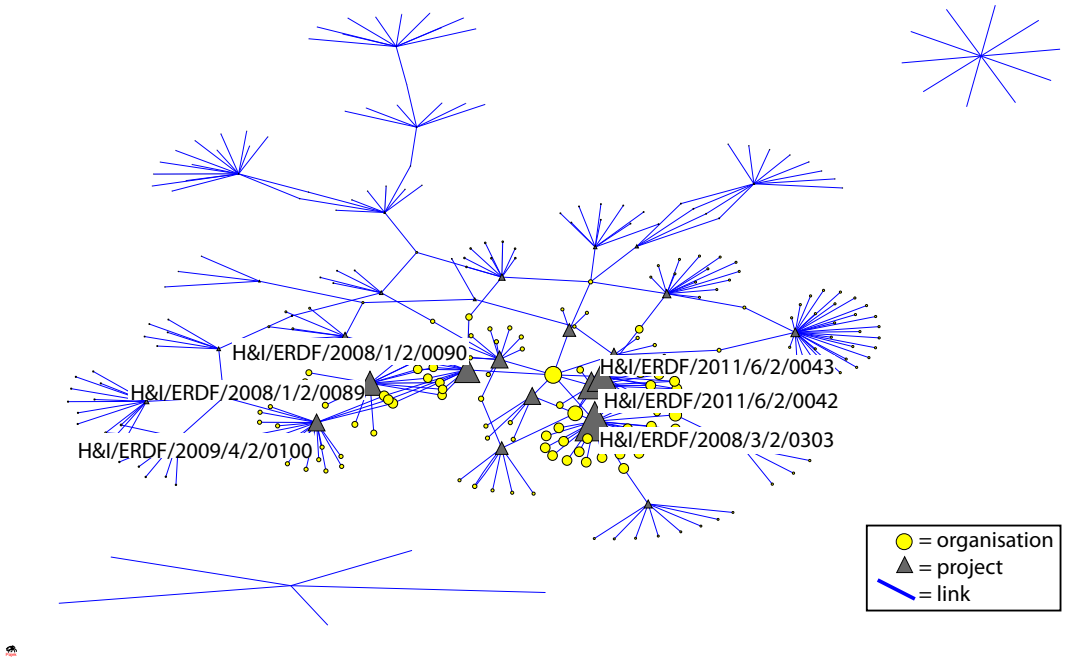
Figure 5.12 shows the ERDF Priority 2 - Enhancing key drivers of sustainable growth - of the Highlands and Islands and highlights the Lead Applicants that have the highest Betweenness centrality and the projects with the highest Eigenvector centrality within this priority. Priority 2 is just one of the four priorities within the ERDF Highlands and Islands OP. However, it really clearly shows the variation between organisations and projects in terms of Eigenvector centrality and Betweenness centrality. Section A of Figure 5.12 shows the Lead applicants and their betweenness centrality. Section B shows the projects and their eigenvector centrality. These actors can transfer or control knowledge between parts of the networks and without these nodes different sub-networks would not be connected.

Figure 5.12 Network of indirect connections in Highlands and Islands

A) Betweenness centrality of Lead Applicants in H&I ERDF P2



B) Eigenvector Centrality of projects in H&I ERDF P2



The Lead Applicants with a high betweenness centrality in the Highlands and Islands ERDF Programme are Highlands and Islands Social Enterprise Zone (HISEZ), Visit Scotland and National Trust for Scotland. These Lead Applicants are crucial for the network, in term of

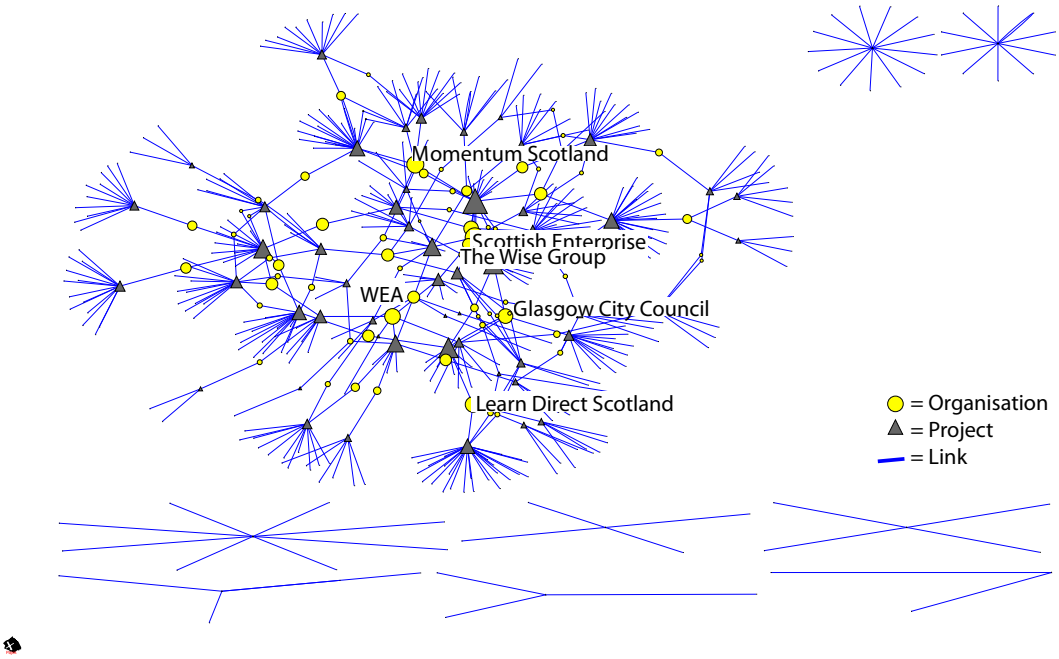
connectivity. The projects with a high eigenvector centrality in the Highlands and Islands are the projects involving the University of the Highlands and Islands (UHI) as the Strategic Delivery Body. This concerns both capital and revenue projects and indicates that the UHI in developing these projects is connected to other organisations that are themselves also central in the Priority 2 network. Other projects were implemented by the Royal Society for the Protection of Birds (RSPB), giving an indication that the RSPB is highly connected within the network of this priority.

Figure 5.13 shows the network of priority 2 of the ESF in the Lowlands and Uplands. The Lead Applicants within this priority of the ESF in the Lowlands and Uplands with the highest betweenness centrality are Momentum Scotland, Scottish Enterprise, the Wise group, Glasgow City Council, Learn Direct Scotland and WEA.

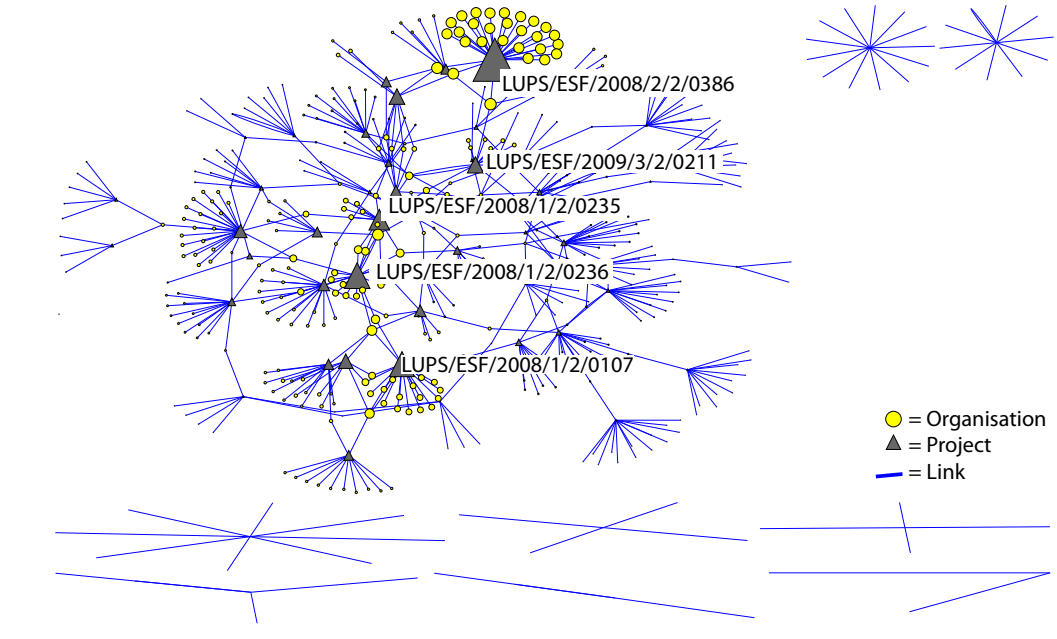
Within the ESF, there is only one project with a higher eigenvector centrality and this is implemented by the Scottish Council of Voluntary Organisations (SCVO) (Project reference number: LUPS/ESF/2008/2/2/0368). The other surrounding projects that benefit from the eigenvector centrality of the SCVO project are projects implemented by Moray College and Social Enterprise Academy

Figure 5.13 Network of indirect connections of the Lowlands and Uplands

Betweenness centrality of Lead Applicants in L&U ESF P2



Eigenvector Centrality of projects in L&U ESF P2



5.5.1 Results of the analysis of financial performance

Table 5.6 presents the results concerning indirect connections and financial performance. The same model as for the test of Hypothesis 1 is used, including the same control variables. As can be seen from the Complete model in table 5.6 and summary table 5.9, eigenvector centrality of the project has a significant effect (p = 0.013) on financial performance in the expected direction: a higher score on eigenvector centrality is associated with stronger financial performance (0.43). The Lead Applicant analysis shows a different result. In this case, Betweenness centrality, rather than Eigenvector centrality has a positive (0.11) and significant effect (p= 0.002) on financial performance. This implies that the extent to which the Lead Applicant functions as a broker between sections of the network is beneficial for financial performance. The other variables, eigenvector centrality for the Lead Applicant and Betweenness centrality for the projects were taken out of the last model, as their effect was insignificant, but also did not alter the results of the regression model[46]. Hence, the evidence supports Hypothesis 2 for financial performance.

Table 5.9 Summary table for financial performance

	Project Model	Lead Applicant model	Complete model
Project Variables			
Degree.Centrality	-0.60(0.36)·		-0.50 (0.35)
Eigenvector	0.24 (0.14)·		0.43 (0.14)**
Cohesive.Subgroup	-1.20(0.27)***		-1.95 (0.32)***
Lead Applicant Variables			
LADC		0.07 (0.32)	1.14 (0.37)**
ProjDC		-0.33 (0.07)***	-0.41 (0.07)***
BTC		0.12 (0.002)***	0.16 (0.002)***
Kcore		0.69 (0.37)·	1.02 (0.36)**

[46] When included in the model The Eigenfactor centrality of the Lead partner shows an insignificant result (p=0.25), but in the hypothesised direction (0.13). Betweenness centrality has a weak and negative association with financial performance (-0.009), but is not significant (P = 0.17). See annex C.

As the results show, indirect connections are beneficial for the financial performance of EUCP projects. Both indirect reach of a project measured through the extent of network that is connected to the project by its partners, and Betweenness centrality of the Lead Applicant of a project is associated with higher financial performance in projects. In other words, the analysis indicates that the financial performance of CP projects in Scotland benefits from indirect ties that enable access to resources and information outside the direct network of a project. In addition, betweenness centrality of a project's Lead Applicant (BTC) is also associated with higher financial performance. This emphasises the importance of the 'broker' function i.e. the active role of an organisation in network building and partnership working. In this context, it is important to note that some Lead Applicant organisations have broker type functions as part of their explicit remits (e.g. Scottish Enterprise, Highlands and Islands Enterprise, Skills Development Scotland, The Prince's Trust). This shows that indirect connections of projects and Lead Applicants are beneficial for financial performance of a project.

The effect of the significant variables

To examine the magnitude of the significant variables Eigenvector and BTC, the effect on performance was assessed when the variables were changed from the 25% and 75% points of spread of these variables. For Eigenvector centrality that is a change from 0.0018 to 0.014 and this had an associated change in performance from 58 to 64. This indicates that when a project has eigenvector centrality of 0.014 compared to 0.0018, there is an increase of 5% in financial performance. For BTC this assessment involves a change from 0.002 to 0.015, producing an associated change in performance from 45% to 66% of financial performance. This indicates that when a Lead Applicant has a BTC of 0.015 compared to one of 0.002 there is an associated increase in financial performance of 21%. The relationship between

eigenvector centrality of a project and financial performance might be significant, but the effect is not strong. This is in contrast to the relationship between Betweenness centrality of a Lead Applicant and financial performance. This relationship is not only significant, but the effect is quite substantial.

Table 5.10 Effect size of indirect connections on financial performance

Variable	1st qu.	3rd qu.	Difference
Eigenvector	58,23	63.57	5.34
BTC	44.99	66.08	21.09

5.5.2 Results of the analysis of physical project performance

Hypothesis 2 holds that indirect connections to the network are beneficial for physical project performance. Table 5.7 and summary Table 5.11 present the results of the analysis of Hypothesis 2 for physical performance. The analysis included the same control variables used in the analysis of financial performance and of Hypothesis 1. As mentioned in the introduction section to this chapter, physical performance is operationalised in a binary manner, where all the projects that reached 70% of their indicators are scored as 1, and the other projects scored as 0. To analyse Hypothesis 2, Eigenvector centrality for the project and Betweenness centrality for the Lead Applicant were included in the analysis.

Table 5.7 shows that indirect reach of the project, measured by the eigenvector centrality, has a negative effect on the probability of having a project with higher than 70% of its achieved indicators. This is significant in the analytical model that includes the Project variables as well as in the 'Complete' model (combining project and Lead Applicant variables). Betweenness centrality of the Lead Applicant also shows a negative relationship (-4.24) with physical performance and becomes stronger in the Complete model (-10.48). However, this relationship is insignificant.

Table 5.11 Summary Table Physical performance

Project Variables			
Degree.Centrality	-0.02 (0.02)		-0.02 (0.02)
Eigenfactor	**-19.96** (8.04)*		-14.13 (8.56)·
Cohesive.Subgroup	**0.06** (0.02)***		**0.07** (0.02)**
Lead Partner Variables			
LADC		0.05 (0.02)**	0.02 (0.02)
ProjDC		0.00 (0.00)·	0.00 (0.00)
BTC		-4.24 (7.51)	-10.48 (18.06)
Kcore		0.00 (0.02)	-0.01 (0.02)

The negative results for eigenvector centrality on physical performance are arguably related to the sort of knowledge and expertise that is being transferred across these indirect ties. In other words, indirect connections to broader networks may give access to general information about the formal requirements associated with financial performance – in the application process, reporting, audit etc. (as argued in the analysis of Hypothesis 1). However, these indirect connections might not transfer information and expertise that are valuable for good physical performance. The nature of physical performance may require selective, close ties to actors with experience in the specific field in which the project is implemented.

The effect of the significant variables

To examine the effect of a higher eigenvector centrality on having a project that achieved its 70% of its physical performance we compare the probability at the 1st qu and the 3rd qu. For eigenvector this is 0.0018 and 0.014 this has an associated probability of 0.69 and 0.64 respectively. Indicating that when a project has a higher eigenvector centrality its probability of having a project that achieves 70% of its output indicators is lowered by 0.05. This variable might be significant, but the size of the effect is small.

Table 5.12 Effect size of indirect connections on physical performance

Variable	1st qu.	3rd qu.	Difference
Eigenvector	0.69	0.64	-0.05

5.6 Hypothesis 3: Being embedded within the network is beneficial for performance.

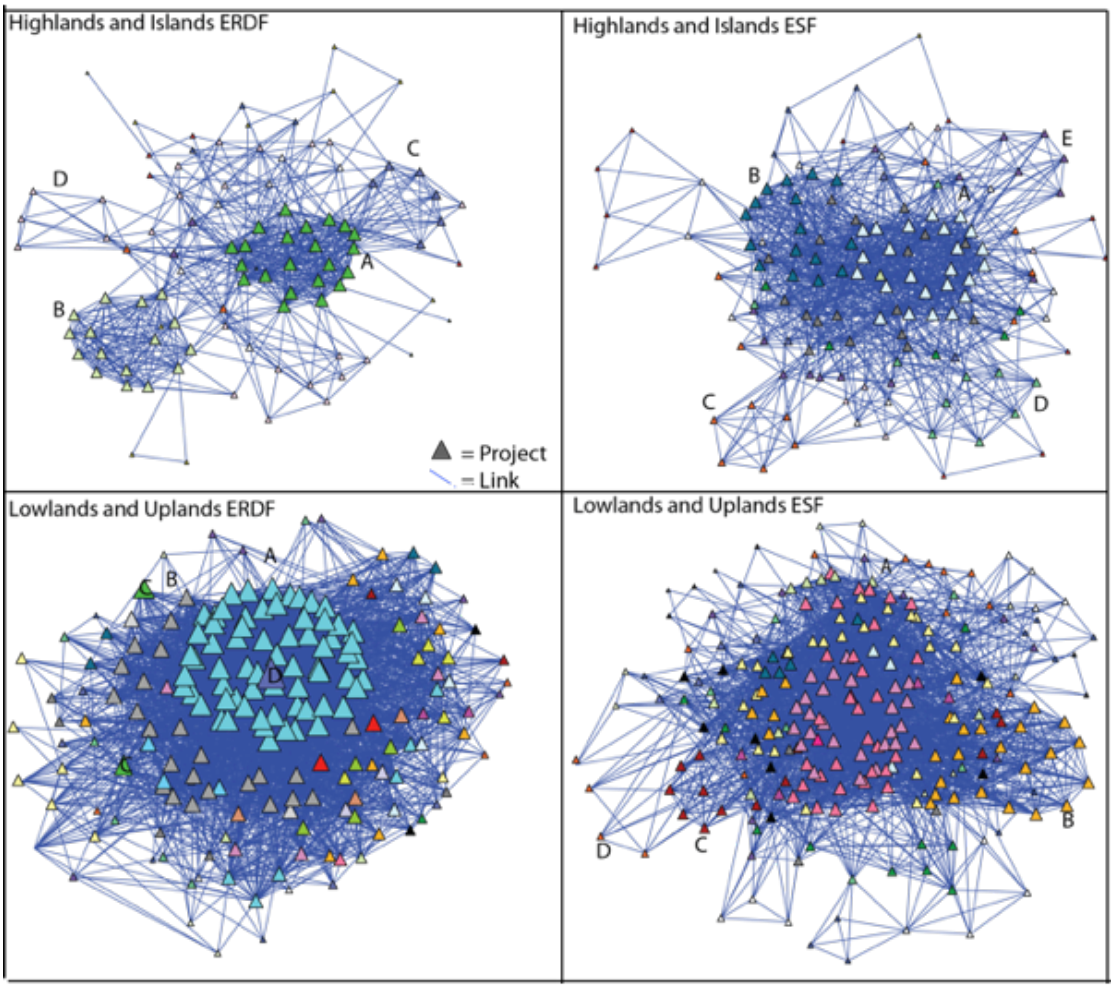
Hypothesis 3 explores the relationship between embeddedness in a network and project performance. The concept of embeddedness implies that the networks in which projects are implemented, or Lead Applicants operate, consist of closely and strongly knit communities of actors. An agency's network relations are defined as 'embedded' when they are simultaneously strong and closed. A strong network relation consists of overlapping interactions, and through these recurring interactions a strong network relation emerges. These overlapping and strong relations between agencies strengthen resource and information exchange and boost the understanding of mutual needs and interests (Schneider et al. 2003) (Gulati, 2007). A closed network relation implies that the two agencies share a link with other agencies (Coleman, 1990). In closed networks, information about the relationships between agencies becomes available to third parties. Consequently, an agency's reputation can be easily damaged when it provides incorrect information, insufficient resources, or withdraws from cooperation. The agency's reputation affects the likelihood of receiving information and resources in the future, from the other network partners.

Therefore, Hypothesis 3 argues that projects have higher performance when they are implemented by organisations that have strong, overlapping and closely knit relationships (embeddedness). Cohesion policy projects are anticipated to perform better financially and physically when the project partners work as a cohesive, embedded group that is committed to the success of the common project. This behaviour is more likely when the partners of a

project have a common set of projects, rather than among organisations whose projects are unrelated to each other and in competition for the same funding. The mutually reinforcing set of ties among partners through common projects discourages opportunism in individual partners as partners in the subgroup are able to monitor each other's deviant behaviour and impose a credible threat of sanctions.

In both regression models the variable Kcore tests this hypothesis. The variable Kcore is measured by transferring the two-mode network into a one-mode network, where projects are connected with projects if they have an organisation that works on both projects. Then each project node is assigned a score based on the number of connections through the one-mode network (see fig. 5.12). For the embeddedness of a project's Lead Applicant, the two-mode network is transformed into a one-mode network, where organisations are connected with other organisations if they work together on a project. Each Lead Applicant is assigned a score based on the number of connections through this one-mode network. Figure 5.12 shows the one-mode network connecting projects with projects, when they share a partner-organisation. This figure shows four different networks based on the OPs in Scotland 2007-2013.

Figure 5.14 Embeddedness of the different OPs



The Highlands and Islands ERDF network subgroup B are projects implemented through Comhairle nan Eilean Siar (Western Isles Council), Sealladh na Beinne Moire (Community company based at Isle of South Uist), and the Highland Council (The Council authority for the Highlands). The biggest embedded group, A, has projects with a more diverse base of Lead Applicants. But a common theme are the big governmental organisations such as HIE, UHI, SE as well as smaller ones, such as Royal Society for the Protection of Birds, New Start Highlands and the Highlanders Museum. The other subsets are Orkney (C) and Shetland based (D).

The Highlands and Islands ESF network has two main subsets (A and B), and three subsets that are on the outside of the network (C, D and E). The two main subsets A and B are relatively similar with Councils, UHI, HIE, and the Caithness chamber of commerce. Subset B has more emphasis on organisations such as colleges and voluntary organisations. Subset C is a combination of projects that often work with Argyll & Bute Council and Scottish Cambers of Commerce. Subset D is really focused on projects with Comhairle nan Eilean Siar, and subset E is a subset of projects implemented through the Scottish Bakery Training Council and the Scottish Federation of Meat Traders.

The Lowlands and Uplands ERDF clearly has only one major subset (A), with other projects (B and C) to various degrees integrated into that one main subset. There is one project (D) in the middle of the main subset to which almost all other projects are connected. All three subsets A, B and C have connections between organisations such as councils and universities. There are some other organisations such as the Crichton Carbon Centre and Stirling Enterprise Park that are also involved in these main subnetworks. This shows that the councils, universities and other centres work together. The one project in the centre (D) is implemented by the University of Glasgow and is called Encompass. It is University of Glasgow's flagship innovation programme and has the aim to work with and develop SMEs to increase the level of engagement between the research base and the SME community. The first steps towards cooperation between university and SMEs are encouraged through the availability of £5,000 innovation grants for feasibility studies.

The ESF of the Lowlands and Uplands has one major subset (A), two subsets on the outskirts of the network (B and C), and a set of organisations that are an emerging subset (D). The main subset A, includes a wide variation of different organisations. However the location of these organisations is important: most of them are localised in the South west of Scotland,

particularly Glasgow. Subset B is completely focused on the projects that Glasgow Clyde College is implementing, indicating that organisations within this subset work together on different projects. This is similar for Subset C, which is based around the Scottish Qualification Authority. Lastly, subset D has regional focus on Fife. This shows the different subset of embedded relations within the different OPs. It clearly shows the difference between the Highlands and Islands and Lowlands and Uplands.

5.6.1 Results of the analysis of financial performance

Table 5.6 represents the results for Hypothesis 3, assessing whether more embeddedness of a project or a Lead Applicant leads to higher financial performance. This hypothesis of embeddedness is represented by the variable 'Cohesive Subgroup' for the project and 'Kcore' for the Lead Applicant. For the project, Table 5.6 and Summary table 5.13 show there is a significant relationship ($p < 0.001$), however in the opposite direction that was hypothesized. Namely, embeddedness of the project has a strong negative effect (-1.95) on financial performance. In contrast, embeddedness of a Lead Applicant is positively associated with higher levels of financial performance. Having a Lead Applicant with a higher score of embeddedness has a significant effect in the expected direction (1.02). Hence, Hypothesis 3 can be rejected for the embeddedness of the project and its effect on financial performance; however, it can be accepted for the embeddedness of the Lead Applicant and its effect on financial performance.

Table 5.13 Summary table for financial performance

	Project Model	Lead Applicant model	Complete model
Project Variables			
Degree.Centrality	-0.60(0.36)·		-0.50 (0.35)
Eigenvector	0.24 (0.14)·		0.43 (0.14)**
Cohesive.Subgroup	-1.20(0.27)***		-1.95 (0.32)***
Lead Applicant Variables			
LADC		0.07 (0.32)	1.14 (0.37)**

ProjDC		-0.33 (0.07)***	-0.41 (0.07)***
BTC		0.12 (0.002)***	0.16 (0.002)***
Kcore		0.69 (0.37)·	1.02 (0.36)**

This contrasting effect between embeddedness of the project and embeddedness of a project's Lead Applicant on financial performance, can potentially be explained by the argument that financial performance does not necessarily benefit from strong and closely-knit relations between partner organisations that are familiar with each other. Financial performance is in most of the projects the responsibility of the Lead Applicant. When the project is implemented in a network with strong and closely-knit relations among partners effective financial performance may be hindered. This builds on Hypothesis 1 (see section XX), and the argument that impaired financial performance can result not just from having too many partners involved in project implementation but from having close-knit and strong partnerships between organisation. When a project is implemented by a closely-knit, embedded network, there is scope for more debate and disagreement and less likelihood of a clear hierarchical structure that makes important decisions on project finances. There can be more potential for debate on allocation of funding, as these organisations have experience of working in the same territory or sectoral area in the long term. With embedded project partners there is the possibility of deadlock and rivalry, leading to less efficient financial performance.

In contrast, embeddedness of a Lead Applicant is positively associated with higher levels of financial performance. Having a Lead Applicant with a higher score of embeddedness has a significant effect on financial performance in the expected direction (1.02). In other words, networks of closely-knit organisations that surround a Lead Applicant, positively influence project financial performance. As financial performance is in most projects the responsibility of the Lead Applicant, a strong network where other partners have worked more often with

the Lead Applicant is established, and partners know how the Lead Applicant prefers to organise the reimbursement of activities.

The effect of the significant variables

To examine the effects of the significant variable of embeddedness on financial performance, the change in financial performance when the embeddedness of a project is 3 compared to 13 is assessed. The associated financial performance of Kcore being 19 and 27 is also analysed. Cohesive subgroup at 3 predicts a financial performance of 73%, while Cohesive Subgroup of 13 predicts a financial performance of 54%. This is a decrease of 19.5% on financial performance. Kcore at 19 predicts a financial performance of 59 and a Kcore at 27 predicts a financial performance of 67. This is an increase of 8% on financial performance. This shows that the effect of embedded project partners is quite substantial compared to the embeddedness of the Lead Applicant in terms of financial performance.

Table 5.14 Effect size of embedded connections on financial performance

Variable	1st qu.	3rd qu.	Difference
Cohesive Subgroup	73.03	53.53	-19.5
Kcore	58.74	66.93	8.19

5.6.2 Results of the analysis of physical project performance

Table 5.7 and summary table 5.15 show the results for the analysis of Hypothesis 3 for physical performance. Here it is hypothesised that stronger embeddedness of the project and the Lead Applicant leads to higher physical performance. The results from the binary regression show that the embeddedness of a project is positively associated to physical performance. A one point higher score for embeddedness is associated with 0.07 higher physical performance. For the Lead Applicant to have a higher score for embeddedness is

insignificant, showing no effect on physical performance. Hence, we can accept Hypothesis 3 for physical performance for project embeddedness.

These results suggest that for physical performance, a strong and dense network of organisations that implement a project together is beneficial. This can be explained as these organisations become 'embedded', meaning they have a dense network of strong and closely-knit connections. They become familiar with the different organisations working in this territorial area for economic development. In addition, through working together they understand the challenges of the area and they can share lessons learned about how to implement the policy to address the needs of the territory.

Table 5.15 Summary Table physical performance

Project Variables			
Degree.Centrality	-0.02 (0.02)		-0.02 (0.02)
Eigenfactor	-19.96 (8.04)*		-14.13 (8.56).
Cohesive.Subgroup	**0.06** (0.02)***		**0.07** (0.02)**
Lead Applicant Variables			
LADC		0.05 (0.02)**	0.02 (0.02)
ProjDC		0.00 (0.00).	0.00 (0.00)
BTC		-4.24 (7.51)	-10.48 (18.06)
Kcore		0.00 (0.02)	-0.01 (0.02)

The effect of the significant variables

To examine the effect of the significant variable Cohesive Subgroup on the probability of having a project that did achieve 70% or more of its output indicators, we predict that probability of this change at a Cohesive Subgroup of 3 and a Cohesive subgroup at 13. The probability of having a project with 70% or more of its output indicators achieved is at 0.56 with a Cohesive subgroup of 3. The probability of having a project with 70% or more of its output indicators achieved is 0.72. This shows an increase of 16 on the probability of having

a project achieving 70% or more of its output indicators.

Table 5.16 Effect size of embeddedness on physical performance

Variable	1st qu.	2nd qu.	Difference
Cohesive Subgroup	0.56	0.72	0.16

5.7 Concluding remarks

This chapter tested the three hypotheses for financial and physical performance. As the analysis shows there is considerable variation in the performance of projects of Cohesion policy in Scotland, both in financial and physical performance terms. Important control variables were set out and crucial summary statistics of the explanatory variables were given before modeling the Tobit and Binary regression to analyse the effects of partnership-working on the dependent variables (financial and physical performance).

Overall, it can be concluded that partnership working does have benefits for financial and physical performance. However, different structures of partnership have different effects on the two different types of performance included in this study. Therefore, a more detailed and sophisticated interpretation of networking approaches based on partnership-working must be employed.

Hypothesis 1 stated that the direct connections of a project or Lead Applicant are beneficial to performance. A basic result of the regression models, illustrated in Tables 5.6 and 5.7, is that increased partnership working or more collaboration (e.g. more direct network connections) does not automatically lead to the improved financial performance of projects. Indeed, the results indicate that adding another partner to a project has a negative effect on its financial performance. Adding one partner to a project has an association of -0.60 ($p=0.5$), only in the project model with financial performance. Neither is there clear support

for this hypothesis in terms of physical performance. The effort to solicit and integrate inputs from a broad range of partners with different resources and interests can thus undermine the strategic coherence of interventions and complicate delivery arrangements.

However, SNA provides important insights concerning not just the number of actors in a project network but also relating to network organisation and the quality of relationships between partners. In this context, the regression analysis provides a more sophisticated picture of the relationship between the extent of project networks and financial performance. Notably, this refers to the role of the Lead Applicant. The literature highlights that the benefits of partnership-working for project performance largely depend on the existence of several factors that are associated with the characteristics of a Lead Applicant: prior experience of partnership working; accommodation with national institutional, administrative and cultural traditions; and, availability of resources, including the capacity necessary to deal with complex EU and/or domestic regulatory systems.

The results of the analysis under Hypothesis 1 support these arguments: having a project with a Lead Applicant that is also the Lead Applicant on other projects is associated with higher levels of financial performance. Adding one more project as Lead Applicant, to the Lead Applicant of the project is associated with 1.52 (p= ***) higher financial performance. However, it should be noted that the experience acquired by being a Lead Applicant on another project is more beneficial to financial performance than experiences acquired by being an ordinary partner on a project. This emphasises the role of leadership in project partnerships: Lead Applicants have a greater financial and reputational stake in project implementation than other partners and commit more financial and administrative resources. In return, they gain valuable experience of the implementation process that is transferrable to other projects where they play a leading role. Such transfer of experience

and knowledge is not significant for ‘ordinary’ project partners.

The negative effect of having a Lead Applicant that is also an 'ordinary' partner on many projects is associated with -33 on financial performance comparing the 1st qu. to the 3rd qu. The positive effect of having a Lead Applicant that also works on other projects as Lead Applicant is associated with an increase of 8 on financial performance, comparing the 1st and 3rd qu.

The second hypothesis that was tested stated that indirect connections are beneficial to project performance. In other words, Hypothesis 2 proposes that there is a positive relationship between having indirect connections that reach a large proportion of the network and project performance. The results of Hypothesis 2, suggest that this can be accepted its for financial performance. The results of the regression model for financial performance indicate a positive relationship between higher eigenvector score of a project and higher betweenness centrality of a Lead Applicant. When exploring the effect size of these significant variables, betweenness centrality shows a change of 21 when comparing the 1st and 3rd qu and eigenvector centrality shows a change of 5 when comparing the 1st and 3rd qu.

However, Hypothesis 2 cannot be accepted for physical performance. Eigenvector centrality shows a negative and significant effect on physical performance. This result can be related to the sort of knowledge and expertise that is being transferred across these indirect ties. Indirect connections to a wider network may give access to more general technical information that can influence financial performance - in terms of application process, reporting, audit etc. This is generic information on regulatory and implementation-related requirements that are applicable across the whole network. However, these indirect

connections might not transfer information and expertise that is valuable for physical performance. The nature of physical performance may require selective, close ties to actors with experience in the specific field in which the project is implemented.

Hypothesis 3 stated that closely-knit networks would lead to higher performance of projects. The results show that the degree of embeddedness of the Lead Applicant is positively associated with financial performance. However, embeddedness of the project is negatively associated with financial performance. The analysis of the magnitude of these significant variables shows that the embeddedness of the project is associated with -19% on financial performance when predicting with the 1st and 3rd qu. The embeddedness of the Lead Applicant is associated with a increase of 8 on financial performance when changing from the 1st to the 3rd qu.

Financial performance is, in most of the projects, the responsibility of the Lead Applicant. When the project is implemented in a network with strong and closely-knit relations between all the partners, effective financial performance may be hindered. This builds on the findings of Hypothesis 1 (see section 2.3) that argues that financial performance can be hindered as a result from having too many project partners. The findings of Hypothesis 3 can add to this that when a project is implemented through partners that have strong and closely-knit relations financial performance is hindered as well.

However, this is in contrast with the 'embeddedness' of the Lead Applicant. Having a Lead Applicant with a higher score of embeddedness has a significant effect on financial performance in the expected direction (1.02). This suggests, that the extent to which a Lead Applicant is embedded in a network of strong and close-relations does have a positive impact on financial performance. In turn, this indicates that in general, for financial

performance, the Lead Applicant plays an important role. Financial performance is in most projects the responsibility of the Lead Applicant, a strong network where other partners have worked more often with the Lead Applicant is established, and partners know how the Lead Applicant prefers to organise the reimbursement of activities.

The physical performance analysis shows that the embeddedness of the project is positively associated with physical performance. The embeddedness of the Lead Applicant is not significant for physical performance. The magnitude analysis shows that the change from the 1st qu to the 3rd qu shows an increase of 0.16 in the probability of having a project with 70% or more of its output indicators achieved. Evidence confirms that an embedded group of organisations that is committed to the success of a common project ensures the physical performance of that project. The mutually reinforcing set of ties among partners through common projects discourages opportunism in individual partners as partners in the subgroup are able to monitor each other's deviant behaviour and impose a credible threat of sanctions. This behaviour is more likely when the partners of a project have a common set of projects, rather than among organisations whose projects are unrelated to each other and are in competition for the same funding.

These results confirm that assessments of the relationship between collaborative networks and policy performance must take a disaggregated approach. Different network structures are beneficial for different performance indicators.

6. Concluding chapter

This thesis explored the influence of network-based approaches to policy design and implementation on the performance of public policy projects. Since the 1970s, the role of policy networks - clusters of actors, each with an interest, or 'stake' in a given policy sector – has been considered an increasingly important factor in studies of policy success or failure. The utility and effect of network-based approaches to public policy design and delivery has become prominent in public sector discourses and academic debate. Nevertheless, existing research is inconclusive: there is no consensus on what type of network-based implementation affects what aspect of policy performance. This research adds to this debate by focusing on three different network features and two aspects of policy performance.

Although networks and collaborative approaches to implementation are increasingly common, there is still uncertainty about what types of partnership or network structures are beneficial to overall performance of policies. Studies stress the retained powers of governments and the prominence of policy implementation hierarchies, even where policy networks operate, raising questions about whether genuine partnership is in action. In addition, critiques of network-based approaches note that they can complicate the process of policy implementation, creating additional costs, coordination challenges, overlaps and duplication. All of this can undermine, rather than strengthen, policy performance. Thus, key questions remain: is a network approach to implementation beneficial to policy performance; and, if so, how can a network-based approach be best designed to achieve the best possible outcomes?

These questions are central to ongoing academic debate in public policy research. They are also crucial from a practitioner's perspective. Questions concerning the optimal approach to policy design and implementation have been sharpened in the context of the global financial crisis. The resulting constraints on public policy budgets and processes of administrative streamlining, have motivated policy-makers' desire to find out 'what works' and to design and implement policy efficiently.

A review of the literature set out the basic research question: do network based approaches to implementation improve the performance of public policy? This review identified three structural features that are argued to have an impact on performance and produced related hypotheses:

1. More direct connections lead to higher project performance
2. More indirect connections lead to higher project performance
3. Stronger embeddedness among project partners leads to higher project performance

The research methodology employed to answer the main research question and test the three hypotheses is new and innovative. It focuses on Cohesion policy in Scotland and follows a mixed-methods approach that incorporates qualitative and quantitative dimensions, the latter incorporating SNA techniques in policy network analysis. First, the methodology focuses on a single case study - Cohesion policy implementation in Scotland. The collaborative network for the implementation of Cohesion policy is a valuable network to study, as Cohesion policy formalised network approaches to implementation through its partnership principle. In addition, Cohesion policy is characterised by multilevel governance, meaning that governmental organisations at different territorial levels are included in the policy. In theory at least, this promotes the inclusion of networks of public, private and non-profit organisations into the design and implementation of Cohesion policy. Scotland's institutional context within the United Kingdom, the evolution of its approach to policy-

making in recent decades and the prominence of the Cohesion policy partnership model in Scotland made the country an ideal locus for the case study. Semi-structured interviews with Cohesion policy project partners in Scotland provided qualitative insights into the network arrangements of different projects. The second element of the methodology was quantitative. By analysing a database of 700 Scottish Cohesion policy projects and the corresponding implementation network, systematic, quantitative data were acquired. The inclusion of SNA provided a new and systematic way to research collaborative networks for the implementation of Cohesion policy. SNA has been applied only to a limited extent in public policy analysis. However, it provides a valuable framework to systematically analyse collaborative processes, the challenges of collective action, and the impact on performance.

Section 2 of this chapter will summarise the empirical findings in relation to the research hypotheses and synthesize these results with the insights gathered from the semi-structured interviews. Section 3 explores the theoretical implications of these findings and makes some policy recommendations. Section 4 will note limitations of the current study and future directions that follow-up studies might take.

6.1 Empirical Findings

The research methodology produced qualitative and quantitative data that in combination generated important empirical findings to answer the overall research question and to support arguments in relation to the three hypotheses. The main findings of the statistical tests are summarised in Table 6.1 and 6.2.

Table 6.1 Summary of analysis of financial performance

Finanacial Performance		
Hypotheses	Project Partners	Lead Applicant
Hyp1a: Direct Connections	n.s.	n.s.
Hyp1b: Lead applicant as Lead Applicant		+
Hyp2: Indirect Connections	+	+

Hyp3: Embeddedness	-	+

n.s.: not significant; +: positive and significant; -: negative and significant.

Table 6.2 Summary of analysis of physical performance

Physical Performance		
Hypotheses	Project Partners	Lead Applicant
Hyp1a: Direct Connections	n.s.	n.s.
Hyp1b: Lead applicant as Lead Applicant		n.s.
Hyp2: Indirect Connections	-	-
Hyp3: Embeddedness	+	n.s.

n.s.: not significant; +: positive and significant; -: negative and significant.

6.1.1 Do more direct connections lead to higher project performance?

The first hypothesis concerned the role of direct connections between partners in producing higher project performance. It is argued that having stronger network activity and connecting to more organisations creates greater access to resources, information and know-how, which in turn leads to better project performance. The research tested these direct connections in three dimensions: direct connections of a project to different partners; the direct involvement of a project's Lead Applicant's in other projects; and, the direct connections of the Lead Applicant to projects in which that organisation was also the Lead Applicant. These types of direct connection were assessed according to their beneficial impact on a project's financial or physical performance. By including two variables on the direct connections of a Lead Applicant, it was possible to distinguish between the number of projects the Lead Applicant was involved in and the number of projects in which the same organisation was a Lead Applicant.

The statistical analysis did not produce evidence of a significant relationship between having a higher number of partners involved in a project and financial or physical performance. Similarly, qualitative insights from the semi-structured interviews did not indicate that more

partners are beneficial for performance, financially or physically. In fact, project managers indicated that, while they valued working with different partners, during the course of a project partners can become less engaged. The same level of participation in the project application was not maintained. As the project progressed, the organisations with the strongest interest in the project field became the most actively involved while others participated less. This indicates that there are limitations to the inclusion of partners. There is a threshold or critical mass of partners beyond, which the benefits of network-based approaches for policy performance are questionable. Initial project networks were often too large for efficient design and implementation and that this had an impact on performance.

The direct connections hypothesis can however be accepted for the direct connections of the Lead Applicant. As Table 6.1 shows, the direct project connections of a Lead Applicant only have a positive influence on financial performance of a project when these connections are to other projects in which the organisation is also a Lead Applicant. This emphasises the role of leadership in project partnerships: Lead Applicants have a greater financial and reputational stake in project implementation than other partners and commit more financial and administrative resources. In return, they gain valuable experience of the implementation process that is transferrable to other projects where they play a leading role. Such transfer of experience and knowledge is not significant for 'ordinary' project partners.

Insights from the interviews can be combined with the statistical analysis to support this finding. Several interviewees indicated that the involvement of the Lead Applicant had a beneficial impact. In certain cases, the Lead Applicant was responsible for the administration of a number of projects, and the other project partners could focus on more strategic aspects of the project. This shows the beneficial impact of the Lead Applicant in the efficient

division of project implementation tasks. It is however important to note, that this only holds for financial performance.

6.1.2 Do indirect connections lead to higher project performance?

The second hypothesis assessed the importance of indirect connections of the project and the Lead Applicant. The argument is that by connecting indirectly through a wider proportion of the network, more know-how information and resources can reach the project or Lead Applicant, which in turn leads to higher performance. The results of this hypothesis indicate a positive relationship: the greater the number of indirect connections of both projects and Lead Applicants, the better performance of a project. However, this relationship only holds for financial performance.

Evidence gathered from the interviews also indicated the importance of indirect connections, emphasizing the role of a Lead Applicant acting as a 'broker' between different parts of the network. As network-based approaches led by Lead Applicants brought together different organisations and combined project knowledge, small organisations did not become burdened with the onerous financial control and management requirements for small amounts of money[47]. However, this relationship is related to procedural and regulatory matters (applications, claiming process, audit etc.) that are important for financial performance rather than physical performance.

The relationships analysed through SNA concerned connections between organisations when they work together on the same project. The semi-structured interviews gathered insights more broadly on the connections of the partners in the projects. This latter

[47] interview 8, dated 1st March, 2013

approach produced important insights related specifically to a key structure in Scotland's Cohesion policy networks – Community Planning Partnerships (CPPs). It emerged that several CPP project managers lacked practical knowledge on how the CPPs in relation to Cohesion policy operated. As a result, they created an informal network among themselves. This network increased the indirect connections of the CPP's: while not working directly with all other CPPs they gained important information, and clarified some pressing technical issues.

These empirical findings can bring us to the conclusion that indirect connections are positively related to financial project performance. This can be explained by the sort of knowledge and expertise that is being transferred across these indirect ties. Indirect connections to a wider network give access to general, technical information that can influence financial performance - in terms of application process, reporting, audit etc. This is generic information on regulatory and implementation-related requirements that are applicable across the whole network. However, these indirect connections might not transfer information and expertise that is valuable for physical performance.

6.1.3 Does stronger embeddedness among project partners lead to higher performance?

The third hypothesis argues that embeddedness of organisations, that is the extent of interaction between partners through experience of working together cooperation and cooperation on multiple projects is beneficial to project performance. The empirical findings for the third hypothesis indicate a positive relationship between physical performance and higher embeddedness of project partners. In contrast, this embeddedness of project

partners is negatively associated with financial performance. For financial performance it is the embeddedness of the Lead Applicant that has a positive influence.

Evidence gathered from the interviews also suggests that previous working experience on projects between partner organisations is beneficial for the project. A substantial number of projects involved partners who had worked together before, either in previous programming periods or through other sources of funding and interviewees valued these relationships. In several cases, partnerships that had been established by domestic structures were consolidated by Cohesion policy project funding, ensuring the sustainability of specific interventions. The interview evidence also showed a negative aspect to the embeddedness of project partners: some private sector project partners felt that there were 'cliques' and that they were being treated as outsiders in comparison to seeing the public sector bodies.

Both the statistical analysis and the interview evidence confirm that an embedded group of organisations that is committed to the success of common projects ensures the physical performance of these projects. The exchange of specialist information that is important to the physical implementation of projects is facilitated in networks of organisations that operate in the same policy field or territory that know a policy sector well and have experience of working together. Mutually reinforcing sets of ties among partners through common projects is likely to discourage opportunism in individual partners as organisations in the subgroup are able to monitor each other's deviant behaviour and impose a credible threat of sanctions.

In relation to financial performance, the contrasting effect between embeddedness of project partners and embeddedness of the Lead Applicant can be explained by the argument that financial performance does not necessarily benefit from a strong and closely-knit

network amongst project partners. Financial performance is in many cases the responsibility of the Lead Applicant, and thus a more embedded network position of Lead Applicant is beneficial to financial performance. In this way, the Lead Applicant is connected to a strong network where other partners have worked more often with the Lead Applicant, and partners know how the Lead Applicant prefers to organise the reimbursement of activities.

Across the three hypotheses, it is interesting to note that different network positions and relationships involve exchanges of different information and resources, producing different impacts on financial and physical performance. In general, financial performance benefits from the strong network position of the Lead Applicant. The data suggests that direct connections (to other projects in which the Lead Applicant is a Lead Applicant), indirect connections and embeddedness are positively related to financial performance. In contrast, for physical performance, the embeddedness of project partners is particularly important.

6.2 Theoretical Implications

Given these empirical results, the theoretical cases for the role of policy networks in policy performance need to be revisited in order to further understand the dynamics of public policy design and implementation and how this can be improved. Chapter 2 reviewed the main theoretical issues concerning the use of network for policy implementation. This review showed that the literature is inconsistent about the benefits of the inclusion of partnerships or collaborative network approaches for the implementation of policy. This thesis extends this literature with five different contributions.

First, this research found that the inclusion of more partners is not automatically beneficial for policy performance. Such an argument is in contrast with recent scholarship that found

evidence that network activity measured by degree centrality is beneficial for the performance of policy (Meier and O'toole 2001; Berardo 2009; Shrestha 2013; Henry, Lubell, and McCoy 2011). On the one hand, the results of the research presented in this thesis indicate that there are benefits to be gained for financial performance from the extent of direct connections of a managing or leading partner (in the case of Cohesion policy in Scotland, the Lead Applicant). However, this relationship between the number of direct connections and project performance is not beneficial or significant for 'ordinary' project partners. Thus, noted from this research, a benefit of more connections is likely only for the experience acquired by being a Lead Applicant on other projects. At least in the context of collaborative implementation of Cohesion policy, simply drawing in more partners is not the best way to improve policy performance. This corresponds with Berardo (2009) who argues that more collaboration is not *per se* a guarantee of better performance, and that under certain circumstances it can actually reduce effectiveness in reaching goals.

Second, this pattern of higher financial performance when a Lead Applicant has more connections to projects in which it is also a Lead Applicant, is consistent with the approach presented by scholars that focus on leadership and the management of networks (Kickert, Klijn, and Koppenjan 1997; Klijn, Steijn, and Edelenbos 2010; Klijn and Koppenjan 2012). Network managers within networks, through the use of rules, organisational knowledge, institutional tactics, and other political strategies, are able to influence 'self-organised' systems. It can also 'manage' the interactions between network partners (Torfing and Sørensen 2007). In this way, the network manager can steer, adapt and influence the network in a particular manner.

From this analysis it is clear that leadership is a crucial aspect to explore in how partnership works. This is similar to Balloch and Taylor (2001) who make the case that power

relationships, institutional cultures and behaviours of key leaders (i.e. their willingness to initiate and progress partnership working) are key in have assessing the potential of partnerships to deliver. The most powerful partners in any partnership have the resources to dominate and control the direction of partnership working through their agenda-setting powers, control of financial and other resources, and regulatory frameworks (Balloch and Taylor 2001). This literature highlights that the benefits of partnership-working for project performance largely depend on the existence of several factors that are associated with the characteristics of a Lead Applicant: prior experience of partnership working; accommodation with national institutional, administrative and cultural traditions; and, availability of resources, including the capacity necessary to deal with complex EU and/or domestic regulatory systems.

Third, in many collaborative situations, having indirect connections that cover a large proportion of the network is beneficial to performance. Studies of industrial organisations (Ahuja 2000; Rosenkopf and Nerkar 2001) and collaborative public programs (Shrestha 2013) have found that indirect connections play an important role in performance. Indirect relationships happen where a first actor is directly connected to a second actor that is in turn directly connected to a third; in this case the first and the third actor are indirectly connected and, even in the absence of any formal agreement, some knowledge exchange occurs between them that is beneficial to performance. The finding in this research is that the extent to which project partners are indirectly connected to the rest of the network (eigenvector centrality) and the extent to which a Lead Applicant has a broker position in the network (Betweenness centrality) are beneficial to financial performance. This is an important extension to the study of collaborative public programs. An actor in a network can learn from the experiences in other parts of the network by being connected to actors that are active in that part. This again emphasises the importance of network leaders (Lead

Applicants) who act as 'knowledge brokers', as vital nodes, indirectly connecting partners involved in different projects. It is however, important to note that this research found that this relationship only holds for financial performance. For physical performance the data did not show a significant relationship.

Fourth, the research contributes to embeddedness-based explanations of network effectiveness in the literature (Provan and Sebastian 1998; Schalk, Torenvlied, and Allen 2010; Shrestha 2013). These argue that it is important to look beyond network structure alone. In considering how networks affect performance, the configuration of that network is not all that matters: the quality of relationships matters too: it is not just important whom one knows but how well one knows them. Overlapping and strong relations between agencies are argued to strengthen resource information exchange and boost the understanding of mutual needs and interests (Schalk, Torenvlied, and Allen 2010). The results of this doctoral research indicate that the embeddedness of project partners, the strength and longevity of ties between partners was beneficial for performance. However, there are two important caveats to note. First, within this general finding there were different results for different measures of embeddedness. The physical performance of projects was positively related to the embededdness of the partners involved. This can be explained by the benefits of sharing knowledge and experience between close partners in a relatively closely defined policy sector. The embededness of Lead Applicants was positively related to financial performance, providing further evidence of their importance in brokering knowledge, particularly on regulatory compliance and technical issues associated with Cohesion policy implementation. The second caveat, highlighted in the literature, emerged from interview research, where the scope for embededness or close-knit networks to become exclusive was noted (in the context of divisions between public and private sector partners).

Fifth, a significant result of the research, with important theoretical implications, is that different types of network structure benefit different aspects of performance. The approach taken in the research, differentiating between different network characteristics and their relationships with different kinds of project performance, makes a contribution to the broader literature on network analysis. There is a need to disaggregate between different features of network structure and different types of performance. This research compared physical and financial performance, and found that different features of network structure benefitted the performance variables. Financial performance benefits from the Lead Applicant having a high score on all three features of network structure, while physical performance benefitted from an embedded network structure amongst its project partners. This suggests that different features of network structure transmit different types of resources (human, financial, technical, regulatory, specialist, sector related etc.) which, in turn, benefits different types of performance. This pattern builds and extends research presented by Sandström and Carlsson (2008), who found that different network structures were related to different functions of the network.

6.3 Policy Recommendations

Debate among academics and practitioners on the implementation of public policy is ongoing and discussions have intensified in the context of constrained policy budgets resulting from the global financial crisis. Within this, debate on the implementation and impact of Cohesion policy is particularly prominent in the context of a shift in the 2014-2020 EU financial perspective towards a stronger 'results orientation'. Efforts continue to assess and demonstrate its impact and find the optimal means of implementation. This is in response to criticisms to Cohesion policy regarding the lack of tangible results, which is

becoming increasingly debated in the current context of crisis and austerity. In addition, while Cohesion policy is credited for generating 'added value' in terms of improving the administrative capacity and triggering modernisations of territorial administration across Member States, it is however unclear how the partnership principle has benefitted overall policy performance as there are widespread implementation deficiencies (Bauer 2002; Polverari and Michie 2009; Mendez 2013; Dąbrowski, Bachtler, and Bafoil 2014). Member States and regions are prominent in this debate. The Scottish Government continues to explore how to effectively design implementation structures in order to ensure the best possible outcomes. In this context, this section offers policy recommendations based on insights from the research.

First, a general note on the application of Social Network Analysis to analysing public policy. This thesis, besides a study on EU Cohesion policy, also tested the SNA approach as a theoretical framework and methodology in analysing the performance of EU cohesion policy. Certain studies have used SNA in analysing how networks affect the performance of public policy implementation, and this thesis has extended this successfully to the area of EU Cohesion policy implementation. The ability to visualise and analyse the connections between actors that are responsible for the design or implementation of public policy is important and offers a fruitful area of research. This approach enables the discovery of structural relations between actors and the influence of these relations on specific outcomes. Therefore, based on this application of this methodology and the results this study achieved, an important outcome of the research is to underline the value of SNA as a tool for public policy analysis and indicate area's where its use could be extended.

Second, the inclusion of partners in the implementation of Cohesion policy can generally be assessed as worthwhile for policy performance and should be supported in Cohesion policy

management and implementation systems. Studies that focus on the partnership principle emphasise the increasing effectiveness of different stages of policy implementation due to the partnership principle, such as programme development and monitoring and appraisal of projects to benefit from EU funding, as well as other positive impacts in terms of improvement of administrative capacity and advancing learning across organisational boundaries and social capital creation, and equally policy and administrative modernisation, through expertise involvement in the policy process (Bauer 2002; Batory and Cartwright 2011; Dąbrowski, Bachtler, and Bafoil 2014). The results of this research confirms this broad finding, although significant caveats must be taken into account (see below).

Third, while supportive of network-based model to implementation, the results of this study highlight the limitations of a broad approach. Unnecessary administrative costs can be encountered while incorporating additional, and ultimately superfluous partners at an early stage of the project, having a negative impact especially on financial performance. The negative influence on performance of having too many partners or irrelevant partners in projects is clear and should be avoided. This is in line with Milio (2014) who argues that the engagement of stakeholders may reduce the efficiency of implementation processes as there might be a lack of inclusiveness in decision- and policy-making styles or through a lack of competences in civil society in interpreting local needs in relation to the Cohesion policy goals. However, this should not be prescriptive. It is important to continue to allow sufficient flexibility for programme authorities to set the appropriate network structures in keeping with their own contexts. Thus network-based mechanisms should have specific and concrete criteria for setting membership (e.g. based on type or size of organisation, sectoral or territorial base etc., public or private status etc.) and for the organisation of tasks among partners (e.g. differentiating between formal, technical or regulatory responsibilities, strategic input etc.).

Fourth, it is important to identify and support leadership within the network for implementation. The results of the research highlight the benefits of having an experienced Lead Applicant. Thus, putting incentives and structures in place to encourage a knowledge-broker role for the Lead Applicant is likely to benefit performance. This suggestion is reflected in the approach the Scottish Government is taking with the Strategic Interventions. Thirteen strategic interventions are implemented, each with a Lead Contact. In this way, existing knowledge of Lead Applicants through successful implementation of previous projects is being built on. This could be further developed through the organisation of various network events to support their role as 'knowledge brokers'. It is important to identify and target successful Lead Applicants in order to utilise and develop their existing knowledge.

Fifth, a focus on the strategic inclusion of organisations that can reach a greater proportion of the network is likely to have a beneficial impact on financial performance. This clearly shows the benefits of having an organisation that can reach out to other sections in the network especially for project performance. Network events, or policy briefings circulating not only between Lead applicants, but also reach partners can make these partner organisations more knowledgeable about best practices in other sections of the network.

Sixth, attention has to be paid to the positive role specialist sub-sectors in specific policy fields can play. The value of organisations that share common projects in a specific sector (e.g. business support, R&D, or social inclusion) is to benefit the physical performance of projects. This finding is also reflected in the current approach of Strategic interventions the Scottish government has adopted for the 2014-2020 programming period. These 'Strategic interventions' consist of 13 large framework 'projects' providing an overarching framework

for operations in the most important sectors. These are led by key stakeholders - i.e. experienced, leading organisations, that have a good track record in a specific thematic field as well as with Cohesion policy. However, there is a danger that once selected, the incentive for these actors to play a leading strategic role will diminish. To ensure that these key stakeholders continue to play an active, a framework that ensures incentives but also maintains the possibility of sanctions should be considered. One possibility would be periodic strategic reporting and associated events where progress against specific strategic objectives could be assessed, discussed and publicised.

The final recommendation relates to the quality of data available to assess performance. The quality and consistency of Cohesion policy data is a perennial concern that has become particularly prominent with increasingly strong demands for the provision of tangible evidence of the policy's impact. This calls for the establishment of data collection and monitoring systems that go beyond the reporting and updating of financial absorption and physical performance and allows assessment of progress against key indicators. This should include progress towards the main strategic objectives, based on the aggregation of related indicators across projects. Moreover, if the value of network-based approaches to implementation is to be assessed, monitoring should include concrete data on the types of organisations involved in projects, their role and the type of interactions between them. For the 2007-2013 period, the partnership dimension in project applications was described in a text box, producing a range of often broad, non-quantifiable inputs. To a certain extent, these recommendations are echoed in current developments in Scotland where a new monitoring system is being developed for 2014-2020. This new IT system developed by the MA, called EUMIS, is being structured to fit with Scotland's new principle of agreed Strategic Interventions. Strategic Interventions will only be put on the EUMIS system once agreement has been reached with the managing authority regarding the range and type of activities to

be included, method of delivery and the agreed monitoring targets and budget. Interestingly, EUMIS distinguishes between Lead partners and ordinary partners - it allows partners to monitor progress based on their roles as either a Lead Partner responsible for an entire Strategic Intervention or as a delivery agent of an individual operation (Scottish Government 2014a).

6.4 Limitations of the study and future research opportunities

It should be noted that while this new way of analysing project performance might inform more general insights into network approaches to public policy implementation, the conclusion in its entirety can only apply to the implementation of Cohesion policy in Scotland. The unique historical and institutional setting of Scotland played a role in the development and emergence of collaborative networks. Second, Cohesion policy is a specific policy that requires the inclusion of different actors in its design, implementation and evaluation. While this also offered an excellent opportunity for research and provided important insights, it is important to note that this formalised approach to the inclusion of actors is not always found in public policy implementation models. Nevertheless, the insights gained can inform research in other fields and add to the literature on Cohesion policy implementation and on policy networks in general.

During the data collection and operationalisation stage, certain problems were encountered. First of all the decision to include a whole network rather than an egocentric network of Lead Applicants meant that all the projects could be included in the analysis, but limited the information on the type of connection. Moreover, as previously noted, information available on the Cohesion policy project database was limited in terms of the type and intensity of resources that were transferred among partners. Second, the quality of the data available had implications for operationalisation of public policy performance as the dependent

variable. The decision to focus on financial and physical performance indicators was based on the official policy requirements and the recent focus on results in Cohesion policy. However, reliance on these indicators created challenges due to varied approaches to the definition of indicators, the setting of targets and the reporting of progress across projects and programmes. Nevertheless, the distinction between financial and physical performance did allow for a comparison between different aspects of project performance.

These limitations can also inform future research. Cohesion policy, as it is implemented in the Member States of the EU has substantial scope for comparative case studies. This can potentially lead to a broader understanding of the effects of different institutional settings on the performance of collaborative approaches to implementation or to the effects of networks in the design and evaluation of policies. The development of more sophisticated methodological approaches in combination with increasing quality of data would also allow more fine-grained exploration of the quality and type of resource exchange that is taking place within and between projects, which actors are connecting with each other, how they are connecting and why.

6.5 Closing remarks

This thesis has explored the influence of network position on the performance of Cohesion policy projects. To answer the overall research question: Is working in partnership, and thus creating a collaborative network for the implementation of policy beneficial for project performance? This research has demonstrated that working in partnership and creating a collaborative network for the implementation of Cohesion policy is beneficial for performance. The results of this research are important because they identify some specific conditions under which organisational actors can improve the likelihood of better

performance; financial as well as physical performance. In doing so, it provides valuable theoretical contributions to the field of policy network analysis and regional development as well as policy recommendations to the implementation of Cohesion policy in Scotland and contributions to the wider debate surrounding Cohesion policy.

7. Annex A - Transformations in Regression model for Direct Connections and financial performance

Quadratic transformation of ProjDC
for Financial Perforamnce in OLS model.

	Model 1
(Intercept)	**52.00** (13.46)***
ProgrammeH&I ESF	-13.26 (7.04).
ProgrammeLUPS ERDF	6.93 (6.59)
ProgrammeLUPS ESF	-10.51 (5.92).
New.Type.OrganisationFurther Education	**-12.03** (5.11)*
New.Type.OrganisationGovernment Department/Agencies	4.45 (6.79)
New.Type.OrganisationHigher Education	**25.31** (7.34)***
New.Type.OrganisationLocal Authority	0.25 (5.13)
New.Type.OrganisationVoluntary Sector	5.99 (4.88)
Type.ExpenditureRevenue	2.73 (5.60)
Approved.Intervention.Rate	**-0.51** (0.25)*
Degree.Centrality	-0.43 (0.29)
Eigenfactor	**291.52** (118.98)*
Cohesive.Subgroup	**-1.31** (0.26)***
LADC	**1.29** (0.33)***
I(ProjDC - mean(ProjDC))	**-0.36** (0.07)***
I(ProjDC^2)	**0.00** (0.00)***
BTC	32.48 (32.44)
Kcore	**0.90** (0.31)**
R^2	0.21
Adj. R^2	0.18
Num. obs.	521

*** p < 0.001, ** p < 0.01, * p < 0.05, . p < 0.1

8. Annex B - Regression models with different operationalisations for Physical performance

Different operations of BINOP

	Model (70)	**60**	**50**	**80**	**90**
(Intercept)	0.43 (0.82)	1.07 (0.97)	1.07 (0.97)	1.05 (0.80)	0.65 (0.78)
ProgrammeH&I ESF	-0.38 (0.49)	0.85 (0.56)	0.85 (0.56)	-0.25 (0.48)	**-1.05** (0.47)*
ProgrammeLUPS ERDF	-0.66 (0.46)	-0.14 (0.50)	-0.14 (0.50)	**-0.91** (0.45)*	-0.83 (0.43)$^{.}$
ProgrammeLUPS ESF	0.55 (0.41)	**1.67** (0.47)***	**1.67** (0.47)***	0.41 (0.40)	-0.11 (0.39)
New.Type.OrganisationFurther Education	-0.09 (0.40)	-0.95 (0.53)$^{.}$	-0.95 (0.53)$^{.}$	-0.46 (0.36)	-0.43 (0.34)
New.Type.OrganisationGovernment Department/Agencies	-0.04 (0.50)	-0.41 (0.65)	-0.41 (0.65)	-0.53 (0.47)	-0.49 (0.45)
New.Type.OrganisationHigher Education	0.29 (0.55)	-0.05 (0.69)	-0.05 (0.69)	0.41 (0.52)	0.40 (0.49)
New.Type.OrganisationLocal Authority	-0.20 (0.37)	-0.73 (0.50)	-0.73 (0.50)	-0.53 (0.35)	-0.44 (0.34)
New.Type.OrganisationVoluntary Sector	0.36 (0.37)	0.05 (0.52)	0.05 (0.52)	0.03 (0.35)	-0.07 (0.33)
Type.ExpenditureRevenue	**0.96** (0.41)*	**1.23** (0.47)**	**1.23** (0.47)**	**0.84** (0.39)*	0.27 (0.37)
Approved.Intervention.Rate	0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.02)
Degree.Centrality	-0.02 (0.02)	-0.01 (0.03)	-0.01 (0.03)	-0.02 (0.02)	-0.03 (0.02)
Eigenfactor	-14.13 (8.56)$^{.}$	0.31 (10.56)	0.31 (10.56)	-6.03 (8.22)	1.60 (7.99)
Cohesive.Subgroup	**0.07** (0.02)**	0.04 (0.03)	0.04 (0.03)	**0.04** (0.02)*	0.02 (0.02)
LADC	0.03 (0.02)	0.04 (0.03)	0.04 (0.03)	0.01 (0.02)	0.00 (0.02)
ProjDC	0.00 (0.00)	**-0.01** (0.00)**	**-0.01** (0.00)**	0.00 (0.00)$^{.}$	0.00 (0.00)
BTC	-10.48 (18.06)	-3.56 (5.20)	-3.56 (5.20)	-4.07 (6.75)	-3.40 (5.26)
Kcore	-0.01 (0.02)	0.03 (0.03)	0.03 (0.03)	0.01 (0.02)	0.01 (0.02)
AIC	581.26	429.76	429.76	638.98	683.13
BIC	656.83	505.34	505.34	714.55	758.71
Log Likelihood	-272.63	-196.88	-196.88	-301.49	-323.57
Deviance	545.26	393.76	393.76	602.98	647.13
Num. obs.	492	492	492	492	492

*** p < 0.001, ** p < 0.01, * p < 0.05, $^{.}$ p < 0.1

9. Annex C - Financial model with other Betweenness centrality and EC.

Inclusion of EVC and Betweenness centrality of project

	Model 1
(Intercept)	**92.07** (13.92)***
ProgrammeH&I ESF	-13.70 (8.46)
ProgrammeLUPS ERDF	12.01 (8.18)
ProgrammeLUPS ESF	-11.84 (7.14).
New.Type.OrganisationFurther Education	**-16.85** (6.23)**
New.Type.OrganisationGovernment Department/Agencies	2.81 (8.24)
New.Type.OrganisationHigher Education	**27.29** (8.75)**
New.Type.OrganisationLocal Authority	-8.24 (6.21)
New.Type.OrganisationVoluntary Sector	6.83 (5.90)
Type.ExpenditureRevenue	2.58 (6.77)
Approved.Intervention.Rate	**-0.61** (0.30)*
Degree.Centrality	-0.82 (0.69)
Eigenfactor	331.31 (184.45).
Cohesive.Subgroup	**-1.92** (0.32)***
Betweenness.Centrality	0.77 (1.36)
LADC	**1.35** (0.40)***
EVC	0.18 (0.12)
ProjDC	**-0.43** (0.07)***
BTC	**1241.87** (393.40)**
Kcore	**1.06** (0.36)**
Log(scale)	**3.62** (0.04)***
AIC	4436.53
BIC	4525.90
Log Likelihood	-2197.26
Deviance	636.57
Total	521
Left-censored	86
Uncensored	414
Right-censored	21
Wald Test	140.12

*** p < 0.001, ** p < 0.01, * p < 0.05, . p < 0.1

10. Annex E - List of interviewees

Name	Organisation	Implementation structure	Area
Liz Gribben	SE	SDB	L&U
John Ferguson + 6 others	SCVO	Challenge fund	Scotland
Fiona Wilson	STUC	Challenge fund	Scotland
Yvonne Weir & Creig	North Lanarkshire Council	CPP	L&U
Liz Baird	Inverclyde Council	CPP	L&U
Stuart Bews	Aberdeenshire Council	CPP	L&U
Sharon Hodgson	East Ayrshire Council	CPP	L&U
Callum Farquhar	Fife Council	CPP	L&U
Michelle Gautier	Dundee Council	CPP	L&U
Linda Stewart	University of the Highlands and Islands	SDB	H&I
Jim Livingston / Ian Fraser	Clackmannanshire Council	CPP	L&U
David Hamilton/Rob Clarke	Highlands and Islands Enterprise	SDB	H&I
Kenny Lean	South Lanarkshire Council	CPP	L&U
Lesley Gallagher	Striling Council	CPP	L&U
David Greaves/ Cara Gill	West Lothian Council	CPP	L&U
Gina Gallacher	West Dunbartonshire Council	CPP	L&U
Marin Smith /Joelle Russel	Scottish Further and Higher Education Council	Challenge Fund	Scotland
Anne Campbell	Edinburgh Council	CPP	L&U
Sharon Thomson	Glasgow Council	CPP	L&U
Christine Mulligan/ Theresa Haran	Skills Development Scotland	Challenge Fund	Scotland
Jiim Millard	SG	-	Scotland
Susan Tamburrini	SG	-	Scotland
Lorna Gregson	SG	-	Scotland
Kat Feldinger	SG	-	Scotland
Steven Watson	City of Glasgow Colleges	SDB partner	L&U
Mary-Theresa Smith	Jobs & Business Glasgow	SDB partner	L&U
Stuart Meickle	Highland Birchwoods	Challenge Fund	H&I
Anne Murray	Comhairle nan Eilean Siar	Challenge Fund	H&I
Bill Ross	Orkney College	Challenge Fund	H&I
Keith Winton	Genomia Management Ltd.	Challenge Fund	L&U
Richard Mosses	SUPA, Strathclyde University	Challenge Fund	L&U
Jamie Henderson	The Bioportal / Dundee university	Challenge Fund	L&U
Karen Fraser	Marine Energy R&D Fund	SDB	H&I
Brian Weaver	HISEZ	SDB partner	H&I
Polly Chapman	HISEZ	SDB partner	H&I

E1 - The Email that was sent to the interviewees:

Dear Mr/ Ms,

I am contacting you to ask if you would be willing to be interviewed for a PhD study of partnership-working in EU cohesion policy delivery arrangements in Scotland. I will be examining how the different delivery mechanisms in Scotland organise their delivery partners to ensure an effective delivery system. I am particularly interested in the project level, and the experience of ERDF/ESF project implementation. The study is funded by a partnership between the Scottish Government and the University of Strathclyde. The outcomes of the study will be the main empirical contribution to my PhD study, but will also feed into the further development of EU cohesion policy in Scotland through the links with the Scottish Government.

I am contacting you because you were part of a project implementing the Structural Funds in Scotland and I hope that you would be willing to spend a short amount of time on an interview, whenever would be convenient to you.

I believe it is the easiest if I get in touch by phone in the next few days to follow up, see if you are interested, and arrange a date to speak. Or you could reply to this email address.

If you have any questions, please feel free to contact me by email or phone.

Thank you very much in advance for your time.

Best regards,

Dorine Boumans

Dorine Boumans
PhD Student
Scottish Government Studentship
European Policies Research Centre
School of Government and Public Policy

University of Strathclyde
40 George Street
Glasgow G1 1QE
Tel: +44 141 548 3910
Fax: +44 141 548 4898

dorine.boumans@strath.ac.uk

To find out more about EPRC and see "what's new" at the Centre, consult our website:
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E2 - Questionnaire

The main focus of this questionnaire is to find out the characteristics of project implementation. Broadly speaking the main questions that will be addressed are: what were the interactions with actors involved in the project, and what were the interactions with the Scottish Government or the Managing authority, or any other body that fulfilled a coordination role?
The questionnaire is organised in three different parts. The first part consists of some basic organisational features, as well as some information about the performance of the project.
The second part is dived into three stages that resemble the phases of the project. First, the initiation and application stage, second the implementation and monitoring stage and third the evaluation stage. Within these three stages I'll ask you about the 5 different features that according to the literature characterise project implementation. I want to emphasise that these are variables from the literature, so if you feel that they do not make perfectly sense, please let me know. Or if you feel that I am missing something, also please let me know.

The 5 features I want to ask you about are:

Autonomy:
Autonomy relates to the question if you felt you had enough autonomy to decide upon the focus of the project, if there were issues that came up during the implementation, if you felt you had enough freedom to make decision about these. Of course the project has to fulfil certain eligibility regulations, however, did you feel hindered by these? Would something turned out differently if you had more autonomy? E.g. the ability to make decisions?

Actors:
This broadly relates to what kind of actors are included into the project in different stages and what your opinion is about the inclusion of these actors.

Arrangements:
What were the arrangements in place to organise the project? Was there a clear structure and communication framework?

Formality:
It has been argued that the difference between a partnership and a network is the level of formality involved. Within a partnership it would be for example harder to get out of the partnership, while in a network the relations are more flexible.

Resources:
Are the resources joined up or are they parallel? For example, when applying for a grant, you can divide the different sections for the proposal amongst the different people that apply of it. Or you can have regular meetings to discuss the progress as well as the direction. Are the resources coordinated or are they parallel?

Next to these features about the project, I want to ask you about your networking activities, not necessarily related to EU cohesion policy. But mainly with which organisations you have contact relating to the project as well as what the purpose was of these relationships is/was.

ORGANISATIONAL INFORMATION

Interviewee:
Organisation:
Operational Programme:
EUROSYS reference:
Priority:
Theme:

1. CONTEXT:
1.1 Can you confirm for me which of the Delivery Mechanisms your organisation relates to:

- CPP
- SDB
- National Delivery Body
- Challenge Fund

1.2 Can you clarify your role in the organisation and the project?

2. GENERAL EXPERIENCE
In general what is your main experience with this project? Compared to projects without EU funding? But other funding.

3. THE PROJECT:
What is the main goal of this project?
The targeted beneficiaries:
Its financial scale:
Is this a new project or the continuation of a past project?
If a continuation, in what ways, if any, is the project different from its predecessor, and why were these changes made?

3.1 Performance
- Physical progress: Are the results and indicators met?
- Financial progress: What is the project's spending profile? In other words, are there any difficulties in spending the allocated money?

Added value:
What is the added value of getting the Structural Funds support for this project?

4. The different Variables in the project.

As there are different stages in the project, from initiating and writing the application to implementation and lastly evaluation I want to see how the characteristics are present, and if they change during the project.
In general, how would you asses the partnership working between the actors in the different stages?

Initiation and application: Implementation and monitoring: Evaluation:

4.1 Autonomy:
Did you feel you had enough autonomy to determine the focus of the project?
Where did the idea of this project come from?
To what degree did you take into consideration the strategic documents of the Scottish government, and to what degree was there consultation with beneficiaries?
In what ways did your project include these perhaps different viewpoints?
Was there interaction with the managing authority? if so; sufficient, not enough, problematic?
Did the managing authority propose any changes?
If so, did you feel that the changes proposed were still reflecting the original goal of the project?
Were there any developments arising in this phase that needed decisions from the different partners? – How were these decisions made?
Was the interaction with the managing authority or the lead applicant; good, sufficient, not enough, problematic? And why?
What was the role of the Scottish government, Managing authority, and the other partners

Initiation and application: Implementation and monitoring: Evaluation:

- If you had to make a judgement, where on the scale of one to five would this project fit?

Centrally driven	1	2	3	4	5	Locally driven

4.2 Actors:
Which actors were involved, and were there any changes of their level of involvement during the project?

Initiation and application: Implementation and monitoring: Evaluation:

In your opinion, do these actors together represent all the different parties that should be involved? Or are some actors missing? Or are there too many actors around the table?
How did you come into contact with especially these organisations?
Do you have a working history with these partners?
From the organisations involved how many had experience with ERDF/ESF funding?
In your opinion, did these actors together in the project present

Narrow Involvement	1	2	3	4	5	Broad involvement

4.3 Arrangement:
In the first phase of the project, how were the arrangements? How did you come together? Did someone take an active management lead?
Who contacted the different organisations, was there open consultation, and was there input from beneficiaries?
Was there any involvement of the Scottish Government?
if so, what was their role? And how was communication organised?
How would you describe the involvement of the Lead Partner?
If a project changed between different delivery arrangements, went from Challenge fund to a SDB, CPP or NSB: Did anything change regarding the arrangements?
Was this process clearly managed by someone?
What were the specific roles for the different organisations? Was everything specific set out?

How would you describe the communication between the different actors? - was it easy to pick up the phone, or would communication only happen in formal meetings?
If there were any changes to the project proposed, how would you describe the interaction with other actors/partners?
If a project changed between different delivery arrangements, went from Challenge fund to a SDB, CPP or NSB: Did anything change regarding the arrangements?
In your opinion are the right arrangements in place? Or would you like to see something changed?
In the application it is mentioned that progress will be monitored on a monthly basis with monthly reports both in terms of project deliverables and project spend.

Initiation and application: Implementation and monitoring: Evaluation:

How would you characterise the arrangements within the project;

Highly institutionalised	1	2	3	4	5	Loosely organised

4.4 Formality:
Is the partnership with the other actors in some way formalised? A partnership agreement of some kind? Was this active in every phase of the project?
What does the collaboration agreement entail?
Are there any consequences of not following this agreement, financial, reputation?

Initiation and application: Implementation and monitoring: Evaluation:

If you had to classify the level of formality:

Closely managed/regulated	1	2	3	4	5	Open/Flexible

Were you satisfied with the level of formality?

4.5 Resources:
When initiating and developing the project, what kind of resources is your organisation contributing to the project? -money, information, ideas, facilities, management,
Do the organisations involved contribute different resources to the project, what kind of resources?
How is the delivery of the resources organised?

Initiation and application: Implementation and monitoring: Evaluation:

Would you characterise the sharing of resources

Joined-up	1	2	3	4	5	Parallel

7. ACTIONS SUPPORTING EFFECTIVE PARTNERSHIP FROM THE SCOTTISH GOVERNMENT SIDE
Do you feel that there have been enough arrangements put in place to support the partnership?
Are any actions been under taken to develop the capacity and skills of partner organisations?

How were these action devised and targeted? (e.g. based on past experience, needs assessments, partners requests?)
What has been the effect of these actions?
Any lessons learnt for the future?

Information asymmetries can mean that partners are de facto marginalised or that different partners have different potential to influence decisions. What is being done in this respect? Are specific information activities being carried out to inform partners or specific partners on the programme's activities? What are the results of these initiatives?

- Do you have experience with ERDF over different programming periods? Did you experience any significant changes over time?

Are there any changes with the transfer from HIPP/ESEP to the Scottish Government?
Are you informed about the changes that are going to take place for the following programming period? – What is your opinion?

8. RELATIONS WITH OTHER ACTORS
In the different stages of the project, can you list the organisation with which organisation you had the most contact and what the type of relation, the frequency, the aim and the quality of these relationships were?
In terms of frequency, could you specify daily, weekly, monthly, yearly or only once?
And what do you know about the interactions of the other actors?

The initiating and developing stage

Organisation	Type of relation, frequency, and aim
1…	
2…	
3…	

In the implementation stage

Organisation	Type of relation, frequency, and aim
1…	
2…	
3…	
4…	

In the evaluation stage

Organisation	Type of relation, frequency, and aim
1…	
2…	
3…	

Do you have anything to add, questions remarks, suggestions about other questions I should ask?
Thank you for your time!
- Further questions?

E3 - Questionnaire Alec Fraser

Delivery Partner Questionnaire
Organisation:
Interviewee:
Operational Programme:
EUROSYS reference:

1. CONTEXT:
1.1 Can you confirm for me which of the Strategic Delivery Mechanisms your project relates to:
CPP
SDB
National Delivery Body
Challenge Fund
1.2 Can you clarify for me your role?

2. THE PROJECT:
Can you briefly outline for me:
The nature of your project
The targeted beneficiaries
Its financial scale
Is this a new project or the continuation of a past project?
If a continuation, in what ways, if any, is the project different from its predecessor, and why were these changes made?

3. INITIATING AND DEVELOPING THE PROJECT:
3.1 Actors:
Who were the actors involved in the initiation and project design?
How did you come together?
Do you work together with them in other projects?
What were the motivations to join-up with these specific partners?

3.2 The project:
How was the focus determined?
In your opinion, was there enough autonomy and flexibility to develop the project that it would suit your organisations needs or priorities?
Among the partners was everyone equally included in the initiating and developing stage of the project?
Did this in your opinion have an effect on the partnership?
Was there duplication of effort?

3. APPLICATION
Who is the main applicant for this project?
Who are the actors involved? And what were the roles?
Did you, or any of the other partners, have any experience with ERDF or ESF applications?
Are all partners involved in the application process?
In your opinion, when involved in the application was there interaction with the Managing Authority?
Any shortcomings or lessons learned in relation to the application?
Did what was agreed in the application reflect the initial proposal of the project?

4. IMPLEMENTATION AND MONITORING
Who are the actors involved?
How are the tasks divided within the implementation phase?
In your opinion, did all the actors within the partnership contributed enough to the project?
Is it clear what every actor contributed to the project? Did the actors complement each other?

In the implementation of the project, is there enough scope to adopt the project to emerging circumstances?
Are there any shortcomings or lessons learned from within this phase?

5. EVALUATION
Are evaluation outcomes discussed with partners? In which forum?
What are your experiences of ealuation?

6. BARRIERS TO PARTNERS INCLUSION
What are the main barriers for partners' inclusion in the various phases of the programme?
Are the right kinds of partners included in the partnership?
Did you experience any barriers in any phase of the project? Was it easy enough to put forward an application for EU funds?
Is the involvement of partners in the different programme phases straightforward? Are there particular problems met in specific phases of the programme cycle?

7. ACTIONS SUPPORTING EFFECTIVE PARTNERSHIP FROM THE SCOTTISH GOVERNMENT SIDE
Do you feel that there have been enough arrangements put in place to support the partnership?
Are any actions been under taken to develop the capacity and skills of partner organisations?
How were these action devised and targeted? (e.g. based on past experience, needs assessments, partners requests?)
What has been the effect of these actions?
Any lessons learnt for the future?
Information asymmetries can mean that partners are de facto marginalised or that different partners have different potential to influence decisions. What is being done in this respect? Are specific information activities being carried out to inform partners or specific partners on the programme's activities? What are the results of these initiatives?

8. RELATIONS WITH OTHER ACTORS
In the initiating and developing stage can you list the most important (up to ten) organisations (actors) with whom you had contact with?
In the application stage
In the implementation stage
In the evaluation stage

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