DETERMINANTS OF NETWORK OUTCOMES: THE IMPACT OF MANAGERIAL STRATEGIES

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ABSTRACT

This article examines management’s impact on network effectiveness answering the following research questions: a) “what are the effects of network management strategies on perceived outcomes?” and b) “does active network management improve the level of trust in networks?”. We do so by incorporating data from a large number of cases on action networks (Agranoff, 2008) and their management for urban revitalization of economically depressed neighborhoods in Catalonia (Spain). In order to simultaneously assess the measurement model and determine the effects of strategy and trust on perceived outcomes as a function of project complexity and intensity, we employed the Partial Least Square (PLS) approach to structural equation modeling (SEM). The findings from our structural model demonstrate a strong relationship between network management strategy and trust, both impacting on the perceived outcomes. We also found that management intensity has a positive impact on strategy as well as on trust in the project. Moreover, our findings show that complexity has a negative impact on trust, but does not appear to have a significant effect on strategy.
1. INTRODUCTION

The literature on complex network management is extensive; however, it has only examined management’s impact on network effectiveness on very few occasions (see, for example, Meier and O’Toole, 2001; and Klijn, Steijn and Edelenbos, 2010). According to these authors, network management is highly relevant in complex networks addressing wicked issues in which public, private and non-for profit sectors are involved. This article builds on these previous works and aims to answer two specific questions: a) “what are the effects of network management strategies on perceived outcomes?” and b) “does active network management improve the level of trust in networks?”

In order to answer these questions, we carry out a systematic empirical examination of one important policy sector: the urban revitalization of economically depressed areas. We do so by incorporating data from a large number of cases on action networks (Agranoff, 2008) in Catalonia, Spain. These projects address wicked issues, many actors are involved with relatively dense interaction, and they are sustained over a long period of time. Our findings show that network management strategies have a strong effect on perceived outcomes and that management strategies enhance the level of trust. Our results also demonstrate that trust matters.

The next section outlines the state of current research on networks and public management and develops some potential empirical expectations derived from earlier scholarship. We then describe our research design and relevant data. The fourth section details the results of our empirical study, and we discuss the data gathered. The final section outlines the conclusions and implications of our study on network management.
2. THEORETICAL DEVELOPMENT

The majority of network literature generally explores network structures and their importance for public service delivery, neglecting the role of network management (Walker, O’Toole and Meier, 2007). This gap serves as our point of departure, and, “if networking is a measurable and identifiable management practice, and if it appears in roughly similar forms in different countries, it should be possible to estimate its impact on performance in a wide range of settings” (O’Toole, Walker, Meier and Boyne, 2008: 416).

Our approach here is to improve measurement in network management research (including policy networks, collaborative networks, governance networks and whole networks) by using tried and tested measures to replicate an extensive body of work developed by Klijn, Steijn and Edelenbos and to extend it, both to a different context and also among a wider range of actors. The approach adopted here is quantitative, based on large-scale web survey data. We use networks and their management as the main units of analysis. Almost all prior research relies on single informants (usually chief executive officers – see Walker, O’Toole and Meier, 2007). To address this limitation, we thus collect data from multiple informants.

The advantages of network coordination are considerable (Huxham and Vangen, 2005; Provan and Kenis, 2007): enhanced learning, more efficient use of resources, an increased capacity to plan for and address complex problems, greater competitiveness, and better services for clients and customers. “As it is now a core task of governance, network management must be placed up front as an essential arena of examination in the fields of public management and administration” (Agranoff and McGuire, 2001: 323). Embracing these authors’ views, we argue that management’s role is critical for effective network outcomes. Specifically, we examine
management efforts to work in an interdependent setting to build support for programs, attract partners in co-operative endeavors and overcome the challenges presented by other actors.

To analyze the impact of network management on network outcomes we adopt Provan and Kennis’ (2008: 231) definition of networks as “groups of three or more legally autonomous organizations that work together to achieve not only their own goals but also a collective goal”, focusing on those networks that develop policies and convert them into action. These networks have also been defined as: “goal-directed networks” (Agranoff and McGuire, 2003; Provan and Kenis, 2008) –as formal mechanisms to achieve multi-organizational outcomes especially in the public and nonprofit sectors where collective action is often required for problem solving. They are set up with a specific purpose, either by those who participate in the network or through mandate, and evolve largely through conscious efforts to enhance coordination.

2.1. Conceptual model and hypotheses

“The basic argument is usually that without adequate network management strategies, it is very difficult, or even impossible, to achieve interesting outcomes in these complex networks” (Klijn, Steijn and Edelenbos, 2010). The assumption is that a satisfactory outcome is often impossible without network management. However, in network management literature there are still more theoretical questions than actual empirical research (Herranz, 2007). Therefore, studies are needed to be able to measure network outcomes and performance (Agranoff and McGuire, 2001).

Moreover, in accordance with network literature, we also examine trust in the network. Management literature has widely recognized the existing link between trust and network outcomes (see, among others, Lane and Bachmann, 1998; Huxham and Vangen, 2005;
Bachmann and Zaheer, 2006). However, this stream of research has just started to be applied to public administration. For instance, Klijn, Steijn and Edelenbos (2010) provide an empirical study on complex networks and relate the levels of trust between network partners to the outcomes achieved by those networks. According to these authors, there is a positive relationship between trust among partners and network outcomes.

**Network management strategies**

Networking behavior is important because managers and management can be expected to exert influence especially within the network context (Walker, O’Toole and Meier, 2007) and because the performance-related impacts of such managerial efforts have been shown to be significant (see, for example, O’Toole and Meier, 1999; Meier and O’Toole, 2007; Klijn, Steijn and Edelenbos, 2010). O’Toole and Meier (1999) and Herranz (2001) argue that management is more crucial in networks than in hierarchies because of its influence on organizational performance in terms of: (1) its creating an organizational structure that contributes to system stability; (2) buffering an organization from environmental influences; and (3) exploiting opportunities present in the environment. Nevertheless, Ansell and Gash (2007) find in their meta-analytical study of 137 international networks that very few extant studies actually evaluate governance outcomes. Accordingly, managerial strategy patterns deserve more systematic attention.

We define network management strategies as the deliberate attempt to govern processes within networks (Klijn, Edelenbos and Steijn, 2010) and assume that, once the network is in place, managers must still manage and lead the network because success is by no means assured (Provan and Kenis, 2008). Managers can coordinate networks in a variety of ways. Various management strategies have been identified in the literature such as buffering, exploiting the
environment, maintaining a stable system, and establishing structural forms (O’Toole and Meier, 1999); or facilitating, activating network members, arranging meetings, and arbitrating/brokering disputes (Rethemeyer, 2005). Rethemeyer and Hatmaker (2007), from a literature review, add a fourth category of political network management functions: interest intermediation, reaching goal consensus, information processing and knowledge management, and “governance”, the latter broadly defined as managing political contention over goals and processes throughout the project’s lifecycle.

The most generally accepted approach is Agranoff and McGuire’s proposition (2001) to construct a POSDCORB process for network management. According to these authors, there are apparent common network management behaviors that entail the following general tasks: activating, framing, mobilizing and synthesizing. This approach is also adopted by Herranz (2007), Rethemeyer and Hatmaker (2007), and Klijn et al. (2010). Activation/deactivation focuses on engaging the right participants in a network, identifying network participants and tapping their resources. Framing includes shaping network interactions by establishing and influencing the network’s operating rules, norms, and perceptions. Framing speaks to the cognitive and motivational components of network management –providing a compelling reason for independent network members to participate and a set of principles around which to organize the participants’ efforts. It involves giving shape to purposes and it has great influence on the alignment of various forms of engagement and introduces new ideas to the network in order to raise commitment to the joint undertaking. Mobilizing refers to the need for consistent participation and resource sharing throughout the network’s lifecycle. It emphasizes human resource management in terms of motivating, inspiring, and inducing commitment among network participants and stakeholders. Finally, synthesizing refers to creating and enhancing the
conditions for favorable, productive interaction among network participants. It focuses on
developing the proper set of relations between the network participants by facilitating and
furthering their interaction, reducing complexity and uncertainty, changing incentives, and
engendering effective communications among participants to lower the cost of their interaction.

Beyond identifying these tasks, we want to discover how the set of managerial tasks network
managers carry out have an impact on their quest for outcomes. As mentioned by Agranoff and
McGuire (2001), management tasks are often used in combination. When network management
is able to navigate all of these successfully, the precondition for successful collaboration can be
achieved. Accordingly, we hypothesize that:

H1: Network management has a positive influence on complex network outcomes.

Trust

Trust has frequently been discussed in general network literature as critical for network
performance and sustainability, although until very recently (Provan and Kenis, 2008; Klijn,
Steijn and Edelenbos, 2010), it has not focused on public network outcomes. Milward and
Provan (2003) in their model of network effectiveness found that the most critical variable which
moderates the impact of resources is network stability. The latter requires developing sufficient
levels of trust, among other factors.

Two different definitions of trust are frequently used in the literature (Ring and van de
Ven, 1992): (1) confidence or predictability in one’s expectations, and (2) confidence in the
other’s goodwill. Huang and Provan’s (2007) definition is an example of the first: trustworthiness is the extent to which an organization can be depended on to honor its promises in an exchange relationship. Provan and Kenis (2008: 237) provide an example of the second
definition: “the willingness to accept vulnerability based on positive expectations about another’s intentions or behaviors”.

The literature suggests the importance of trust to broadly address others’ concerns beyond the boundaries of specific, measurable transactions. Agranoff and McGuire (2001, 2003) describe these expectations as having four trust dimensions: participant motives, that is, not exploiting or betraying purposes; competency, possessing the knowledge and skills to do what is expected; dependability, holding the necessary resources; and collegiality, showing respect and fairness.

Trust in a network means that one is willing to assume an open and vulnerable position, implying three characteristics which are generally agreed on: vulnerability, risk and expectations. Unlike that in most of the literature, the focus here is not on trust in dyadic relations and on general reputational effects based on the trust of specific network members, but on the network itself. To increase outcomes, networks have to enhance trust. Accordingly we hypothesize:

H2: Higher levels of trust in governance networks will lead to outcomes that actors in these networks perceive to be of higher quality.

Moreover, Ring and van de Ven (1992) imply that the emergence of trust is a dynamic process, one which can be managed. This is so because the more frequently an organization interacts with different types of organizations, the greater the likelihood that it will increase its stock of information regarding the predictability or reliability of the different parties. Furthering this idea, Rethemeyer and Hatmaker (2007) introduce the “social structural resources” label. Encouraging these ties raises the probability that an attempt to communicate or exchange information will generate the desired results because they help to foster knowledge of one another, trust, and flows of mutual obligations. Once established, these ties become resources.
In this same vein, Agranoff and McGuire (2001) argue that trust-based governance structures have rich, consultative institutional structures and suggest that, operationally, there are forces that build trust within networks. Herranz (2007) emphasizes that the network management function as a network integrator builds trusting relationships. Provan and Kenis (2008) argue that the key role of network facilitators is not only to maintain trust but to also build trust among participants. Therefore, we hypothesize that management increases trust:

H3: Network management has a positive influence on the development of trust. The level of trust in governance networks will be higher with more active network management strategies.

Intensity

Another variable that we consider in our analysis is the management intensity of the networks. Management intensity, understood as how actively the network is managed, has been found to have a positive effect on network outcomes (Klijn, Steijn and Edelenbos, 2010). We use the label intensity as a combination of concepts found in the literature such as “role holding” and “power to”.

Arguably, alliances are held together by strategic, operational implementation and assessment abilities, a form of steering that uses a catalytic leader or project manager to build a type of interorganizational collaborative capacity (Agranoff and McGuire, 2001). Agreeing with Agranoff (2007), Rethemeyer and Hatmaker (2007), and Provan and Kenis (2008), and contrary to the prevailing wisdom that networks are flat structures, we suggest that informal hierarchical aspects are an emergent property of public management networks. Rethemeyer and Hatmaker (2007) term this pattern of relations as a role structure. The corresponding “role assignments” can emerge via two processes: through coalition processes or as a form of status granting. An
important consequence for our research is that roles are usually related to formal or informal grants of authority. Independently of its cause, we hypothesize that when the network management role is assigned, more managerial action can be developed inside the network, thereby acknowledging that multiple actors can engage in management efforts (O’Toole and Meier, 1999; Rethemeyer and Hatmaker, 2007).

Furthermore, according to Agranoff and McGuire (2001) and Rethemeyer and Hatmaker (2007), the ability to manage networks and mobilize mass constituencies is related to the internal support and cooperation of the manager’s primary organization. Contrarily, weak commitment by public agencies to collaborate, particularly at the headquarters level, is often seen as a particular problem (Ansell and Gash, 2007). Therefore, we hypothesize that, if the organizations’ senior management is involved, more active network management strategies will be seen because managers will have the “power to” (Agranoff and McGuire, 2001), that is, they will have the power to ensure enough cooperation among disparate community elements to get things done and the power to mobilize slack resources, developing both strategies and trust. This is different than mobilizing against the powerful. Five sources of power are critical in this respect: the power to mobilize, the power to organize, the power to strategize, the power to control information and the power to exercise influence or authorize actions. These characterize real situations better than the concept “power over” found in many highly complex conditions.

Some would term this combination facilitative leadership, encouraging the initial conditions and empowerment (Ansell and Gash, 2007) which serve as critical ingredients to bring the different parties to the table and to steer the network. Ansell and Gash assume that, even when collaborative governance is mandated, achieving “buy-in” is still an essential aspect of the collaborative process.
Accordingly, we hypothesize that management intensity (active project management, appointed and visible network managers, and senior management involvement) matters with regard to trust and strategy:

H4: Management intensity has a positive influence on developing trust in the project, and
H7: Management intensity has a positive impact on active network management. Intensity promotes system efficiency for managers to exploit opportunities when managing the network.

**Complexity**

The final explanatory variable in our study refers to the *complexity of the projects* managed through networks. The governing tradition reveals the complexity of public decision-making (Klijn, 2008) and highlights the need for intensive managerial efforts to achieve sensible and acceptable outcomes for stakeholders. Furthermore, networks experience more complex environments and more internal complexity than hierarchies of similar size (O’Toole and Meier, 1999); therefore, more variables may influence what occurs in a network.

There are several reasons that help explain why goal-oriented networks are complex settings: multiple parties operate with multiple interests –jurisdictional, organizational, sectorial- and are involved in policy design and implementation. These networks are characterized by distributed authority, interdependent relations, blurred private and public boundaries, and competing and coexisting value systems (Herranz, 2007; Klijn, 2008), all the while trying to address *wicked* issues. And while these constellations of actors may be potentially important as sources of funding, legitimacy, ideas, and guidance and they may have the potential to solve the integration and coordination problem, they are not without their own problems (Huang and Provan, 2007) and turbulence (Meier and O’Toole, 2001).
Accordingly, we want to test how complexity contributes to the management challenges that arise from the uncertainties and very complexities of the structurally ambiguous setting itself (O’Toole and Meier, 1999). From the literature, the general proposition is that more management will be seen in more complex projects, and less trust will be generated in the project due to the different perspectives regarding the problems addressed and their solutions. Accordingly, we hypothesize that:

**H5:** The greater the complexity in a network, the more complex its strategy, *ceteris paribus*.

**H6:** Complexity has a negative influence on building trust. Network complexity may negatively affect trust.

The path model based on the seven hypotheses is shown in Figure 1.

**Figure 1**
**Hypothetical path model**
3. RESEARCH DESIGN

3.1. Data collection

In order to analyze these theoretical questions, we conducted a web survey during the autumn of 2010. This survey targeted individual stakeholders involved in 118 urban renewal public policy projects (approved between 2004 and 2009) in Catalonia (Spain). The aim of the underlying policy was to integrate intervention projects to transform urban areas requiring special attention. These projects stemmed from a Catalan Regional Government program to improve the most disadvantaged neighborhoods, representing an investment of more than 990 million euros. This program was designed to support efforts and actions taken by other actors though mandating they operate via networked institutional arrangements. The empirical context we examine consists of a set of highly similar projects in terms of their basic structural features: they are different applications of the same urban renewal program in different municipal areas and neighborhoods in Catalonia.

The institutional architecture behind the program’s implementation was based on a dense network of agents, but there were two clear leaders: the Catalan Government’s Ministry of Territorial Policy and Public Works, on the one hand, and the local town halls, on the other. Another important figure was the Evaluation and Monitoring Committee, with a separate committee created to monitor each of the specific Neighborhood Plans. These committees were made up of representatives from the different affected Catalan Government ministries, local government representatives and civil representatives from the neighborhood in question. Their functions were to establish coordination mechanisms, monitor the actions taken and promote public participation (Parés, Martí and Blanco, 2009).
Each year (between 2004-2009), the regional Government selected the projects which would receive subsidies through a competitive process based on indicators (combining high scores regarding a neighborhood’s needs and project potentialities). The regional Government financed 50 percent of total project costs (75 percent in small municipalities with less than 10,000 inhabitants) and tracked and monitored project implementation processes. Autonomy was given to the local governments who, through participative governance networks in the neighborhoods, shaped their own projects and made their own decisions.

All these projects had multiple facets and shared an integral focus, where public infrastructures, social policies and the management of public spaces all played an important role. These projects were particularly complex because of the large number of actors involved (governments, local agencies, NGOs, project developers, and business leaders) and because of the interplay between different policy areas and the different values which would have to be reconciled in the decision-making process. The projects were all in different phases during the time of our study. 3.3% were completed before expected, while the other 96.7% were being developed according to plans. For the then uncompleted projects, including preparation and implementation times, their average expected duration ranged from 6 years (42.8% of the cases) and 8 years (43.4%) to 11 years (13.8%).

All the projects aimed to improve urban areas with special needs (older areas and historic town centers, public housing estates, marginally urbanized areas, etc.) and they encompassed several fields of action:

- Improvement of public spaces and the creation of green spaces;
- Rehabilitation and/or provision of collective elements in buildings;
- Provision of facilities for collective use;
• Incorporation of home automation elements in buildings;
• Promotion of energy and water efficiency measures and waste recycling;
• Gender equality in the use of urban spaces and facilities;
• Accessibility and removal of architectural barriers for the handicapped; and
• Programs for social, urban and economic improvement.

We based our web survey on an existing Dutch survey on network management, a survey already used as the basis for several other studies (see Klijn, Edelenbos and Steijn, 2010; Klijn, Steijn and Edelenbos, 2010). The questions were adapted item-by-item to the setting in Catalonia. To determine the final set of constructs and associated items underlying this study and included in our version, we undertook several preliminary key steps.

First, to check content validity for the various constructs and items derived from the literature, we conducted interviews with four practitioners from several organizations in our universe of study. These interviewees (with titles including Head of the Neighborhood Program Office, Director of Services, or Program Coordinator) had extensive knowledge of and experience in managing complex networks. During the three-hour personal interviews, we raised a series of open-ended questions. The resulting discussions led to the refinement of our construct definitions and items and ultimately to the preparation of the questionnaire items and scales for our web survey.

Second, we conducted a small pre-test (n= 10) of the resulting web survey to assess factors such as the clarity of its wording, the ease with which it could be completed, and the estimated completion time. For this pre-test, we targeted respondents from the field study sample frame described below. Based on the pre-test data and comments from participating respondents, we changed the wording of a few questions, revised the range of response categories in several
cases, and removed questions, when feasible, that either generated a high item non-response rate or which were overly redundant. Because several pre-test respondents reported that the survey was too long, eliminating such questions was critical to improving the overall survey design and the subsequent field study response rate. After these revisions were made, we deployed the final web survey in the autumn of 2010, the discussion to which we now turn.

The sample population consisted of three major groups of actors. A first group was represented by the Catalan Government, more specifically, by public managers of three different ministries or departments involved in urban renewal programs (the Ministry of Territorial Policy and Public Works, the Ministry of Health, and the Ministry of Education). The second group consisted of local governments, with local managers and district program office managers. Finally, the third group was made up by representatives of the Evaluation and Monitoring Committees not already included in the previous two groups (consisting primarily of neighborhood associations and business representatives).

The regional Government provided us with a complete list of neighborhoods winning project bids between 2004-2010 (managerial teams and the members from the Evaluation and Monitoring Committees). This list included their names, organization types, and contact information, including e-mail addresses. The initial list was a starting point which we thoroughly updated by contacting each municipality three times (twice by e-mail and once by phone). The projects approved in 2010 were excluded from our analysis because they were still creating their Evaluation and Monitoring Committees at the time we implemented the web survey.

Informants had ten weeks to complete the online survey. During this time, two reminders were sent (Dillman, 2000). There were no statistical differences between late and early respondents. The data were collected in the autumn of 2010 on 118 renewal projects. We
received a total of 361 completed surveys from a target population of 1025, achieving a response rate of 35.22%. Since we had to withdraw 19 surveys that were incomplete, the final sample size of the study is 342.

The entities in the sample represented a wide variety of organizations, including the regional Government (5%), local town halls (68%), public executive agencies (8%), private organizations (2%), and non-for-profit organizations (6%), among others. Regarding the number of actors in each network, 70% of the respondents were part of projects with less than ten actors, whereas the other 30% identified their projects as having more than ten actors.

3.2. Measurement development

Dependent variable

The dependent variable in our study was the perceived network outcome. The literature on network outcomes acknowledges the complexity that measuring these outcomes entails (Agranoff and McGuire, 2003; Meier and O’Toole, 2007). A well accepted operationalization of this construct is considering not only the content of the outcomes but also the process that leads to the final results (Koppenjan and Klijn, 2004; Klijn, Edelenbos, Kort, and van Twist, 2008; Provan and Milward, 2008; Klijn, Edelenbos and Steijn, 2010; Klijn, Steijn and Edelenbos, 2010) or, what Skelcher et al. have termed as substantive and procedural societal goals (Skelcher et al., 2005).

In keeping with these studies, we assessed each construct item using 5-point Likert-type scales, ranging from 1 (totally disagree) to 5 (totally agree) to be able to develop a single scale for the outcomes measure. The list of specific survey items is provided in the Appendix (see Exhibit 1).
Explanatory variables

As argued in the first part of this article, the managerial strategy adopted to develop networks may have an important effect on the outcomes that the network can achieve (Klijn, Edelenbos and Steijn, 2010; Klijn, Steijn and Edelenbos, 2010). As mentioned, public administration scholars focusing on networks have referred to several managerial strategies. We use the comprehensive classification provided by Klijn, Steijn and Edelenbos (2010) which encompasses the following major managerial strategies: activating actors, setting process rules, and, finally, connecting and exploring content. These strategies were measured through a subset of items using 5-point Likert-type scales. Moreover, in accordance with the literature on networks, we also considered trust in the network. As reflected in Exhibit 1 in the Appendix, we applied the same methods used by these authors and examined the trust variable with several measures to form a main single scale (see Klijn, Steijn and Edelenbos, 2010, for an in-depth explanation).

Another variable we considered in our analysis was management intensity. The latter, understood as how actively the network is managed, has been found to have a positive effect on network outcomes (Klijn, Steijn and Edelenbos, 2010). In our survey, this variable was assessed through several items concerning project management and using scales of 1 to 5, where 1 meant “I completely disagree” and 5 meant “I completely agree”.

Lastly, the final explanatory variable of our study refers to the complexity of the projects undertaken by the networks. We asked respondents if they would characterize their network environment as “complex” (many actors, relations, etc.), again using a scale from 1 to 5, ranging from 1 “I completely disagree” to 5 “I completely agree”. In addition, we also considered other items such as how much they depended on the other parties to achieve their goals or how
different the opinions on the projects’ direction were among the different network members (see Exhibit 1 in the Appendix for a full description).

**Control variables**

In order to test the effects of the explanatory variables, we also included several control variables contemplated in previous research on network outcomes (Klijn, Edelenbos and Steijn, 2010; Klijn, Steijn and Edelenbos, 2010). The first is the *project phase*, referring to the developmental stage of each project. This was assessed by asking the respondents at which stage their project was currently found based on a subset of 7 different activities (ranging from analysis of the plan’s feasibility and (economic) consequences to the final evaluation report). We also assessed the *number of actors* that were involved in the network, as it may be the case that those networks with more actors obtain more benefits of managerial actions.

The position that the respondents held in the network could also affect how outcomes were perceived. As such, we asked the respondents what their *role in the project* was, differentiating between those that held managerial functions from those that did not. In this same vein, we also considered if the project had a perceived *leader* or leaders or not, and if the respondent was *currently the project leader*.

Finally, we controlled for the *years of experience* respondents had in urban renewal projects. Arguably, respondents with more experience could have a different perception of the outcomes achieved in these networks as they could compare them to the success or failure of previous projects in which they had also participated.
4. DATA ANALYSIS AND RESULTS

To simultaneously assess the measurement model and determine the effects of strategy and trust on perceived outcomes as a function of complexity and intensity (Figure 1), we employed the Partial Least Square (PLS) approach to structural equation modeling using Smart PLS 2.0 (Ringle et al., 2005). This Structural Equation Modeling software package is an application of the PLS method (Chin, 1998; Tenenhaus et al., 2005). The PLS approach to Structural Equation Models (SEM) has been proposed as a component-based estimation procedure (Tenenhaus, 2008) and different from the classical covariance-based LISREL or AMOS-type approach. This component-based approach is founded on a set of multiple regressions to estimate the presence of relationships in the structural model. It is an iterative algorithm that separately solves out the blocks of the measurement model and then, in a second step, estimates the path coefficients in the structural model.

Due to the fact that PLS is claimed to explain, at best, the residual variance of the latent variables and, potentially, the manifest variables in any regression run in the model, PLS path modeling is considered an exploratory approach (Fornell and Bookstein, 1982). PLS is seen as a soft modeling approach where no strong assumptions (with respect to the distributions, the sample size and the measurement scale) are required. This is a very interesting feature especially in those application fields where such assumptions are not tenable, at least not in full. On the other hand, it implies that the classical parametric inferential framework is missing, replaced instead by hypothesis-testing procedures based on resampling methods such as bootstrapping. To estimate the statistical significance of the parameter estimates, we employed a bootstrapping procedure with replacement using 500 samples (generated from the original dataset). We
likewise used 250 and 1000 bootstrap samples to assess the stability of the parameter estimates. The results were consistent across the 250, 500, and 1000 bootstrap samples.

4.1. Measurement validation

The factor loadings of the items with their respective constructs reached the commonly applied threshold of 0.70 (Table 1). Only a total of 5 items (v42 and v46 for the Trust component; v58 for Strategy; v55 for Intensity; and v20 for Complexity) had a factor loading value between 0.60 and 0.69, thus not fulfilling the mentioned threshold. That notwithstanding, these items were kept in our analysis as they have been widely used in public network literature, providing evidence on the reliability of the individual items. Likewise, the constructs exhibited adequate inter-item reliability (Fornell and Larcker, 1981; see composite reliability values in Table 2). Cronbach’s Alpha was slightly smaller than the 0.70 threshold only in the case of Complexity. Nevertheless, we decided not to exclude this construct from our analysis because they address an important topic in network outcomes.

Table 1
Descriptive statistics and reliability of measurement items

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<tr>
<th>Construct</th>
<th>Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Factor Loadings</th>
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<td>1.02</td>
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</tbody>
</table>
Our results provided evidence of convergent validity in three key ways. First, all items loaded positively and significantly on their respective constructs (Table 1). Second, all constructs exhibited composite reliabilities of 0.80 or higher (Table 2). Third, as a rule of thumb, the average variance extracted (AVE) should be greater than 0.50 (Fornell and Larcker, 1981; Chin, 1998). The AVE for all our constructs easily exceeded this threshold value (Table 2). The AVE is also used to evaluate discriminant validity (Fornell and Larcker, 1981; Chin, 1998). The square root of the AVE for each construct was greater than all other cross-correlations (Table 2).

<table>
<thead>
<tr>
<th>Trust</th>
<th>6.90</th>
<th>1.51</th>
<th>0.80</th>
</tr>
</thead>
<tbody>
<tr>
<td>V37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V38</td>
<td>3.55</td>
<td>0.88</td>
<td>0.72</td>
</tr>
<tr>
<td>V39</td>
<td>6.97</td>
<td>1.80</td>
<td>0.85</td>
</tr>
<tr>
<td>V40</td>
<td>7.10</td>
<td>1.60</td>
<td>0.72</td>
</tr>
<tr>
<td>V41</td>
<td>5.95</td>
<td>1.77</td>
<td>NA</td>
</tr>
<tr>
<td>V42</td>
<td>6.73</td>
<td>1.61</td>
<td>0.64</td>
</tr>
<tr>
<td>V44</td>
<td>3.74</td>
<td>0.76</td>
<td>0.88</td>
</tr>
<tr>
<td>V45</td>
<td>3.24</td>
<td>0.87</td>
<td>NA</td>
</tr>
<tr>
<td>V46</td>
<td>3.55</td>
<td>0.83</td>
<td>0.65</td>
</tr>
<tr>
<td>V47</td>
<td>3.33</td>
<td>1.03</td>
<td>NA</td>
</tr>
<tr>
<td>V48</td>
<td>3.80</td>
<td>0.79</td>
<td>0.87</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy</th>
<th>3.40</th>
<th>1.16</th>
<th>0.87</th>
</tr>
</thead>
<tbody>
<tr>
<td>V57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V58</td>
<td>2.35</td>
<td>1.11</td>
<td>0.66</td>
</tr>
<tr>
<td>V59</td>
<td>3.67</td>
<td>1.14</td>
<td>0.85</td>
</tr>
<tr>
<td>V60</td>
<td>3.71</td>
<td>0.89</td>
<td>0.80</td>
</tr>
<tr>
<td>V61</td>
<td>3.84</td>
<td>0.85</td>
<td>0.79</td>
</tr>
<tr>
<td>V62</td>
<td>3.80</td>
<td>0.82</td>
<td>0.75</td>
</tr>
<tr>
<td>V63</td>
<td>3.82</td>
<td>1.00</td>
<td>0.83</td>
</tr>
<tr>
<td>V64</td>
<td>3.91</td>
<td>0.88</td>
<td>0.85</td>
</tr>
<tr>
<td>V65</td>
<td>4.05</td>
<td>0.88</td>
<td>0.83</td>
</tr>
<tr>
<td>V66</td>
<td>3.73</td>
<td>1.02</td>
<td>0.79</td>
</tr>
<tr>
<td>V67</td>
<td>3.75</td>
<td>0.99</td>
<td>0.83</td>
</tr>
<tr>
<td>V68</td>
<td>3.17</td>
<td>0.98</td>
<td>0.79</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intensity</th>
<th>4.08</th>
<th>0.96</th>
<th>0.81</th>
</tr>
</thead>
<tbody>
<tr>
<td>V53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V54</td>
<td>4.25</td>
<td>1.03</td>
<td>0.77</td>
</tr>
<tr>
<td>V55</td>
<td>3.82</td>
<td>1.09</td>
<td>0.60</td>
</tr>
<tr>
<td>V56</td>
<td>3.80</td>
<td>1.11</td>
<td>0.70</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complexity</th>
<th>3.66</th>
<th>1.09</th>
<th>0.76</th>
</tr>
</thead>
<tbody>
<tr>
<td>V18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V19</td>
<td>2.40</td>
<td>1.13</td>
<td>0.75</td>
</tr>
<tr>
<td>V20</td>
<td>3.84</td>
<td>0.99</td>
<td>0.64</td>
</tr>
<tr>
<td>V22</td>
<td>2.44</td>
<td>1.07</td>
<td>0.79</td>
</tr>
<tr>
<td>V23</td>
<td>3.42</td>
<td>1.01</td>
<td>0.78</td>
</tr>
<tr>
<td>V24</td>
<td>2.61</td>
<td>1.12</td>
<td>0.76</td>
</tr>
</tbody>
</table>
thus providing evidence for the distinctiveness of the constructs. The principal components’
factor analysis loadings (Table 1) further established this discriminant validity; all items had high
loadings in their respective constructs with low cross-loadings in the others.

Table 2
Construct correlation, composite reliability, Cronbach’s Alpha, and AVE

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
<th>AVE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complexity</td>
<td>0.62</td>
<td>0.80</td>
<td>0.68</td>
<td><strong>0.82</strong>a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Intensity</td>
<td>0.71</td>
<td>0.83</td>
<td>0.65</td>
<td>-0.04b</td>
<td><strong>0.81</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Outcome</td>
<td>0.85</td>
<td>0.93</td>
<td>0.87</td>
<td>-0.10</td>
<td>0.64</td>
<td><strong>0.93</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Strategy</td>
<td>0.80</td>
<td>0.87</td>
<td>0.63</td>
<td>0.02</td>
<td>0.65</td>
<td>0.75</td>
<td><strong>0.79</strong></td>
<td></td>
</tr>
<tr>
<td>5. Trust</td>
<td>0.83</td>
<td>0.89</td>
<td>0.67</td>
<td>-0.23</td>
<td>0.58</td>
<td>0.76</td>
<td>0.64</td>
<td><strong>0.82</strong></td>
</tr>
</tbody>
</table>

a The square root of shared variance between the constructs and their measures are provided in the diagonal (in bold).
b Off-diagonal elements are the Pearson correlations between the different constructs.

4.2. Common methods variance

Self-reported survey studies with a common grade are susceptible to common methods variance
(CMV). To reduce the likelihood that respondents would “edit their responses to be more
socially desirable, lenient, acquiescent, and consistent with how they think the researcher wants
them to respond,” we guaranteed the respondents’ anonymity (Podsakoff et al., 2003).

We also segmented the questions pertaining to the predictor and criterion variables into
different sections of the survey. Note that these variables were derived from different scale
anchors/formats. Such “procedural remedies” to control method biases made it difficult for the
respondents to link the various measures together, particularly since the survey was fairly long
(Podsakoff et al., 2003).
4.3. Testing the structural model

The standardized path coefficients associated with the structural model are provided in Figure 2 and Table 3 below. Our model exhibits adequate predictive validity, as it explains 71.9% of the variance in Outcomes. Of the variance in Strategy, 44.3% is explained by the main effect of Intensity and Complexity. For Trust, 44.3% of the variance is explained by the moderating role played by Strategy and by the main effect of Intensity and Complexity. Recall that Hypothesis 1 posits that Strategy has a positive influence on performance. The PLS results provide empirical support for six of the seven hypotheses. All regression coefficients are in the predicted direction and significant with the exception of the relationship between Complexity and Strategy (Hypothesis 5).

Figure 2
Approved path model (calculation with SmartPLS)

Table 3
Parameter estimation (calculation with SmartPLS)

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Original Sample</th>
<th>Sample Mean</th>
<th>Standard Error</th>
<th>T Statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Strategy ⇝ Outcome</td>
<td>0.4072</td>
<td>0.4067</td>
<td>0.0462</td>
<td>8.818</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*** p< .001
** p< .05
* p< .10
In detail, we found support for H1, which predicts a positive relation between strategy and outcomes. In addition, the higher the magnitude of strategy, the more positive the outcomes. We interpret that this is because collaborative processes among organizational representatives can be characterized as joint learning systems (Agranoff and McGuire, 2001). The most important consequences do not occur only at the end but also during the process itself. Collaborative discussions involve creating shared meanings, pursuing mechanisms other than arguing, encouraging added knowledge, and formulating ideas and processes. Thus, active network management impacts the outcome factor.

In the goal-directed networks discussed here, not only organizational goals (content outcomes) but also network-level goals (process outcomes) guide organizational actions. These goals might include attracting new network members, finding broad funding mechanisms, addressing community needs, or improving services. Network goals may also be process-oriented, like working to reduce competition or conflict among participants. Consistent with work by Provan and Milward (2008) on domain similarity, when there is general consensus on broad network-level goals both regarding goal content and processes, network participants are more likely to be satisfied with outcomes.

In support of H2, the results indicate that the level of trust has a significant effect on the degree of perceived outcomes. Trust is a necessary condition though not sufficient on its own for

<table>
<thead>
<tr>
<th></th>
<th>Trust $\rightarrow$ Outcome</th>
<th>0.5264</th>
<th>0.5269</th>
<th>0.0447</th>
<th>11.767</th>
<th>0.0000</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2</td>
<td>Trust $\rightarrow$ Outcome</td>
<td>0.5052</td>
<td>0.5037</td>
<td>0.0669</td>
<td>7.555</td>
<td>0.0000</td>
</tr>
<tr>
<td>H3</td>
<td>Trust $\rightarrow$ Outcome</td>
<td>0.5052</td>
<td>0.5037</td>
<td>0.0669</td>
<td>7.555</td>
<td>0.0000</td>
</tr>
<tr>
<td>H4</td>
<td>Trust $\rightarrow$ Outcome</td>
<td>0.5052</td>
<td>0.5037</td>
<td>0.0669</td>
<td>7.555</td>
<td>0.0000</td>
</tr>
<tr>
<td>H5</td>
<td>Trust $\rightarrow$ Outcome</td>
<td>0.5052</td>
<td>0.5037</td>
<td>0.0669</td>
<td>7.555</td>
<td>0.0000</td>
</tr>
<tr>
<td>H6</td>
<td>Trust $\rightarrow$ Outcome</td>
<td>0.5052</td>
<td>0.5037</td>
<td>0.0669</td>
<td>7.555</td>
<td>0.0000</td>
</tr>
<tr>
<td>H7</td>
<td>Trust $\rightarrow$ Outcome</td>
<td>0.5052</td>
<td>0.5037</td>
<td>0.0669</td>
<td>7.555</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
better perceived outcomes. Furthermore, there is evidence that the degree of active network management strategies influences the intensity of trust (H3). H3 is thus supported: network management has a positive influence on trust. Trust in renewal projects is higher if managers take managerial actions in the complex network.

These results support previous work by Ring and van de Ven (1992), pointing to the crucial role that informal, socially-embedded personal relationships have in producing stable relations based on trust, obligation and custom among formally independent organizations. More active network management will develop enhanced trust. The long duration of the analyzed networks probably helped the process of building trust in the projects studied (O’Toole and Meier, 1999).

H4 is supported: intensity (power to) has a positive impact on trust in the project. That is, intense steering activity builds trust in the project to reach outcomes in renewing destitute areas. The greater the complexity in a network, the more complex the strategy and the more managerial efforts can be expected in more complex projects.

H5 is not supported: complexity has a positive impact on management efforts. Results demonstrate no significance between the two variables. We interpret that this is because active network management is carried out knowing that the issue at stake is complex, thus not having an impact on the perceptions of the surveyed individuals. This assumes, a priori, that public network management is specially complicated when managers must coordinate networks involving organizations from the nonprofit and for-profit sectors (Herranz, 2007). Consequently, in addition to the challenge of synchronizing multiple organizations, network managers are often implicitly expected to coordinate organizations that may have different interests, motivations, and responses to incentives and disincentives, that is, network managers must often face the
challenge of reconciling different organizational logics and strategic orientations derived from sectorial differences.

H6 is supported: complexity has a negative impact on building trust. Accordingly, the more complex the project, the less trust is developed among partners. Network actors are thus sensible to the complexity of the network when evaluating the capacities that the other actors have in dealing with difficult problems.

Provan and Kenis (2008) state that, as the number of organizations in the network increases, shared governance becomes highly inefficient, with participants trying to coordinate across organizations. We controlled for that factor and found no difference with respect to the number of network participants and network complexity. This is probably due to the fact that the participants are not spread out geographically and that the greatest number of responses came from networks whose number of participants varied from 5 to 14 organizations (5 to 9: 53%; 10 to 14: 19%). Only 6% of the surveyed networks had more than 20 organizations. This is consistent with findings from the literature on small groups, suggesting that shared-governance forms would seem most likely to be effective with fewer than six to eight organizations (Provan and Kenis, 2008).

H7 is supported: Intensity has a positive impact on Strategies to exploit opportunities when managing the network. In practical terms, managers can develop a more strategic focus when the project is intensely managed.

Regarding the control variables, when leadership is perceived in the project (see Figure 3) mean values tend to be higher and significant in comparison to the subgroup without it (with the exception of complexity, where no differences are observed). None of the other control variables was found to have any significant effect on the constructs of our model.
In sum, the extent of project intensity has an impact on the level of network management strategies (H7) and on trust (H4). Consequently, these two relationships reveal intensity’s indirect influence on the level of outcomes (H1 and H2). Complexity’s negative impact on trust (H6) results in an indirect influence on outcomes as well.

5. CONCLUSIONS

We conducted our empirical test of networking management efforts and performance on urban renewal projects in Catalonia. The results of our analysis are encouraging regarding the importance of management for network outcomes. First, our findings are consistent with previous work examining the relationship between strategy and outcomes (Klijn, Steijn and Edelenbos, 2010) and the strong correlation between trust and outcomes (Klijn, Edelenbos and Steijn, 2010). We therefore conclude that these results offer a replication of the broad pattern of results reported by previous studies.
Second, the findings from our structural model demonstrate a strong relationship between those two variables: network management strategy and trust, both impacting on the perceived outcomes. We also found that management intensity has a positive impact on strategy as well as on trust in the project. Our findings also show that complexity has a negative impact on trust. The non-significant results regarding complexity’s impact on strategy, however, are contrary to our hypothesis.

Organizations join or form networks for a variety of reasons, including the need to gain legitimacy, serve clients more efficiently, attract more resources, and address complex problems (Provan and Kenis, 2008). Until recently, little systematic research had been dedicated to public-managerial impacts (Meier and O’Toole, 2001; Klijn, Steijn and Edelenbos, 2010). Our study provides a test on a path model linking managerial actions, trust, intensity and complexity in networks explicitly with assessments of perceived outcomes. A key finding of this research is that managers may wield more influence on network dynamics than previously theorized (Herranz, 2007). A key contribution we hope to make is to develop a theoretical rationale for network management that can predict the successful achievement of network-level outcomes (Provan and Kenis, 2008) or of what some have referred to as network effectiveness (Provan and Milward, 2001).

A great deal of the research on networks and networking thus far concentrates on one or a few cases. The results of our study open the possibility that diverse variables can be explored systematically using a large number of cases. Furthermore, we examined outcomes as a multi-dimensional variable in a large-scale network study. From a management perspective, our work demonstrates that effective network management requires recognizing and responding to network complexity, and also intensely managing needs, outcomes and trust. We believe that we
have made a case for a reasonable fit between the hypothetical path model of network outcomes and our large-n quantitative study on the urban renewal policy in Catalonia.

Our study also has some limitations. It incorporates data from a large number of cases. In so doing, our analysis sacrifices valuable rich detail about particular managers and managerial contexts but gains generalizability across a fairly broad number of governance circumstances. Researchers on networking will need to keep in mind the types of organizations and agents examined and also recognize that generalizations about managerial networking must be contingent.

To be able to bridge the gap and show how variables affect each network differently, a comparative analysis of cases is needed. This was done for the urban renewal program subject of our study through a qualitative comparison of eight cases (Parés, Martí and Blanco, 2009). These authors concluded that, despite the fact that all the cases were based on the same public program promoted at the regional level, the programs were quite different locally in terms of their governance models and the content of the renewal policies being promoted.

Our results must be regarded as preliminary; they are drawn only from a specific national setting. Still, within these limits, the findings confirm the view that managerial networking has an impact on outcomes. Comparative research studies should be conducted internationally to identify the patterns and how they relate to political cultures.
**APPENDIX**

Exhibit 1 summarizes the items of the dependent variables and all the explanatory variables included in our analysis.

**Exhibit 1.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Nature</th>
<th>Item</th>
<th>Authors</th>
</tr>
</thead>
</table>
| Outcome  | Dependent | *Content outcome*  
V25. Do you think that innovative ideas have been developed during the project?  
V26. Do you think that the various aspects of the problem were sufficiently integrated?  
V27. Generally speaking, do you think that the various stakeholders in the project have contributed to achieving results?  
V28. Do you think that the solutions developed are sufficient to address the problems?  
V29. Do you think that the developed solutions will be long-lasting?  
V30. Do you think that the benefits of this cooperation outweigh its costs?  
*Process outcome*  
V31. Do you think that the various stakeholders have contributed substantially to the project’s management?  
V32. Do you think that conflicts and differences of opinion have been resolved satisfactorily?  
V34. Do you think that the various stakeholders’ different perspectives were used to solve problems?  
V35. Do you think that the various stakeholders had frequent contact with one another during the project?  
V36. Do you think that the project stakeholders will approve of the results? | Skelcher, Mathur and Smith (2005); Ansell and Gash (2007); Provan and Kenis (2008); Edelenbos, Steijn and Klijn (2010); Klijn, Steijn and Edelenbos (2010); Klijn, Edelenbos and Steijn (2010). |
| Strategy  | Explanatory | *Exploring*  
V60. In this project, special attention has been paid to sharing diverse points of view.  
V61. During the collection of information, emphasis was placed on establishing starting points and common informational needs.  
V62. A satisfactory amount of time was spent on communication among the various parties.  
*Connecting*  
V63. The project leaders consulted with the people who carried it out. Decisions were made collectively.  
V64. The project leaders took into account existing interpersonal relationships, their bases, and how they were generated and developed.  
V65. When deadlock was reached or problems arose | Agranoff and McGuire (2001); Ansell and Gash (2007); Herranz (2007); Rethemeyer (2005); Rethemeyer and Hatmaker (2007); O’Toole and Meier (1999); Walker, O’Toole and Meier (2007). |
during the project, management tried to find common ground between the positions of the conflicting interests.

*Arranging*

V57. Groups of public stakeholders are involved through platforms for negotiation and debate.
V58. Groups of private companies are involved through platforms for negotiation and debate.
V59. Civil-society groups are involved through platforms for negotiation and debate.

*Process Rules*

V66. In this project, explicit agreements were reached about how to organize cooperative efforts (project groups, management groups, etc.).
V67. The agreements regarding this project consciously envisaged the possibility of diverting from the established plan in the event that it proved advantageous to do so.
V68. Parties were enabled to abandon the project if necessary to protect their own interests.

<table>
<thead>
<tr>
<th>Trust</th>
<th>Explanatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>V37. How would you rate the overall degree of trust between the various parties involved in the project? Decreased a lot, decreased, remained the same, increased, increased a lot</td>
<td>Powell (1990); Ring and van de Ven (1992); Milward and Provan (2003); Ansell and Gash (2007); Klijn (2008); Provan and Kenis (2008); Klijn, Edelenbos and Steijn (2010).</td>
</tr>
<tr>
<td>V38. Since you became involved in the project, has the degree of trust in the cooperative effort…?:</td>
<td></td>
</tr>
<tr>
<td>V39. (Other) local public stakeholders</td>
<td></td>
</tr>
<tr>
<td>V40. (Other) departments of the Catalan government</td>
<td></td>
</tr>
<tr>
<td>V42. (Other) social groups / actors of civil society</td>
<td></td>
</tr>
<tr>
<td>V44. Generally speaking, the parties to the project have fulfilled their agreements.</td>
<td></td>
</tr>
<tr>
<td>V46. The parties to the project take into consideration the other parties' interests.</td>
<td></td>
</tr>
<tr>
<td>V48. The parties are able to assume, in principle, that the other actors involved have good intentions.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intensity</th>
<th>Explanatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>V53. The project was actively managed (the various parties were called to meetings, a meeting agenda was followed, the various parties were coordinated, the content of the project was managed, etc.).</td>
<td>Agranoff and McGuire (2001); Agranoff (2007); Ansell and Gash (2007); Rethemeyer and Hatmaker (2007).</td>
</tr>
<tr>
<td>V54. A project director has been appointed and is visible for all the involved parties.</td>
<td></td>
</tr>
<tr>
<td>V55. Multiple individuals are involved in managing the project.</td>
<td></td>
</tr>
<tr>
<td>V56. Senior management teams in the different organizations are also involved.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complexity</th>
<th>Explanatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>V18. I would characterize my network’s environment as complex (many actors, relations, etc.).</td>
<td>Klijn (2008); Provan and Kenis (2008).</td>
</tr>
<tr>
<td>V19. In my network’s environment, there is a lot of</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
criticism about this project.
V20. The project is connected to a lot of other projects.
V21. In this network, I depend highly on other parties to achieve my goals.
V22. In the network, parties have significant differences of opinion about the project’s direction.
V23. In the network, there is strong emphasis on learning from others’ experience and insights.
V24. Many unexpected events and changes have taken place in the network.

For further information on how these variables build from previous literature, see Edelenbos, Steijn and Klijn (2010), and Klijn, Steijn and Edelenbos (2010).

REFERENCES


