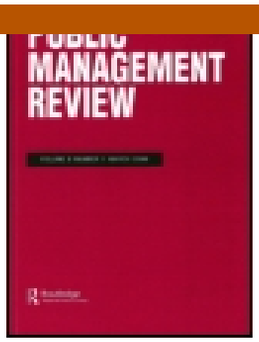

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Facilitating conditions for boundary-spanning behaviour in governance networks

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ABSTRACT

This article examines the impact of two facilitating conditions for boundary-spanning behaviour in urban governance networks. While research on boundary spanning is growing, there is little attention for antecedents. Combining governance network literature on project management and organizational literature on facilitative and servant leadership, we examine two potential conditions: a facilitative project management style and executive support. We conducted survey research among project managers involved in urban governance networks in order to test these relationships. We found positive relationships between facilitative project management and boundary-spanning behaviour, while executive support indirectly, via facilitative management, contributed to boundary-spanning behaviour.

KEYWORDS Boundary spanning; facilitative leadership; executive support; network performance; stimulating conditions

1. Introduction

Previous research has analysed and indicated the importance of boundary spanners for network performance and trust building in governance networks (Van Meerkerk and Edelenbos 2014; Williams 2002). As many public issues today do not fit jurisdictional boundaries and agency silos, cross-boundary interaction is increasingly important. This has led to an increasing widespread of network forms of governance between relatively autonomous actors around complex issues (Koppenjan and Klijn 2004; Sørensen and Torfing 2007). Competent boundary spanners play a key role in these governance networks, as they are organizational members who are able to link the organization or constituency they represent with its environment (Steadman 1992; Tushman and Scanlan 1981). They are engaged in building sustainable relationships between relevant organizations in their organizations' environment, information transfer across their organizational boundary, translation across boundaries and mobilizing support within the environment, and their home organization for developments in the network. These boundary-spanning activities are important for connecting different actors and their interests, for building trust between those actors, and to help improve coordination around decision-making and implementation in governance networks around complex public issues (Van Meerkerk 2014).

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While the literature on boundary spanning is growing (as e.g. a simple search in the database Scopus will verify[1]; cf. Williams 2013), empirical research on the impact of contributing factors on boundary-spanning behaviour is rather scarce. This holds especially for boundary-spanning behaviour in the context of governance networks. By far most of the literature on boundary spanning focuses on the effects of boundary-spanning behaviour, for example, on team performance (Ancona and Caldwell 1992), absorptive capacity (Ebers and Maurer 2014), innovation (Tushman 1977), or network performance (Van Meerkerk and Edelenbos 2014). Far less attention has been paid to facilitating conditions or antecedents of boundary-spanning behaviour (Lee and Sawang 2016). And if so, it is mostly focused on either general environmental characteristics of the organization (e.g. Bielefeld 1992) or personal characteristics, such as competences (e.g. Williams 2002) and personal networks (e.g. Brion et al. 2012), of the boundary-spanning individual. In literature on network governance, we lack understanding about which network conditions and behavioural circumstances influence the work of boundary spanners and (subsequently) network performance (cf. Klijn 2008; Lecy, Mergel, and Schmitz 2014). In this article, we therefore examine the effects of two potential facilitating conditions. We theoretically argue that facilitative project management and executive support (support by principals) can be considered relevant contextual aspects influencing boundary-spanning behaviour in governance networks, which subsequently enhance trust-building among network actors and network performance. We focus our discussion on facilitating conditions in relation to boundary-spanning behaviour, but we put this in a more integral model by also testing their (indirect) effects on trust and network performance.

In order to empirically examine these relationships, we conducted survey research on complex urban projects in the four largest cities in The Netherlands. These projects, like regeneration of deprived areas, are embedded in networks, in which different governmental agencies, commercial actors, non-for-profit organizations, and residents reshape urban areas, and are dependent of each other, as these projects cross different organizational and jurisdictional boundaries (Healey 2006; Klijn, Steijn, and Edelenbos 2010).

2. Context of research: governance networks around complex urban development projects

In this article, the concept of governance networks refers to more or less stable patterns of social relations between mutually dependent actors around boundary-crossing public issues, and which are formed, maintained, and changed through interactions between the involved actors (Koppenjan and Klijn 2004). These networks typically emerge as a response to complex policy issues that cannot be effectively addressed by a single actor but require collective actions of more actors (Sørensen and Torfing 2007; Lecy, Mergel, and Schmitz 2014). Such issues cross different organizational, jurisdictional, geographical, societal, and/or functional boundaries and have a multi-value character. This leads to relatively high levels of interdependency between actors, by which actors have to negotiate and – to some extent – have to combine their resources and knowledge to achieve qualitatively good outcomes (Agranoff and McGuire 2001). The specific set of actors involved in governance networks differ per situation and issue, but in general, they include a combination of

public, private, and societal actors. In some occasions, the network will be centred around a public–private partnership, whereas in other circumstances, the (core of the) network will be more centred on government–society relationships, for example, as a consequence of citizen participation efforts or citizen initiatives.

Also in the field of urban development, such a transition towards network forms of governance has been observed (e.g. Healey 2006). Urban development projects, such as urban regeneration initiatives, touch upon various utility functions and stakeholders. Urban development projects are boundary-crossing public issues, often including a mix of spatial functions such as infrastructure, housing, social facilities (schools, sports facilities), business areas, commercial strips, and green/recreational areas. They often involve a variety of governmental and non-governmental organizations, such as housing associations, private developers, societal interest groups, and different governmental organizations. According to Lowndes and Skelcher (1998), the emergence of these networks around urban development projects, besides increasing resource interdependencies, is often driven by a demand to provide integrative responses to complex urban issues within an increasingly fragmented organizational landscape.

The above definition and characteristics of governance networks do not say anything about the degree and the quality of interaction and the level at which common objectives are formulated, let alone achieved. Governance networks are characterized by interaction complexity (Teisman, Van Buuren, and Gerrits 2009), referring to the density and multiplicity of relationships between actors in the network. Actors in governance networks can be strongly or loosely coupled. The different organizations in the networks that are part of this research are more loosely related, as compared to, for example, policy implementation networks around public services Provan and Kenis 2008). The focus in this research is on issue-specific networks since they emerge around concrete urban development projects, like regeneration of certain city districts where e.g. city representatives, private project developers, and residents form a temporary actor network in developing and implementing the project. In these networks, there is a strong diversity of involved organizations, interests, and perceptions.

2.1 *The importance of boundary spanners for trust building in governance networks and network performance*

The realization of good network performance in governance networks calls for connective capacity (Edelenbos and van Meerkerk 2015; Klijn, Steijn, and Edelenbos 2010; Ysa, Sierra, and Esteve 2014). Boundary spanners and trust are important building blocks of this connective capacity. In this research, we build on previous research in which we have theorized and empirically tested the (positive) effects of boundary-spanning behaviour on trust building and network performance (see Van Meerkerk and Edelenbos 2014). Through their role in information exchange, their relational activities, and their feeling for the interests and social constructions of other actors in the network, competent boundary spanners enhance trustful relationships between actors in the governance network.[2] Moreover, with their role in increasing the flow of information, and translating information across organizational boundaries, connecting individuals and processes across organizational boundaries, competent boundary spanners contribute to the performance of

governance networks. Similar results are found in other research on the effects of boundary spanners on trust in and performance of inter-organizational settings (e.g. Ebers and Maurer 2014; Brion et al. 2012). Therefore, we are not going deeper into these relationships here, as our interest lies in extending this conceptual model by going deeper into the facilitating conditions, which may trigger and enhance boundary-spanning behaviour of network actors.

3. Facilitative project management as a stimulating condition for boundary-spanning behaviour

Our study focuses on the role of other actors' behaviour which might trigger boundary-spanning behaviour important for realizing network performance, namely that of key figures in governance networks dealing with urban development projects: project managers and (political) executives. In this way, we aim to contribute to literature on boundary spanning in governance works by connecting it with project management literature and organizational literature on facilitative and servant leadership. First, we will go deeper into the role of leading project managers. Next, we go deeper into the role of executive support.

Besides their direct role in the development, coordination, and implementation of urban development projects, we argue that project managers can also play an important role in creating a context in which boundary-spanning behaviour and cooperation of actors in governance networks is triggered. In governance network literature, the general focus is mainly on direct effects of managerial strategies on network performance (Klijn, Steijn, and Edelenbos 2010; Meier and O'Toole 2007; Ysa, Sierra, and Esteve 2014). However, how project managers can enhance boundary-spanning behaviour of actors which are part of their network, taking potential cascading effects on network performance and trust into account, is less examined.

To examine this dimension of project management, we build on organizational literature on facilitative leadership and servant leadership. This literature pays attention to the role of leaders in creating a context in which a team operates effectively (Pirola-Merlo et al. 2002). In the same line, literature on collaborative governance have also indicated the importance of a facilitative leadership style for effective collaboration and communication between organizations to emerge (Ansell and Gash 2008). In relation to project performance, the effects of facilitative leadership are considered to be indirect. In their study on team climate and performance, Pirola-Merlo et al. (2002) found a direct effect of facilitative leadership on team climate, which subsequently affected the performance of teams. Whereas (organizational) literature on facilitative leadership stresses the role of leaders in encouraging relationship building among team members, literature on servant leadership emphasizes empowerment, delegation, and encouragement of team members (Stone, Russell, and Patterson 2004). According to Liden et al. (2008, 162), 'Servant leadership differs from traditional approaches to leadership in that it stresses personal integrity and focuses on forming strong long-term relationships with employees.' Furthermore, it also unique in that it is sensitive to the needs of numerous stakeholders and extends outside the organization: servant leaders serve multiple stakeholders, including their communities and society as a whole (Liden et al. 2008).

Both constructs of facilitative leadership and servant leadership can inform our development of a facilitative dimension of project management that may enhance

boundary-spanning behaviour in governance networks. Although there are several dimensions identified as being part of a facilitative and servant leadership style, we focus on empowerment and facilitation, as these are interesting dimensions for project management research in the context of governance networks. Empowerment is about encouraging and facilitating others in identifying and solving problems and is considered to be a key dimension of servant leadership (Liden et al. 2008; Van Dierendonck and Nuijten 2011). Empowerment aims at fostering a proactive, self-confident attitude among team members, giving them a sense of personal power. Specifically in dealing with complex projects, empowerment of other actors can stimulate commitment (Guastello 1995; Sarin and McDermott 2003). This can also enhance the performance of urban development projects as network participants are stimulated to come up with their own initiatives, facilitating the development of a more integrative and diverse project. Participation is therefore also a key element of a facilitative style (Sarin and McDermott 2003). Facilitative project managers invite actors' active involvement in the development of the project as a whole.

A facilitative management style is further characterized by engaging in activities that stimulate relationship building among different actors in the network. Facilitative management aims at creating a constructive platform for interaction and dialogue between actors. In this respect, a facilitative project manager will be focused at organizing informal and face-to-face meetings between actors. Face-to-face communication has both a substantive as well as a process function. It facilitates boundary-spanning activities such as information exchange and it is especially important in the exchange of tacit knowledge (Asheim, Coenen, and Vang 2007). Furthermore, it is highly important for exchanging mutual commitment and building a group identity (Ostrom 1998). Marzano, Carss, and Bell (2006) note that a combination of informal, team building events and meetings/workshops is important for enhancing mutual understanding, stimulating cross-boundary interaction. In the same line, Ansell and Gash (2008, 558) note that face-to-face dialogue 'is at the core of the process of breaking down stereotypes and other barriers to communication [...].'

In short, the manager as facilitator is focused on relationship building and creating commitment among network actors. They are focused on creating an environment in which representatives of organizations with different interests and perceptions become more willing to cross their organizational, professional, and/or social boundaries and invest in boundary-spanning activities. Network participants get to know each other and feel comfortable to share information. Moreover, this will enhance their feeling for the interests and perceptions of other actors in the network. Building on the literature discussion, we therefore formulate the following hypothesis:

(H1) A facilitative management style will foster boundary-spanning activity in the governance network.

4. Executive support as a facilitating condition for boundary-spanning behaviour

Project managers do their job under the supervision of a governmental official who is held responsible for the success and failure of a project. This principal is an administrative (not necessarily a political) officer. In a hierarchical position/relation, the project manager gets the mandate to prepare and implement a specific project or policy (Meredith and Mantel 2000); the administrative officer is then held accountable by the controlling politicians. This structure is common in line organizations in which different hierarchical levels are created in developing policy, assigning people to preparing, and implementing policies and projects (Meredith and Mantel 2000; Buijs and Edelenbos 2012).

The principal attention to projects differs; some projects get high attention due to their political sensitivity (d'Herbemont and Cesar 1998). Executive managers often times stay on top of these dossiers and closely monitor activities. Other projects are less interesting and relevant to administrative officers. In these circumstances, it is known that project managers experience difficulties to get administrative officers and executive managers interested, aligned and committed to their projects.

Kerzner (1987) argues that executive commitment to project management is one of the important critical success factors for project excellence. 'Project management is unlikely to succeed unless there exists visible support and commitment by executive management' (ibid: 34). The higher level of management is needed to rapidly respond to potential problems in the project implementation. This attention may be directed internally, to political/higher organizational levels or externally to customers and user of the output of projects.

In organization theory, there has been quite some attention to the concept of commitment. There has been substantial research on commitment to goals, to jobs, to organizations, to courses of action and strategic configurations. This research approaches commitment as the state of being bound or obligated; it is about the state or quality of being dedicated to something or someone (Hambrick and Cannella 1993). According to Stratman and Roth (2002), executive commitment is the (top) management willingness to support projects by allocating the needed resources (e.g. human, planning, technical, and budgetary means) for successful project implementation. Executive managers assign resources also for the long term. Executive managers are enthusiastic about the potentials of the project and invest time and attention to understand the project.

However, executive support doesn't imply that top managers want to stay on top of the project and the progress it makes. By constantly interfering with project managers' daily business, the project implementation will make them authoritative in making decisions. Executive support in this view also means that executive managers will provide discretionary space for project managers to become responsive and responsible people in preparing and implementing the projects (Stratman and Roth 2002). Managers working with a precise assignment from their political principal or from their organizational context have less opportunity to be responsive towards their environment. Moreover, when project manager constantly need the explicit backing of executive managers, an efficient implementation of the project implementation will be hampered (Crawford et al. 2003). This also means that line

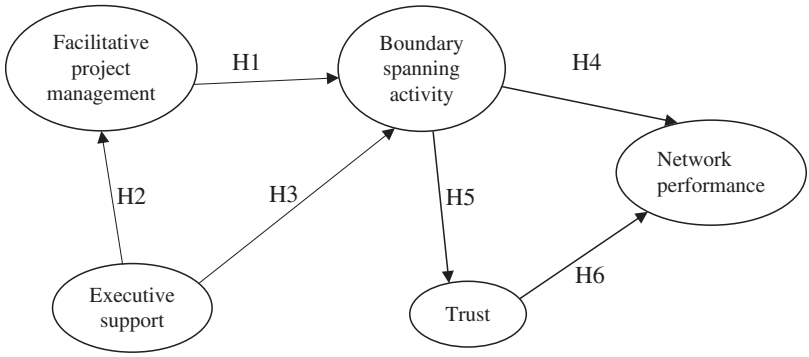

Figure 1. Conceptual model.

managers will end up in doing the daily business of project managers. Executive managers must keep oversight but need not to be bothered by project implementation details. Therefore, the mandatory space of projects managers – and not too much bureaucratic interference – is important to implement the project in an efficient and effective way (Crawford et al. 2003).

Executives often times determine the assignment for project managers. This assignment can be defined in different ways ranging from strictly to loosely defined. In the latter situation, the project manager has much room to manoeuvre and much mandatory space (Lipsky 1984). This more or less open assignment also opens up the possibility for the stakeholders to get involved and active. Wide boundary judgements regarding context and participation lead to more opportunities for stakeholder to develop stakeholder engagement and boundary-spanning activities (Ebers and Maurer 2014; Van Meerkerk, Van Buuren, and Edelenbos 2013).

Hence, executive support is characterized by showing both commitment by providing support and resources, but without detail interference. We therefore expect that executive support will foster facilitative management, as managers get more room to develop and enact a facilitative management style:

(H2) A higher level of executive support will foster a facilitative management style.

Furthermore, we expect that executive support will enhance the boundary-spanning behaviour of network actors as they have more incentives to invest in boundary-spanning activities (cf. Ebers and Maurer 2014). This leads to the following hypothesis:

(H3) A higher level of executive support will foster boundary-spanning activity in the governance network.

Figure 1 shows the conceptual model we will test, combining the various hypotheses based on the previous sections. As addressed before, H4, H5, and H6 are previously examined but tested again in this extended model.

Table 1. Population and response of the survey.

	Population	Response (absolute)	Response (percentage) (%)
Municipalities (4)	288	117	40.6
Private organizations (2)	57	24	42.1
Total	345	141	40.9

5. Methods

5.1 *Sample and data collection*

We collected data from a web-based survey held in 2011 (April–July) among leading project managers in the four largest cities of The Netherlands (Amsterdam, Rotterdam, The Hague, and Utrecht[3]) and managers within two private firms (P2 and DHV) that operate as project managers in these four cities (see Table 1). Each respondent is a manager involved in specific urban projects in one of the four cities. No significant statistical differences exist between respondents from the four different municipalities or consultancy firms according to the ANOVA tests comparing the six groups. The managers are involved in a variety of urban projects, but generally the projects concern the restructuring of parts of a city. Some of the projects concern restructuring/building dwellings and community facilities in a neighbourhood; others are more focused at business functions and/or commercial functions (shopping malls and so forth). The study considers the group of interdependent actors around the urban projects as the network; this is also how it was presented to the survey respondents. Surveys were sent (with one reminder and a phone reminder) with the consent of their organizations to all project leaders of urban projects in implementation. We explicitly selected the project managers because they know what is going on in the surveyed projects and are also equipped to answer specific questions concerning other actors in the network, project management and relationship with principal, and so forth. To safeguard the independence of our data, we arranged with participating organizations that they send e-mails to each leading project manager of a specific urban project. In this way, we made sure we had one manager for each project. In total, 288 project leaders from the four municipalities and 57 project leaders from the two consulting firms were approached. Respondents were asked to fill in the survey for the specific urban project of which they were project leader. This means that data were collected for 141 projects, as 141 managers answered the survey. Table 1 describes the population and the response rate (40.9 per cent).

An issue with surveying a population like this is that a list of all urban projects in the Netherlands simply does not exist. We do believe that our approach has resulted in a representative response of project managers involved in urban projects in the four cities we studied. The cooperation with the local governments and the private firms resulted in an inclusive list of managers leading urban projects in these cities. The response rate of 41 per cent is more than average for an e-mail survey (Sheehan 2001). Based on the pretest of the survey with the panel of participants, the response rate, *and* the discussion with project managers in a post-survey seminar (open for all project managers in the four municipalities in which we discussed the results of the survey), we have good reasons to believe that the projects reported by the survey respondents are representative for the population of urban projects in the cities we studied.

The organizations involved actively participated in the survey in two ways. First, they organized the e-mailing to the project managers and encouraged them to participate in the survey. Second, we held three preparation sessions with eight project managers from the four participating cities to pretest the survey questionnaire. In these sessions, we discussed the relevance of the items and whether they understood all the survey questions. In this way, we were able to improve our questionnaire: we added some items and we changed the formulation of questions. In the next section, we present and discuss the items that we used to measure our core variables. These items are largely derived from the scientific literature, using existing scales.

5.2 *Characteristics of the networks around urban projects included in this study*

The urban projects can be described as complex projects developed within governance networks. The networks around the projects on which the managers reported mostly included more than ten organizations (66 per cent). Most of the networks included societal interest groups (94.3 per cent), private developers (78.6 per cent), architectural firms (79.4 per cent), housing associations (60.7 per cent), and different governmental organizations (other local governments, regional government, and national government).

We also checked whether the urban projects were really boundary-crossing public issues. We measured this by focusing on task complexity: how many and what kinds of development and/or spatial activities are included in the project (Klijn, Steijn, and Edelenbos 2010)? Consequent to the preparation sessions with the eight project managers, we asked about six different kinds of spatial activities/tasks: infrastructure (rail and public highways), water management, housing, social facilities (schools, sports facilities), development and/or regeneration of business areas, and development of city parks (cf. Klijn, Steijn, and Edelenbos 2010). Measured on a 5-point Likert scale, on average more than three of these tasks ($M = 3.76$) play a medium-to-large part in the projects, which confirms the boundary-crossing nature of the projects.

5.3 *Measurement of variables*

In this section, we discuss the different scales we used to measure our core variables facilitative management, executive support, boundary-spanning activity, trust, and governance network performance. Table 2 presents the specific items of the scales, their factor loadings, and the construct reliabilities. In the subsequent section, we discuss the convergent and discriminant validity of the measurement model.

5.3.1 *Facilitative management*

Although various literature examines facilitative dimensions of leaders or project managers, we could not find an existing scale measuring facilitative project management. In order to develop a reliable scale, we build on scales in the business literature measuring servant and facilitative leadership roles and literature discussing facilitative management behaviour. We used horizontal rating scales to measure more accurately what prevails in the management style: a facilitative or a non-facilitative management

Table 2. Measurement items and constructs' reliability.

Constructs and items	Factor loading	Corrected item-to-total correlations	Alpha/ Composite reliability
Facilitative management – 10-point rating scale. You are as manager in the execution of your task, focused at			
(1) preparing and organizing formal meetings with organizations (official meetings, public consultation) with organizations towards a focus on preparing and organizing informal meetings with organizations (joint work sessions, network meetings, drinks) (10) (R)	.61	.46	.65/.65 AVE: .38
(2) involving organizations' active involvement only in the part for which it is responsible towards a focus on involving organizations' active involvement in the development and decision-making about the project in its whole (10) (R)	.62	.48	
(3) restricting the opportunities/space for other organizations to develop initiatives within the project towards a focus on providing as much as possible opportunities/space for other organizations to develop initiatives within the project (10) (R)	.62	.45	
Executive support[a]			
(1) My principal is strongly committed to this project	.70	.58	.74/.76
(2) My principal succeeds in generating resources and attention to this project	.92	.69	AVE: .53
(3) My principal provides me room the manoeuvre (mandatory space) to execute the project	.51	.44	
Boundary-spanning activity[a]			
(1) In this project, there are many persons active who are able to build and maintain sustainable relationships with different organizations in the network	.70	.59	.84/.84 AVE: .52
(2) In this project, there are many persons active who have a feeling of what is important and what matters for other organizations in the network	.78	.71	
(3) In this project, there are many persons active who take care of a good information exchange between the network and their home organization	.79	.73	
(4) In this project, there are many persons active who make effective connections between developments in the network and internal work processes of their home organizations	.71	.66	
(5) In this project, there are many persons active who are able to mobilize their home organization in a timely manner in relation to developments in the network	.60	.54	
Governance network performance[a]			
(1) Do you think that innovative ideas have been developed during the project?	.58	.50	.76/.78 AVE: .42
(2) Do you think that different environmental functions have been connected sufficiently?	.67	.57	
(3) Do you think that the solutions that have been developed really deal with the problems at hand?	.72	.60	
(4) Do you think that the developed solutions are durable solutions for the future?	.66	.52	
(5) Do you think that – in general – the benefits exceed the costs of the cooperation process?	.59	.48	

(*Continued*)

Table2. (Continued).

Constructs and items	Factor loading	Corrected item-to-total correlations	Alpha/ Composite reliability
Trust[a]			
(1) The parties in this project generally live up to the agreements made with one another	.54	.49	.80/.80 AVE: .45
(2) The parties in this project give one another the benefit of the doubt	.67	.60	
(3) The parties in this project keep in mind the intentions of the other parties	.81	.69	
(4) Parties in this project can assume that the intentions of the other parties are good in principle	.64	.57	
(5) Parties in this project feel a good personal connection with one another	.68	.61	

[a]These items were measured on a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree.

style. Horizontal rating scales provide two opposite attitude positions and ask respondents to show where on the 10-point scale – in between two opposites – their own view falls (De Vaus 2013).

(1) *Facilitating relationship building*. A focus on formal/official meetings, such as public consultation meetings, official advise meetings, towards a focus on informal meetings and relationship building, such as network meetings, joint working sessions, drinks (building on Hirst and Mann 2004);
(2) *Integrative participation*. Involving organizations' active involvement only in the task/part for which it is responsible towards involving organizations' active involvement the development and decision-making about the whole/integral project (building on Sarin and McDermott 2003);
(3) *Empowering*. Restricting the opportunities/space for other organizations to develop initiatives within the project towards providing as much as possible opportunities/space for other organizations to develop initiatives within the project (Ebers and Maurer 2014; Teisman 2005).

5.3.2 *Executive support*

As no existing and proven scale for executive support exists, we build a new scale for this variable based on three indicators derived from the literature. For these three indicators, the respondents were asked to score the statement on a 5-point Likert scale ranging from strongly agree to strongly disagree.

(1) *Executive commitment*. Commitment is an important aspect in indicating the level of executive support to a project (Kerzner 1987; Stratman and Roth 2002). We used therefore the following statement: 'My principal is strongly committed to this project;'
(2) *Resources mobilization*. Executive support is also measured by the level the principal is able to generate and allocate resources (money, time, attention) to the project (Crawford et al. 2003; Kerzner 1987). We used this statement in our questionnaire: 'My principal succeeds in generating resources and attention to this project;'

(3) *Mandatory space*. Important aspect of executive support is the extent to which the executive provides room to manoeuvre for project managers and thus allowing them mandatory space in preparing and implementing the project (Lipsky 1984; Ebers and Maurer 2014). We used the following statement: 'My principal provides me room to maneuver (mandatory space) in executing the project.'

5.3.3 *Boundary-spanning activity*

We used our previously tested scale on measuring boundary-spanning activity in governance networks (Van Meerkerk and Edelenbos 2014). This scale consists of five items (see Table 2) distinguishing different boundary-spanning activities, such as good information exchange between the network and the home organization (e.g. Tushman and Scanlan 1981), building and maintenance of sustainable relationships between organizations in the network (Williams 2002; Klijn, Steijn, and Edelenbos 2010), and making effective connections between developments in the network and work processes in the home organization (cf. Steadman 1992). In the survey, we asked the respondents whether they thought there were many persons active in the network who show these kinds of activities.

5.3.4 *Performance of governance networks*

There has been much discussion in the governance literature on how to measure performance of governance networks. We want to stress that there is no particular best approach (e.g. Provan and Milward 2001). In urban governance networks, multiple stakeholders are involved which pursue different goals. Therefore, picking a specific goal of one of the nodes to measure network performance is not considered adequate (cf. Provan and Milward 2001). Measuring network performance is also problematic because policy processes in governance networks are lengthy and actors' goals are likely to change over time (Koppenjan and Klijn 2004). This problem is addressed in this article by using perceived network performance as a proxy for these outcomes and by using more than one criterion to measure them. From earlier research and the literature, five different dimensions to measure performance were distinguished (see Klijn, Steijn, and Edelenbos 2010): (1) the innovative character of the outcome; (2) the integrative aspect of the solution, that is, the way in which the plan represents different environmental functions (housing, recreation, and so on); (3) the problem-solving capacity of results, that is, the extent to which the solutions really address the problem; (4) the robustness of the results, that is, the future robustness (time frame) of the results; and (5) the relationship between the costs and benefits: the costs of the plan should not overrun the benefits of a project. The appropriateness of these criteria to measure performance was checked and confirmed by the panel of respondents participating in the pretest of the survey questionnaire. This approach of measuring network performance is still a proxy and can be improved in future research by further elaborating the five different dimensions and by including other data.

5.3.5 *Trust between actors in the governance network*

To measure trust within the network, we build strongly on the existing scale of Klijn, Edelenbos, and Steijn (2010), consisting of different dimensions derived from the

business literature, including the notions of agreement trust, benefit of the doubt, reliability, and goodwill trust. Because the project managers in the sessions to improve our questionnaire argued that for them an important additional element of trust is 'feeling a good connection with the other actors,' we improved the scale by adding this aspect of trust.

5.4 *Reliability and validity*

The measurement model was first examined for convergent and discriminant validity, based on confirmatory factor analyses. All factor loadings are larger than .50 (see Table 2), a very conservative cut-off level (Hair et al. 1995), which is a first important indicator demonstrating convergent validity. However, as the factor loadings of the (new) construct 'executive support' show quite some variation (ranging from .51 to .92), we examined the possible existence of a second latent factor (distinguishing different types of executive support). We ran various explorative factor analyses (solely on the three items of the scale and together with the other construct items of our model) but did not find a second or separate latent factor in our data. Moreover, the explorative factor scores are more in the same range, that is, varying between .70 (item on 'providing room') and .88 (item on 'generating resources'). As this could also be (partly) due to limited data on the principal – project manager relationship, further research might specify this scale.

Furthermore, the composite reliability indexes of the three scales all exceed the .60 threshold (Fornell and Larcker 1981). To further assesses the reliability of the measures, we computed corrected item-to-total correlations and Cronbach's alphas. All items had corrected item-to-total correlations that were greater than .40, which represents a general threshold (Field 2005). All Cronbach's alphas exceeded the widely accepted cut-off value of .70, accept the facilitative management scale (.65).

To establish discriminant validity, we compared the average variance extracted (AVE) with the squared inter-construct correlation estimates (SIC). The AVE of all five constructs is larger than the corresponding SICs, revealing the distinctiveness of each of the constructs and, thus, discriminant validity.

5.5 *Testing for general method bias*

The data collection process used in this study could induce a common-method bias, as the data are based on single informants and self-reported (Podsakoff and MacKenzie 2003). We therefore conducted two procedures and a statistical test to deal with this issue. Statistically, we used a Harman one-factor test to evaluate the extent to which common method variance was a concern (Podsakoff and MacKenzie 2003). A factor analysis was conducted on all twenty-one items used to measure the core variables covered by the hypotheses. No single factor accounted for the majority of the explained variance, that is, the first factor accounted for 28.5 per cent. Procedurally, we reduced the risk of socially desirable responses and/or to be lenient when crafting their responses by protecting respondent anonymity (Podsakoff and MacKenzie 2003). Moreover, we reduced item ambiguity by pretesting the survey among eight project managers from the four participating cities (Tourangeau, Rips, and Rasinski 2000). Although the above analysis and procedures do not totally rule out the possibility of same-source, self-report

biases, it does suggest that general method variance is probably not an adequate explanation for the findings obtained in this study (Podsakoff and Organ 1986).

5.6 *Control variables*

We selected four control variables to test whether the measured effects on our dependent variables are not caused by certain specific characteristics of the project or the reporting managers. With regard to the projects, we included two control variables in our analyses. Increased task complexity might increase the difficulty of realizing effective and efficient network performance (see Klijn, Steijn, and Edelenbos 2010; more information on this variable is reported at the beginning of this section). Second, we included the phase of the project as a control variable, as performance in terms of effective and durable solutions for spatial issues become more visible if projects are in a later phase of implementation. This is measured by the realized activities within the project, such as the development of the final project plan and the realization of the first physical constructions. In 81 per cent of the sample projects, a master plan has been developed and has been established by the city council, and in 40 per cent, the first physical constructions have been built. With regard to the reporting managers, we included the number of years the respondent has been involved in the project as the manager. This is a general check on whether the respondent has participated for a sufficiently substantive amount of time to actually be able to make experience-based judgements (M = 3.0 years, SD = 2.1 years). Furthermore, we included the general experience (measured in years) of the project manager with complex urban projects as a control variable. Although most project managers involved in this survey are relatively experienced in the management of urban projects (more than 13 years on average and a modus of 7 years), there are strong differences (standard deviation of 7.2 years).

6. Results

We used structural equation modelling (SEM) for conducting data analysis and to test the conceptual model.[4] This has several advantages compared to regression analysis (Byrne 2010). First, SEM allows simultaneous analysis of all the variables in the model instead of separately and it enables measurement of direct and indirect effects. Second, SEM has the capability to deal with latent variables, by using separate factor loadings for the observed indicators (the survey items), thereby incorporating both unobserved constructs and observed indicators in the model. Third, whereas traditional multivariate procedures are incapable of either assessing or correcting for measurement error, SEM provides explicit estimates of these error variance parameters, thereby improving the accuracy of the data analysis (Byrne 2010).

Table 3 presents means, standard deviations, and correlations for all model constructs and control variables. The mean scores on facilitative management, boundary-spanning activity, and trust are around the mid-range of the scales indicating that managers generally perceive a moderate presence of these constructs. The mean scores on executive support and network performance are somewhat above the mid-range, indicating that executive support and network performance are generally perceived as relatively high.[5]

Table 3. Means, standard deviations, and correlations for all model constructs and control variables.

	Mean	SD	Facil. manag.	Exec. sup.	BSA	Networkperfor.	Trust	Task compl.	Project phase	Years of exper.	Years of involv.
Facilitative management (1–10)	5.20	1.60	1								
Executive support (1–5)	3.96	.74	.170*	1							
Boundary-spanning activity (1–5)	3.37	.67	.329**	.265**	1						
Network performance (1–5)	3.73	.58	.263**	.163	.412**	1					
Trust (1–5)	3.34	.64	.225**	.196*	.551**	.376**	1				
Task complex.	3.16	.83	.215*	.012	.171*	.127	.177*	1			
Project phase (1–6)	3.21	1.34	−.109	.145	.211*	.147	.223**	.136	1		
Years of experience	13.01	7.23	.191*	.027	−.003	.059	.096	.107	.035	1	
Years of involvement	2.99	2.12	.006	.027	.129	.084	.091	.187*	.280**	.193*	1

**$p < 0.01$; *$p < 0.05$.
N is in between 133 and 141 (pairwise deletion of missing values).

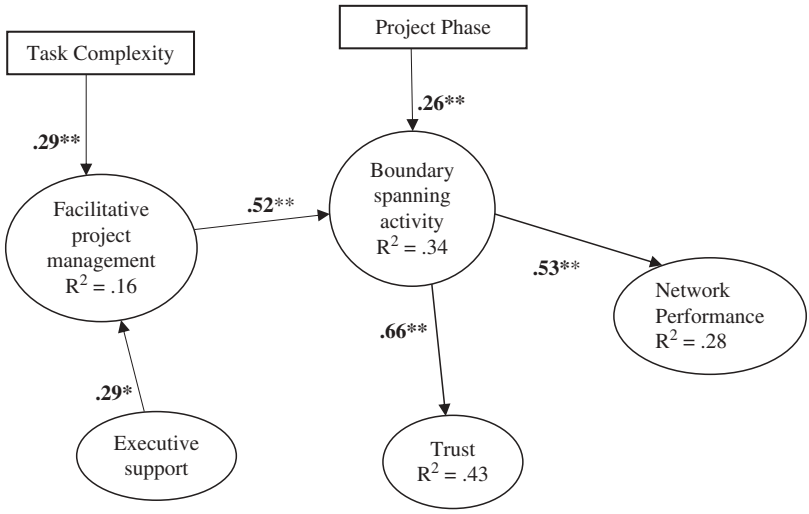

Figure 2. Structural model.

Notes: Standardized regression coefficients are reported. **p < 0.01; *p < 0.05. Function estimate means and intercepts used to deal with some missing values.

Figure 2 shows the results of the structural model tests. Control variables were also regressed on all variables in the model. The presented model had the best fit. The overall fit of the measurement model was tested by the following fit indices, which resulted in CMIN/DF = 1.31, CFI = .92, RMSEA = .048, and PCLOSE = .59. These values indicate a good fit of the measurement model with the data (Byrne 2010).

The significant relationships ($p < .05$) are presented (the standardized regression coefficients are reported) and the explained variance is noted in the boxes. First, H1 and H2 are confirmed in this model. Facilitative project management (H1) significantly impact upon boundary-spanning behaviour and has a moderate-to-strong effect with a standardized regression coefficient of .52 ($p < .001$). Executive support positively impacts upon facilitative management (H2) with a standardized regression coefficient of .29 ($p < .05$). H3 cannot be confirmed, as the relationship between executive support and boundary-spanning behaviour is not found to be significant. Executive support seems to impact upon boundary-spanning behaviour via facilitative management (see below).

In line with previous findings (Van Meerkerk and Edelenbos 2014), boundary-spanning behaviour significantly impact upon network performance and trust (H4 and H5). The relationships are moderate to strong, with standardized effects of .54 and .67 ($p < .001$), respectively. H6 cannot be confirmed, as the relationship between trust and network performance is just above the significance level ($\beta = .25$, $p = .09$). However, these findings do indicate a relationship as found in previous research (e.g. Klijn, Edelenbos, and Steijn 2010).

6.1 *Indirect effects*

We subsequently tested the indirect effects of executive support on boundary-spanning behaviour and of facilitative management on network performance and trust by performing the bias-corrected bootstrap method as described by Shrout and Bolger

(2002). We requested 2000 bootstrap samples and found all indirect effects to be significant. Hence, instead of directly effecting boundary-spanning behaviour, executive support indirectly affects boundary-spanning behaviour via facilitative management. The standardized indirect effect is .15. The standardized indirect effect of facilitative management on governance network performance is .28 ($p < .05$) and that of facilitative management on trust is .34 ($p < .01$).

6.2 *Control variables*

We omitted the control variables that had no significant effects on the dependent variables. These were the controls on the respondent (years of involvement, years of experience). The project phase showed a significant relationship with boundary-spanning activity and task complexity with facilitative management. Urban governance projects which are in an implementation phase require more boundary-spanning activity ($\beta = .26$, $p < 0.01$), as in this phase (urban development), projects become more concrete and demand more activities of different actors and organizations and therefore indicate more need to span various organizational boundaries. Furthermore, increased task complexity requires a more facilitative management style ($\beta = .29$, $p < 0.01$) in which actors get more room for participation and in which more (informal) interaction becomes important.

7. Discussion and conclusions

Boundary spanning in governance networks has not been much contextualized in previous research, which brought us to wonder which facilitating factors are impacting upon boundary-spanning activity and subsequently on network performance. We developed and underpinned a theoretical model which was tested by SEM. In this section, we discuss the findings and draw several conclusions from our study.

The present study is obviously not without limitations. Our study is based on perceptual measures coming from leading project managers. Although we tried to minimize the risks of common method bias with the methods as discussed, we have to be careful in making generalizations. Next, our data are cross-sectional and causal inferences concerning the relationships in our structural model are based on theory. Longitudinal and multiple source data on networks could provide more evidence on the feedback mechanisms between facilitating conditions, boundary-spanning behaviour, and the development of trust and performance in governance networks. Furthermore, this study has focused on specific kinds of governance networks; all the networks studied were in the field of urban development and restructuring. These results cannot automatically be assumed to hold also for other types of public projects or policy domains, such as (social) service delivery networks (Meier and O'Toole 2007). Further research involving samples from other sectors and in other countries is needed to fully validate our results. Despite these constraints, we believe that our research has provided interesting empirical insights, building blocks, and discussion points for further theory development.

Our first conclusion is that facilitative management is an important stimulating condition for triggering boundary-spanning activity in governance networks. A facilitative project management style, which accepts and not reduces the complexity of stakeholder environments, is focused on (informal) relationship building and looks for ways to empower the stakeholder environment in defining, preparing, and implementing the project, evokes boundary-spanning activity of network actors from these stakeholder

environments. This finding adds to the literature on boundary spanning in governance networks. Previous research has indicated the importance of personal characteristics, competences, and personal networks as antecedents of boundary-spanning activity (Brion et al. 2012; Tushman and Scanlan 1981; Williams 2002). In this research, we have shown the importance of other actor's behaviour, that is, the project management style in triggering boundary-spanning behaviour. Realizing integrative participation and empowering boundary spanning persons in governance networks by providing them more discretionary space in the shaping and negotiation of urban projects can trigger more boundary-spanning activities. Investing in informal, face-to-face meetings (next to formal meetings) can further facilitate this process. Interestingly, the style of project management relates to boundary behaviour of network actors. This indicates the importance of behavioural attitudes of (project) managers in relation to the emergence and behaviour of other boundary role persons in governance networks. This confirms recent pleas in public administration to draw more on insights from psychology on the behaviour of individuals and groups to advance our understanding, in particular regarding the behaviour of public officials and citizens (Grimmelikhuijsen et al. 2017). A next step in future research in this respect would be to confirm and extent the results of this study by conducting experimental studies on boundary-spanning behaviour: examining the effects of various organizational and personal conditions on the willingness and attitude of boundary role persons (including the behavioural attitude of other network actors). In this respect, we can build more on organizational literature on boundary spanning developed by social-psychologists using role theory (cf. Johnson and Duxbury 2010) to further develop boundary-spanning theory in the context of governance networks.

Our second conclusion is that executive support is important for fostering a facilitative management style. A principal who is committed but gives room for project managers to enact a facilitative and open management style in this respect indirectly contributes to a context in which boundary-spanning activity of network actors is more likely to emerge. Hence, we found the relationship between executive support and boundary-spanning activity to be indirect. We did not find a (significant) direct effect of executive support on boundary-spanning activity. An explanation could be the rather less constant involvement of executives as compared to (daily) project managers. Project managers have contacts with (potential) boundary spanners in the network that are more frequent and more direct than executives do, which likely explain their direct influence on boundary-spanning activity. It seems that when executives want to stimulate boundary-spanning activity, it is important that they stimulate a facilitative project management style and show commitment by providing room and support for project managers. An avenue for further research is to specify the measurement and impact of different types of executive support. Although the items of the developed scale in this study substantially loaded on the same factor and formed a reliable scale, the factor loadings showed quite some variation. A more sophisticated distinction between different types of executive support and/or styles, such as providing room for project managers, being responsive and gaining resources for the project, is recommendable.

Our third conclusion is that boundary spanning can be considered important in reaching network performance. This confirms previous research and literature (Steadman 1992; Van Meerkerk and Edelenbos 2014; cf. Klijn, Steijn, and Edelenbos 2010; Brion et al. 2012). Moreover, boundary spanning is also an important explanatory factor for trust building. Boundary spanners work across organization structures and show empathy and interest in motives, interests, and perspectives of other actors in the

network and, in this way, develop trustworthy relationships with these actors (Williams 2002; Edelenbos and van Meerkerk 2015). Facilitative management indirectly contributes to network performance via its effect on boundary-spanning behaviour. This finding adds to the literature and debates on network management and gives more detailed information how mechanisms work in governance networks. Next to the direct effects of management strategies (Klijn, Steijn, and Edelenbos 2010; Meier and O'Toole 2007), this study found indirect effects of a facilitative management style to network performance and trust building in governance networks (cf. Ysa, Sierra, and Esteve 2014). This result shows parallels with organizational research on facilitative leadership and team performance (Pirola-Merlo et al. 2002), leading to further development of network management literature. More research can be done in which insights from organizational studies on team leadership and governance network theory are combined.

Notes

1. A search in the database Scopus shows a rise in publications, especially in the last 10 years, which make use of the concept: 9 publications using the term 'boundary spanning' or 'boundary spanner' in title or abstract in 2000, 46 publications in 2006, 86 publications in 2010, and over 120 publications in 2014 (i.e. 124).
2. We want to stress that we focus on 'boundary spanners in practice' (Levina and Vaast 2005) or 'competent boundary spanners' (Williams 2002). That is, individuals *practicing* high boundary-spanning activity, rather than people whose official organizational function is that of a boundary spanner (irrespective how they actually engage in boundary-spanning practices), also called 'officially nominated boundary spanners' (Levina and Vaast 2005).
3. These four cities are relatively the largest cities in The Netherlands. Amsterdam has 783,000 inhabitants, Rotterdam 611,000, The Hague 497,000, and Utrecht 313,000. The fifth city, Eindhoven, has 214,000 inhabitants, which is substantially lower.
4. We used AMOS Version 22.0.
5. This might indicate the presence of some self-evaluation bias, as the managers play an important role in the projects. On the one hand, this is a limitation of our sampling strategy and is something that we cannot totally rule out. On the other hand, we argue that this issue is not that problematic for our structural model. First of all, if some self-evaluation bias is present, this holds for all respondents. Hence, although it might has an effect on the absolute values attached to these items, it likely does not have an effect on the overall variation, neither for the relationships between the variables of our model. Second, studies to network performance on complex water projects, including both managers and other participants (stakeholders) as survey respondents, show comparable scores and no significant differences between types of respondents in their rating of performance of these projects (see e.g. Klijn, Steijn, and Edelenbos 2010).

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No potential conflict of interest was reported by the authors.

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