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Managerial networking and school performance in Dutch primary education: the moderating effect of job-related attitudes

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Citation

Langenberg, S. (2023). *Managerial networking and school performance in Dutch primary education: the moderating effect of job-related attitudes*.

Version: Not Applicable (or Unknown)

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Managerial networking and school performance in Dutch primary education: the moderating effect of job-related attitudes

Master thesis
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Words: 16.239
Date: 6.1.2023

Abstract

Existing research has shown that managerial networking can positively affect organizational performance. Moreover, it has pointed out contextual variables, concerned with the characteristics of an organization (or its environment) as a whole, that may impact this relationship. However, individual characteristics of public managers have been overlooked. This study examines the moderating effect of public managers' job-related attitudes – specifically work autonomy, work engagement, and work commitment – on the relationship between managerial networking and organizational performance. Given the positive effects of job-related attitudes according to the existing literature, I argued that these three variables can strengthen the positive effect of managerial networking on performance. The study is conducted in the research context of Dutch primary education, investigating the networking behavior of school principals. Using a pre-existing data set of 862 school principals, obtained through a survey sent to all primary schools in the Netherlands in 2013, I tested my hypotheses through multiple regression analysis. Results revealed that in this research context, only work commitment significantly strengthened the relationship between managerial networking and school performance. To obtain a more comprehensive picture of the exact working of the proposed effects in this study, I recommend that future research includes additional variables in the analysis, such as other performance indicators, and internal management, and performs longitudinal research.

Keywords

Managerial networking; public performance; primary education; work autonomy; work engagement; work commitment.

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1. Introduction

The interest of scholars in the performance of public organizations has significantly increased over the last decades. Especially the role of public management has received considerable attention (e.g. Andrews et al., 2006; Meier et al., 2007; O'Toole & Meier, 1999). When addressing public management, one often thinks about the internal management of the organization, that is, motivating staff, managing human resources, directing a team, and handling the budget and other resources (O'Toole & Meier, 2011, p. 55). However, also the external side of management has been recognized to be an important contributor to public performance, especially because "contemporary governance arrangements typically enmesh the actions and objectives of specific public organizations in a web of relations with other actors" (O'Toole & Meier, 2011, p. 55). Because of these linkages with other organizations within networked settings, the performance of public organizations is dependent on the developments in their external environment. Maintaining relationships with these external actors and organizations is also called managerial networking. This study aims to further the understanding of managerial networking in the context of Dutch primary education and particularly focuses on its effect on organizational performance.

To explain and assess public organizational performance, O'Toole and Meier (1999; 2001) developed a model, which presents performance as a product of past performance, organizational stability, environmental shocks, internal management, and external management. This thesis specifically focuses on the relationship between external management (here conceptualized as managerial networking) and performance. Many scholars reported a positive relationship. For example, Nicholson-Crotty and O'Toole (2004) found that external management activities of police chiefs in municipal police departments in the United States positively affect clearance and arrest rates. Moreover, Torenvlied and Akkerman (2011) found that nurse colleges in the Netherlands with a more ambitious network management strategy have better diploma rates and lower dropout rates. I expect that in the context of the current study, the relationship between managerial networking and performance will also be positive because school principals may gain access to (additional) financial resources, information about education programs, and (political) support from their external environment; they are held accountable for their schools' results by the Ministry of Education, leading to a pressure to perform well; and they receive guidance from actors from the external environment (e.g. Inspectorate of Education) on how to attain these results.

Although many scholars have tested (parts of) the model, the positive effect of external management on performance – taking into account the other factors of the model – did not seem to be parsimonious across different research settings and contexts. It is therefore that O’Toole and Meier (2015) also underlined the importance of context: they argued that a given context may change the relationship between management and performance. For example, in a comparison between schools in the district of Texas (U.S.) and Denmark, Meier et al. (2015) found that the effect of managerial networking on performance is dependent on the type of school system. Several authors incorporated different contextual variables, such as political, environmental, internal, and institutional contexts, into analyses of managerial networking and performance (e.g. Andrews et al., 2011). In addition to these contextual variables, other variables that could determine the effect of managerial networking have been examined, such as the size of an organization’s administrative staff and the use of management tools (Hicklin et al., 2007; Hansen & Villadsen, 2013).

Those contextual variables are mostly concerned with the characteristics of an organization (or its environment) as a whole. Far less research has been conducted on the possible influence of individual characteristics of managers in the context of managerial networking and performance. Hansen and Villadsen (2013) examined the moderating effects of managers’ characteristics on the relationship between managerial networking and organizational performance in the research context of Danish municipalities and found that a higher educational degree, experience in the private sector, tenure, and general management experience may strengthen the effect of a manager’s managerial networking activities on the performance of the organization. However, no study has yet analyzed the effect of job-related attitudes of public managers – how they perceive their work and feel towards it – on this relationship. This study will therefore focus on the moderating effects of three specific job-related attitudes – work autonomy, work engagement, and work commitment – on the relationship between managerial networking and organizational performance in the context of Dutch primary education. Thus, I aim to build upon the existing literature on context and determinants of managerial networking to identify which other contextual variables have an impact.

Understanding the effects of a manager’s job-related attitudes may reveal under which conditions managerial networking may lead to better school performance. As organizational psychologists have often pointed out, employees that have positive experiences at work and perceive their job in a positive way are beneficial for organizations, as they put more effort into

their job, are more satisfied with their job, and perform better (Ghazzawi, 2008; Bakker & Schaufeli, 2008). Also, employees who have positive job-related attitudes toward work are more intrinsically motivated, especially in the public sector (Dur & Zoutenbier, 2015). I also expect a positive effect of these job-related attitudes in the current research context. Therefore, in this thesis, I aim to address the gap in the literature by answering the following research question: *“To what extent do work autonomy, work engagement, and work commitment moderate the relationship between school principals’ managerial networking activities and school performance in Dutch primary education?”* I thereby argue that job-related attitudes are moderators; that is, they strengthen the relationship between managerial networking and school performance. More specifically, I expect that the effect of work autonomy will be positive because school principals that are autonomous in their work are better able to identify opportunities for strategic action and make choices on where to invest their time and resources. Therefore, the effect of their managerial networking activities on school performance will be reinforced. Additionally, I expect that the effect of work engagement will be positive because highly engaged school principals will be more motivated, productive, and creative. Accordingly, the effect of their managerial networking activities on school performance will be strengthened. Finally, I expect that the effect of work commitment will be positive because school principals with high commitment to the school feel more intrinsically motivated to contribute to organizational success. As such, their managerial networking activities will have a larger (positive) effect on school performance.

With this study, I hope to make a relevant contribution to the academic field of public management. In general, I believe that replicating earlier studies on the relationship between managerial networking and organizational performance will further the current understanding of the concept of managerial networking. Moreover, I explained earlier how there is a gap in the literature regarding the more individual context of managerial networking behavior of public managers and especially with regard to how individual managers perceive their work and the effect of this on the effect of their managerial networking activities on organizational performance. I believe that this thesis can fill this gap by shedding a light on work autonomy, work engagement, and work commitment as job-related attitudes and their impact on the aforementioned relationship. I also believe that this study could contribute more practically by identifying the conditions under which organizational performance can be improved and what, in this case, school boards could do to contribute to this by hiring highly autonomous, engaged, and committed principals.

I test the hypotheses on a pre-existing data set of 862 school principals, obtained through a survey sent to all primary schools in the Netherlands in 2013. The survey included a list of possible external organizations and actors (based on previous research) to measure managerial networking. Respondents could indicate how frequently they interacted with those organizations and actors. In addition, the survey included measures of work autonomy, work engagement, and work commitment, based on valid instruments designed by respectively Breugh (1989), Schaufeli et al. (2006), and Allen and Meyer (1990). Independently from the survey, another data set was added, including the average CITO test scores of the schools whose school principals filled out the survey (the data was matched by the so-called “BRIN” number, a unique identification number of each school). The CITO test scores were used as the measure of school performance. Moreover, the school principal’s age, experience as a school leader, and level of completed education were measured. A hierarchical regression analysis is conducted to test the hypotheses, holding constant age, experience, and education as possible confounding factors.

The outline of this thesis looks as follows. The next chapter will provide a brief overview of the research context in which this study is situated. It will explain the Dutch education system, the responsibilities of school principals, the performance indicators used by the Dutch Ministry of Education, Culture, and Science to assess schools, and the external environment of schools. The third chapter will cover the theoretical framework. It will introduce the concept of managerial networking and explain its relation to organizational performance, culminating in hypothesis 1. Moreover, the job-related attitudes central to this study, work autonomy, work engagement, and work commitment are introduced, as well as the proposed theoretical mechanisms through which they have an effect, culminating in hypotheses 2, 3, and 4. The fourth chapter will outline the research design of this thesis, explaining the method of data collection and describing the operationalization of variables. The fifth chapter contains the data analysis. In the concluding chapter, I will discuss this study’s results, implications, validity and reliability, and limitations, and provide several recommendations for future research.

2. Research context: Dutch primary education

This chapter elaborates on the research context of this thesis and precedes the theory chapter so that the latter can also highlight the theoretical developments regarding this specific context. This study is conducted in the context of Dutch primary education. There were 6742 (regular) primary schools in the Netherlands in 2013, educating around 1.5 million students (Dutch Ministry of Education, Culture, and Science, 2013). Primary education is intended for pupils aged between four and twelve. Children with learning difficulties, for example through a disability, chronic illness, or behavioral problems, can attend special education, which is separated from regular primary education. Most Dutch primary schools are public, meaning that they are dependent on national government funding. Private schools are highly uncommon; however, primary schools may vary in their educational philosophy and denomination; this is because all Dutch citizens are allowed to establish a primary school after the principle of “freedom of education” under the Dutch Constitution (Torenvlied & Akkerman, 2012). All primary schools are subject to Dutch Education law, which is partly coordinated by the Dutch Ministry of Education, Culture, and Science, and partly by the local governments through the municipal department of education. After the final year of primary school, students (then aged 12) go to secondary education. Whereas the length and level of education are aligned across all primary schools, secondary schools differ in regard to this: they range from vocational to pre-university education, and take four, five, or six years. The choice of secondary education depends on the student’s results in primary school (especially on the standardized test they take in their final year) and the advice of the primary school’s teachers on this (Nuffic, n.d.). Students that attended special primary education are likely to continue with special secondary education.

The Dutch Education Council (Dutch: Onderwijsraad, 2013) – the independent institution that provides advice to the Dutch government about education – stated that Dutch primary schools have two responsibilities. First is the responsibility to qualify pupils for their future by promoting cognitive skills in language and arithmetic. Second is the responsibility to socialize pupils by contributing to their social development. All primary schools are governed by a school board, that is formally responsible for the internal affairs of the school (Van den Bekerom, 2016; Turkenburg, 2008). Most of the board members are parents of (ex)pupils, but also education experts are represented (Van de Venne & van Wieringen, 2002). However, the school board delegates authority to the school principal to facilitate smooth day-to-day management. This means that

school principals must make the two responsibilities – qualification and socialization – explicit in concrete educational programs. Moreover, as Torenvlied and Akkerman (2012, p. 448) pointed out, their daily tasks consist of coaching and guiding teachers, developing plans for pedagogical quality, student care, and quality control, and monitoring pupil performance. Additionally, school principals are responsible for administrative duties and human resource management. Finally, school principals are the main representative of the school in its external environment.

The external environment of a primary school consists of different actors and/or organizations. Van den Bekerom (2016) identified five categories: national government organizations, local government organizations, interest organizations in the labor relations domain, youth care organizations, and coproduction actors. The school principal maintains relationships with these organizations for different purposes. First, the national government organizations are involved in setting the general quality standards that primary schools need to adhere to. The Dutch Ministry of Education, Culture, and Science develops educational policy in which standards are embedded for various performance indicators (Dutch Ministry of Education, Culture, and Science, 2022). Compliance with these standards is monitored by the Dutch Inspectorate of Education (Dutch: Onderwijsinspectie), an autonomous government organization. Moreover, the Education Executive Agency (Dutch: Dienst Uitvoering Onderwijs; DUO) is responsible for budgeting and finance and therefore monitors the financial performance of primary schools (DUO, n.d.). Finally, test suppliers are the corporate organizations that design, administer, and check the standardized tests used for the final-year assessment of students in primary schools (Torenvlied & Akkerman, 2012). Although test suppliers are not government organizations, they interact with primary schools on a national level and provide them with information about their student's achievements. Second, local government organizations are also important because some policy tasks and budgets are decentralized from the national to the local level. As such, the municipal department of education is (partly) responsible for coordinating and implementing education policy. Moreover, the aldermen are the chief administrators of the local government, and the members of the city council are the political representatives. Well-established relations with them can contribute to local political support for the school and subsidies for school projects (Torenvlied & Akkerman, 2012). Third, based on Torenvlied and Akkerman (2012) and Franssen et al. (2010), Van den Bekerom (2016) stated that interest organizations in the labor relations domain also form important actors in the external environment of a school. Labor unions represent teachers at the bargaining

table and negotiate employment agreements with employer organizations. These agreements form the basis for personnel policies at school. Moreover, the school boards are represented by the Primary Education Council (Dutch: PO-Raad). Fourth, youth care organizations are local organizations that provide youth care and child protection. For example, Van den Bekerom (2016) pointed out that these organizations create prevention programs and support schools with “broader” problems with regard to their pupils, such as behavioral problems or child abuse. This set of organizations consists of the school attendance officer, regional youth care, the police, and the municipal youth service. Finally, Van den Bekerom (2016) identified several actors that are considered coproducers of the public service of education. Examples are parents, teachers, other schools, and advisory committees (with both parents and staff). This thesis will only take into account the external organizations of the national government, local government, and youth care organizations due to the pre-existing data set used.

Following Van den Bekerom (2016), the performance of primary schools is assessed by the Dutch Inspectorate of Education. Therefore, it yearly conducts a performance and risk analysis of all primary schools. This analysis does not solely focus on students’ results, but also on broader developments, such as the cognitive development of students, the level of social security, (alarming) signals from teachers, parents, or students, and the yearly change in student numbers at the school. School results are assessed based on “pupil weights”: categories that are based on students’ characteristics such as the educational level of their parents, their country of origin, and whether their parents are in a debt rescheduling program. The average outcomes of the standardized tests that all students take in their final year of primary school are thereby most prominent. Although there are different types of tests, the “CITO” test (called after the institution that supplies and administers the test) is the most widely used. Based on the performance and risk analysis, the Inspectorate decides whether a school requires further attention or research, for example through an inspection at the school or a conversation with the school board. The Inspectorate always publishes a report with their findings on the Internet, which makes their evaluations public. If schools fail to comply with the quality standards, they can be subjected to a supervision regime or may ultimately lose their funding (Van den Bekerom, 2016; Dutch Ministry of Education, Culture, and Science, 2022).

3. Theoretical framework

This chapter outlines the theoretical framework for this thesis. The first section defines the concept of managerial networking, explains its use and relation to the organizational environment, and presents the perspective on networks taken in this thesis. Second, the debate on managerial networking and organizational performance is summarized and hypothesis 1 is presented. Third, the role of context in the relationship between managerial networking and organizational performance is discussed. The fourth, fifth, and sixth sections explain the potential moderating effects of respectively work autonomy, work engagement, and work commitment on the relationship between managerial networking and school performance, culminating in hypotheses 2, 3, and 4.

3.1. Managerial networking & networks

In the public management literature, the term managerial networking is used to describe the interactions of public managers with several actors and organizations in their organizational environment (O'Toole & Meier, 1999). As such, managerial networking has a relational component and covers both the scope and the intensity of these relations (Van den Bekerom, 2016). Whereas some authors only underline the relations with external actors and organizations – for example, Torenvlied and Akkerman (2014) define managerial networking as “the contact frequency of relations that (high-ranking) managers maintain with external actors and organizations, for example, suppliers, stakeholders, clients, alliance partners, regulatory agencies, or political actors and institutions” (p. 845) – other scholars (e.g. Van den Bekerom, 2016) also take into account internal actors and organizations, as those are also considered part of the organizational environment of the public organization.

The organizational environment, that is, the actors, organizations, and events that may influence the activities or outcomes of a public organization, has been argued to be a decisive factor in the performance of public organizations (e.g. Lynn et al., 2000). This environment can be split into the internal environment and the external environment (Davidson & Griffin, 2006), both requiring management. Rainey (2009) argued that the influence of the external environment may be apparent in technological, legal, political, economic, demographic, ecological, or cultural sectors, or “conditions”, as he called them. Every organization depends on its external environment for survival, which is even more true for public organizations because they are often more prone

to environmental pressures, rely upon public financing, and are subject to directions, interventions, and control from political actors (Rainey, 2009).

The external organizational environment impacts an organization's activities in two ways. First, the environment can provide resources, e.g. materials, money, people, support, technology, or knowledge (Rainey, 2009), that the organization can use for its products or services to generate better outcomes (Scott, 2006; Boyd, 1990), and second, the environment can impose constraints that may inhibit organizational performance, such as legal requirements, social expectations, and technological developments (Van den Bekerom, 2016). Scott (2006) underlined that regulating these impacts of the external environment is an important challenge for managers of public organizations. This is especially the case, Boyne and Meier (2009) argued, because environments may change in unpredictable ways, as "physical, technological, social, and economic circumstances may all shift rapidly and unexpectedly, and place new constraints on the activities and achievements of public managers" (p. 799). They called these unpredictable changes in the environment "environmental turbulence". To deal with environmental turbulence, public managers must attempt to stabilize the flow of resources and constraints as much as possible. It is therefore that public managers must manage the external environment in such a way that the organization can perform and generate the desired outcomes and that the uncertain impact of the environment is reduced. To manage the external environment, they need to network with external organizations and actors, such as government entities, not-for-profit organizations, and interest groups, also called managerial networking (O'Toole & Meier, 1999; Van den Bekerom, 2016).

Although many scholars underlined the relevance of such external management activities for organizational performance, internal management activities (aimed at the internal environment) have also been considered in this regard (O'Toole & Meier, 1999). Van den Bekerom (2016, p. 20) argued that internal management, that is, coordinating people, technologies, and organizational structure, contributes to organizational stability because this is needed to transform environmental inputs into outputs. Internal management activities may then be directed at actors "within a common hierarchy", that is, the board, subordinates, and co-producers of an organization (Van den Bekerom, 2016, p. 20; also O'Toole et al., 2014). In the broadest sense, managerial networking could thus entail both external and internal management activities as both deal with the two parts of the organizational environment, as noted earlier. However, the theoretical mechanisms that explain the relationship between organizational performance and managerial networking in either

the internal or external environment are different (Van den Bekerom, 2016). This thesis focuses on external management activities because most of the existing research has examined the relationship between external management and organizational performance (this is explained in more detail in the next section). As such, the aforementioned definition of managerial networking by Torenvlied and Akkerman (2014), solely emphasizing the external component of managerial networking, is the working definition for this thesis.

Managerial networking occurs within networks, generally defined by O'Toole (1997, p. 45) as "structures of interdependence involving multiple organizations or parts thereof, in which one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement". O'Toole stressed that networks are not always formally established linkages; rather, they are linked through "authority bonds", "exchange relations", or "a coalition based on a common interest" (p. 45). There are two perspectives one can take on networks. Kilduff and Tsai (2003) distinguished between whole networks and ego networks. Whole networks are also referred to as inter-organizational networks and can be created by public programs or by public managers to achieve a specific goal. Scholars studying whole networks are concerned with outcomes on the network level (e.g. effectiveness of these networks for the implementation of public policy) rather than for each individual network member (e.g. Provan & Milward, 2001; Agranoff & McGuire, 2003; Provan & Lemaire, 2012). In contrast, scholars following the ego network approach center the focal organization in their examinations of networks (Torenvlied & Akkerman, 2014). As such, these studies explore the networking behavior of individual managers in public organizations, focusing on the dyadic relations with actors and organizations in the organizational environment (e.g. Leana & Pil, 2006; Meier & O'Toole, 2003; O'Toole & Meier, 1999). Managers act in the interest of their organization rather than that they pursue a common (network-level) goal. This thesis takes the ego-centered approach to networks, as it focuses on the networking behavior of school principals in their networks.

This thesis builds on the existing research on the relationship between managerial networking and organizational performance by explaining how three factors – work commitment, work engagement, and work autonomy – influence this relationship. The next section of this chapter outlines the literature on managerial networking and organizational performance, after which the three moderator variables are explained in more detail.

3.2. Managerial networking and organizational performance

Public organizational performance is often explained through the model of O'Toole and Meier (1999; 2001). This model presents performance as a product of past performance, organizational stability, environmental "shocks" (earlier referred to as turbulence), internal management, and external management. Although this general model assumes that organizational performance is dependent on a wide array of factors, this thesis particularly focuses on the relationship between organizational performance and external management. However, the model and its components provide a relevant theoretical basis to which the findings of this thesis can contribute, which is why all factors are also shortly explained.

O'Toole and Meier (1999; 2001) argued that current performance is heavily influenced by past performance. Organizational stability taps the features of an organization that ensure administrative stability. This can be seen along different dimensions, such as structural stability, production or technology stability, procedural stability, and personnel stability. Environmental shocks, the third factor of the model, can originate from different forces in the external environment, such as a change in program priorities by political actors, decreased funding, or developments in the economic and social environment. This is comparable to what was earlier called "environmental turbulence". Moreover, O'Toole and Meier assumed that internal and external management activities promote organizational performance. They argued that internal management activities are aimed at maintaining organizational stability, through human resource management and effective decision-making, and as such contribute to performance (p. 132). In 2009, they found that the schools of superintendents in the Texas district, who invested in human resource management, indeed not only received higher pass rates on the statewide exam but also had higher student attendance and lower dropouts.

Furthermore, external management activities, that is, a public manager's interactions with external actors and organizations (in this study conceptualized as managerial networking), promote organizational performance because of two reasons, according to O'Toole and Meier (1999; 2001). First, managerial networking strategies can be aimed at buffering the environment. Buffering means that special units or processes are established to protect the organization against environmental shocks. Buffers can function as a "barricade or wall", which prevents smaller shocks, as a "filter", which only let in essential issues or stakeholders, or as a "dampener", which can reduce the impact of environmental shocks (O'Toole & Meier, 2011). For example, Meier and

O'Toole (2008) tested this relationship and found that a greater buffering-as-dampening strategy of school district superintendents in Texas was associated with higher student scores. Second, managerial networking strategies can be aimed at exploiting the environment. This means that managers attempt to tap resources, such as financial resources, technology, support, or information, from the environment to enhance performance (O'Toole & Meier, 1999; 2001; Aiken & Hage, 1968). For example, Meier and O'Toole (2003) tested the relationship between exploiting the environment and school performance and found that tapping community support and parental involvement positively contributes to school performance. This is also related to resource-dependence theory, which opts for resource procurement for the future to reduce dependency on others (Pfeffer & Salancik, 2003). As such, managerial networking can be a highly strategic effort.

Although the model of O'Toole and Meier assumes that performance is dependent on several factors (past performance, organizational stability, environmental shocks, internal management, and external management), this thesis only focuses on the relationship between managerial networking and organizational performance. Many scholars found support for the hypothesis that management directly influences performance (e.g. Meier & O'Toole, 2001; 2003; 2008; O'Toole & Meier, 2003; 2004; Meier et al., 2007). For example, Nicholson-Crotty and O'Toole (2004) found that external management activities of police chiefs in municipal police departments in the United States positively affect clearance and arrest rates. Moreover, Torenvlied and Akkerman (2011) found that nurse colleges in the Netherlands with a more ambitious network management strategy, i.e. maintaining relationships with a diverse set of external actors for both short- and long-term purposes, have better diploma rates and lower dropout rates.

I expect that in the Dutch primary education sector, this relationship will also be positive. Based on Meier and O'Toole (2003), I assume that through managerial networking, school principals may gain access to (additional) financial resources from the national or local government, information about (future) education programs from the Ministry of Education, Culture, and Science, or political support from the municipal department of education or aldermen. Additionally, school principals may maintain relationships with external actors like the Ministry and municipal department of education that demand "results-based accountability" (Moynihan & Hawes, 2012, p. 598); school principals are held accountable for the results of their school, which leads to a pressure to perform well (also Van den Bekerom, 2016). This will have a positive impact on school performance. Moreover, based on Van den Bekerom (2016), I expect school principals

to interact with the organizations that set the performance criteria for schools and students (e.g. Ministry of Education) and provide guidance on the attainment of these criteria (e.g. Dutch Inspectorate of Education), which could also lead to better school results. Therefore, I assume that the managerial networking activities of school principals will have a positive effect on school performance. Thus, this study aims to (partly) replicate the hypothesized relationship of O'Toole and Meier in the research context of the Dutch primary education sector, testing the following hypothesis:

Hypothesis 1: Managerial networking of Dutch primary school leaders is positively related to school performance.

3.3. The role of context

Although many scholars confirm the idea that managerial networking positively affects organizational performance, replication in different research settings and across different countries seems to generate varying test results. O'Toole and Meier tested their model in the U.S., examining the performance of school districts in the state of Texas (e.g. O'Toole & Meier, 2003). However, in a comparison between Denmark and Texas, Meier et al. (2015) found no effect of managerial networking on school performance in the context of Danish primary education. They explained that the effect of managerial networking may be dependent on the type of school system, as Texas is a fragmented and adversarial school system, where school principals can have more power in making decisions about the school, whereas Denmark is a unitary and corporatist system, in which school principals share powers with teachers, which reduces their decision authority. Moreover, they found a negative relationship between managerial networking with elected government officials and school performance, which may indicate that those are only contacted when performance is poor – as some kind of feedback mechanism (Hawes, 2009). In an attempt to test the assumptions of the model in another public sector, Walker et al. (2010) found that overall, networking activities of English local governments do not affect performance. Rather, they recognized that some interactions with network actors matter more than others. Also, they found that some interactions may even weaken performance instead of boosting it.

Thus, the assumption that management and organizational performance are linked is not parsimonious. These mixed test results point to the defining role of context. Using the definition of Johns (2006, p. 386), O'Toole and Meier (2015, p. 238) referred to context as those “situational

opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as functional relationships between variables”. Such situational factors may include “industry-, sector-, or economy-wide characteristics, as well as other normative and institutional structures and regimes”, Bamberger argued (2008, p. 840). To further the understanding of the influence of context, O’Toole and Meier (2015) incorporated different contextual variables in their initial model of public organizational performance, such as political context (i.e. the concentration of power within the organization), environmental context (i.e. the environment’s complexity, turbulence, and munificence), and internal context (i.e. goal conflict or ambiguity, discretion, and professionalism in the organization). They argued that a given context may change the relationship between management and performance – which became apparent in the comparison between Danish and Texas schools. The contextual variables they proposed differ from the other factors of the model (past performance, organizational stability, environmental shocks, and internal management) because those factors are determining the outcome, whereas the contextual variables are the “conditions” under which those factors may or may not have a smaller or larger effect on the outcome. The hypotheses formed in their work were tested by various scholars, who indeed confirmed the importance of the political context (e.g. Meier et al., 2015), environmental context (e.g. Rho & Han, 2020), and internal context (e.g. Meier et al., 2015; Song et al. 2020). Building upon the work of O’Toole and Meier (2015), the role of national context was also underlined (e.g. Chun & Sung, 2017; Song et al., 2021). Additionally, Torenvlied and Akkerman (2017) argued that institutional context can also be an important moderator, as they showed that within the context of Dutch primary education, results in performance varied for denominational and nondenominational schools, i.e. “the distinction of schools that have a specific religious or cultural background from schools that do not” (p. 103).

Moreover, scholars identified the determinants of managerial networking behavior, aiming to predict which factors have a direct influence on the occurrence of managerial networking behavior (Agranoff & McGuire, 2003). For example, Andrews et al. (2011, p. 356) argued that several environmental variables, strategic choices, and organizational variables lead to increased managerial networking. The environmental variables they proposed were munificence, i.e. “the relative abundance of critical resources needed by an organization”; complexity, i.e. “the similarity of an organization’s activities”; and dynamism, i.e. “the rate at which key features of the setting change” – also called unpredictability of stakeholder demands (Andrews et al., 2011, p. 358; based

on Dess & Beard, 1984). Moreover, the strategy variables included three different strategies through which an organization can “align” itself with the environment (p. 358), which can be either prospecting (constantly looking for opportunities), defending (conservatively upholding the status quo), or reacting (responding to change and uncertainty but without a coherent strategy), based on the work of Miles and Snow (1978). Additionally, the organizational variables they included were the degrees to which an organization is decentralized, formalized, and specialized (Hage & Aiken, 1967). They found that in the context of English local governments, “loose” organizational structures (i.e. structures with low centralization, low formalization, and low specialization) are positively related to networking, whereas defensive and reactive strategies are negatively related, as well as the unpredictability of stakeholder demands (dynamism). Other organizational variables were tested by scholars for their influence on the relationship between managerial networking and performance. Hicklin et al. (2007) found that for school districts with a larger administrative staff, the relationship between networking and performance is positive. Additionally, Hansen and Villadsen (2013) found that in the context of Danish municipalities, the use of “transnational organizational innovations”, such as management tools and NPM-related organizational practices, is positively related to this relationship as well.

The earlier-mentioned studies on the influence of context mostly focused on political, environmental, organizational (or internal), institutional, and national contexts. Also, different determinants of managerial networking behavior were examined. These contextual variables or determinants mostly focus on the organization or its environment as a whole. However, there is far less research on the influence of individual characteristics of managers in the context of managerial networking behavior. One of the few studies that focused on this, is the work of Hansen and Villadsen (2013), examining the moderating effect of managers’ characteristics on the relationship between managerial networking and organizational performance in the research context of Danish municipalities. The authors found that a higher educational degree could strengthen the positive relationship between a manager’s networking activities and organizational performance because managers with a higher educational degree have been “exposed to more complex and abstract learning situations”, which makes them “better equipped to understand and interpret the complexities of social and organizational life and the importance of attending to numerous interested actors to achieve personal or organizational success” (p. 9). As such, the networking activities of managers with a higher educational degree are more successful in

improving performance (i.e. the effect of their networking activities on performance is larger). Moreover, they found a positive effect of previous job experience in the private sector, during which managers may have learned how connections with external actors may benefit organizational performance. As such, the effect of the networking activities of managers with experience in the private sector on organizational performance is larger than the effect of networking activities of managers without this experience. Furthermore, they found that tenure in the current position and general managerial experience strengthen the effect of networking activities on organizational performance, as the longer managers hold their job and the more experience they have, the more they learn about which relations can be beneficial and need to be invested in. As such, they prioritize quality over quantity, which leads to less frequent managerial networking, or smaller networks in general (also based on Juenke, 2005), but the networking activities that they do undertake are more successful.

However, no study has yet analyzed the effects of a manager's perception of his or her work on this relationship. Understanding the effects of a manager's job-related attitudes may reveal which managers may be more successful in improving organizational performance. Organizational psychologists have pointed out the many benefits for organizations when employees have positive experiences at work. They put more effort into their job, are more satisfied with their work, and perform better (Ghazzawi, 2008; Bakker & Schaufeli, 2008). Moreover, they are more likely to remain in the organization, which results in personnel stability and retention of skills and knowledge (Nielsen & Einarsen, 2012). Moreover, as Luthans (2002) argued, employees who hold more positive attitudes toward work will feel more intrinsically motivated to work hard, rather than being motivated by status or financial incentives. This is also why employees in the public sector, such as people who work in the education sector – where such extrinsic rewards are not always available – are often reported to have high intrinsic motivation (Dur & Zoutenbier, 2015). It is evident from this stream of literature that how individuals perceive their work is of great importance to an organization, as positive job-related attitudes can make a difference. Therefore, I assume that job-related attitudes can also have a significant impact in the context of managerial networking. However, such a focus has been absent from the current debate on managerial networking and organizational performance. This thesis aims to address this gap in the literature. I assume that job-related attitudes, in this case, work autonomy, work engagement, and work commitment strengthen the relationship between managerial networking and

organizational performance. In other words, I expect that for school principals that are highly autonomous in their work, highly engaged, or highly committed to the school, the positive effect of their managerial networking activities on school performance is larger than for principals with low autonomy, low engagement, and low commitment. Autonomy brings the discretion to make decisions; engagement brings the willingness to go the extra mile, be productive in extra-role tasks, and be creative; and commitment brings an intrinsic motivation to strive for the organization's interests. I assume that all of these positively affect the effect of managerial networking on school performance. Although these three concepts should not be seen as a comprehensive taxonomy of job-related attitudes, each of them taps a different dimension of employees' perception of work: the level of freedom or independence employees have in their work, how energized they get from their work, and how committed they feel toward their work or organization. This makes it an interesting selection of variables to examine in this context. The next three sections discuss these potential moderating variables and the hypotheses of their effects.

3.4. The moderating effect of work autonomy

Work autonomy is defined by Hackman and Oldham (1975, p. 162) as “the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedure to be used in carrying it out”. Whereas some authors see autonomy as a characteristic of work (e.g. Engel, 1970), others view it as an attitude towards work (e.g. Hall, 1976). This thesis follows the latter perspective and focuses on the autonomy that public managers perceive to hold in their job. Breugh (1985; 1999) pointed out that work autonomy has three facets: method, schedule, and criteria. First, work method autonomy refers to “the degree of discretion/choice individuals have regarding the procedures (methods) they utilize in going about their work” (1985, p. 556). Second, work scheduling autonomy refers to “the extent to which workers feel they can control the scheduling/sequencing/timing of their work activities” (p. 556). Finally, work criteria autonomy refers to “the degree to which workers can modify or choose the criteria used for evaluating their performance” (p. 556). It is evident that each of these perspectives entails some sort of freedom of choice.

The literature on street-level bureaucracy and discretion lends some useful insights to this discussion. Lipsky (2010, p. 3) defined street-level bureaucrats as “public service workers who interact directly with citizens in the course of their jobs, and who have substantial discretion in the execution of their work”. He stated that street-level bureaucrats need discretion and autonomy to

be flexible in carrying out their tasks. Without discretion, they would not be able to make effective decisions on the implementation of (general) policy in specific situations. Moreover, discretion enables street-level bureaucrats to prioritize which rules, regulations, and norms to apply under particular circumstances when faced with limited available resources, such as time and money (Brodkin, 1997; Maynard-Moody & Musheno, 2000; Tummers & Bekkers, 2014). As such, discretion, or autonomy, provides street-level bureaucrats with the opportunity to decide in which cases (or citizens) to invest their (limited) time and money. Put more generally by Davis (1969, p. 4), “a public officer has discretion whenever the effective limits on his power leave him free to choose among possible courses of action or inaction”. In short, it is clear from these statements that discretion, or autonomy, thus provides a public officer with the ability to decide what to prioritize and which course of action to take.

I assume that school principals are comparable to street-level bureaucrats in this sense. Of course, they do not directly interact with citizens in the course of their jobs and they also do always bear direct responsibility for implementing policy, but their jobs also require discretion, or autonomy, to make effective decisions, especially when faced with limited resources. Furthermore, school principals also need the freedom, or flexibility, to choose the possible course of action or inaction. This is also the case for their managerial networking activities. I argue that for highly autonomous school principals, the positive effect of their managerial networking activities on school performance is larger than for less autonomous principals, as the former are better able to identify opportunities for strategic action and make choices on where to invest their time and resources. As such, their managerial networking will be more effective; the effect on school performance will be larger. For example, if school principals are autonomous, they are better “equipped” to identify where to invest the funding they receive from the national or local government in order for it to contribute to better school performance, such as hiring more teachers or purchasing new teaching methods. If school principals lack this autonomy, they are subjected to the preferences of the other actors or organizations and are left to their discretion, weakening the effect of those managerial interactions on school performance. In other words, I expect that work autonomy strengthens the relationship between managerial networking and school performance and propose the following hypothesis:

Hypothesis 2: Work autonomy strengthens the relationship between managerial networking activities of school principals and school performance.

3.5. The moderating effect of work engagement

Work engagement is referred to by Schaufeli et al. (2006, p. 702) as “a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption”. The three items are defined as follows. First, vigor is characterized by high levels of physical and mental energy and a willingness to invest in one’s work and remain persistent when faced with difficulties. Second, dedication is defined as involvement and enthusiasm in one’s work, which leads to feelings of significance and pride. Lastly, absorption captures concentration, working hard, and the difficulty to disengage oneself from work. Work engagement can also be seen as a job-related attitude because it captures the way employees feel about their work.

Bakker and Demerouti (2008) developed a model of work engagement, including its consequences for job performance (based on Demerouti & Bakker, 2006; Bakker et al., 2004; Gierveld & Bakker, 2005; Bakker et al., 2006). They argued that an employee’s level of work engagement is positively related to job performance in three ways. First, highly engaged employees seem to be willing to “go the extra mile” for their work-related goals, as Bakker et al. (2004) showed that engaged employees receive higher ratings from their coworkers on their performance. Second, Gierveld and Bakker (2005) found that engaged employees more often carry out additional, challenging tasks, suggesting that they are more productive, show more dedication and persistence, and have more energy for these extra-role tasks. Third, Bakker et al. (2006) found that engagement is positively related to creativity; high levels of work engagement among school principals lead to an increased ability to come up with creative solutions to work-related problems. In short, Bakker and Demerouti (2008) concluded that work engagement results in higher performance because it leads employees to go the extra mile, be more productive, and be more creative.

I assume that a similar rationale can be applied to the context of school principals in primary education and that work engagement may strengthen the relationship between managerial networking and school performance. For highly engaged school principals, the positive effect of their managerial networking activities on school performance is larger than for less engaged principals, as the former go the extra mile, more often carry out additional tasks, and look for more creative solutions. As such, their managerial networking will be more effective. For example, if a school principal is engaged with his or her work, he or she will be more motivated and “go the extra mile” to tap additional resources from the external environment that are effective for

improving school performance. Moreover, engagement leads to higher individual productivity, especially in extra-role tasks. Productive school principals will gain more from their managerial networking activities (which could be regarded as extra-role tasks) to boost performance, than school principals who lack engagement. Finally, engagement leads to creativity; managerial networking activities of highly engaged school principals can be more effective for performance because these principals look for more creative ways to transform the inputs from the environment into outputs for a successful outcome. For example, they can invest their funding in new, innovative teaching methods. If school principals lack this engagement, they are less motivated, productive, and creative, which diminishes the positive effect of their managerial networking activities on school performance. In other words, I expect that work engagement strengthens the relationship between managerial networking and school performance and propose the following hypothesis:

Hypothesis 3: Work engagement strengthens the relationship between managerial networking activities of school principals and school performance.

3.6. The moderating effect of work commitment

In their review of the work (also called organizational) commitment literature, Allen and Meyer (1990) identified three components of work commitment: affective, continuance, and normative commitment. First, affective commitment is defined as “the affective or emotional attachment to the organization such that the [...] individual identifies with, is involved in, and enjoys membership in, the organization” (Allen & Meyer, 1990, p. 2; also Mowday et al., 1979). Second, continuance commitment refers to the tendency of employees to remain in the organization based on their recognition of the costs associated with leaving the organization, i.e. sunk costs made in the past (Allen & Meyer, 1990, p. 3; Rusbult & Farrell, 1983). Third, normative commitment is viewed as the normative belief about one’s moral responsibility to the organization, colleagues, or the work itself. Wiener (1982, p. 471) underlined the “normative pressures to act in a way which meets organizational goals and interests” and suggested that employees behave in this way because they believe they are morally obliged to do so. As such, Meyer et al. (1993, p. 539) stated that “employees with an affective commitment remain with the organization because they want to, those with a continuance commitment remain because they need to, and those with a normative commitment remain because they feel they ought to do so”.

The positive effects of organizational commitment, such as higher turnover, lower absenteeism, and higher performance have been stressed by authors (e.g. Meyer & Allen, 1987). I highlight one that is relevant to the topic of this thesis. Organizational commitment is related to the motivational force to perform and intrinsic motivation (Mowday et al., 1979). This means that “highly committed employees are thought to be motivated to exert high levels of energy on behalf of the organization” (p. 236). This relation is confirmed by (among others) Mowday et al. (1979), Mathieu and Zajac (1990), and Randall (1990).

I assume that the same logic can apply to the context of school principals and that work commitment may strengthen the relationship between managerial networking and school performance. School principals with high commitment to the school may feel more intrinsically motivated and energized to contribute to organizational success. They will attempt to gain as much as possible from the external environment because they care about the school and feel motivated to act in its interests. As such, the positive effect of their managerial networking activities will be larger than those of less committed principals. The managerial networking activity of less committed school principals may not result in better school performance, because school principals miss the motivation to go “all in” for their school. In other words, I expect that work commitment strengthens the relationship between managerial networking and school performance and propose the following hypothesis:

Hypothesis 4: Work commitment strengthens the relationship between managerial networking activities of school principals and school performance.

4. Research design

This chapter outlines the quantitative research design of this thesis. First, the methods of data collection are discussed. The second section describes the operationalization of the variables.

4.1. Data collection

To test the hypotheses, I used a pre-existing data set with information about the managerial networking behavior of 862 school principals of Dutch primary schools. This data set was also used in the studies of Torenvlied and Akkerman (2012), Van den Bekerom et al. (2015), and Van den Bekerom (2016), which focused on different subjects but had a comparable research design. As such, this chapter on research design displays several similarities. Moreover, this data set is the second wave of a larger Dutch school management project that started in 2010. As such, it also builds upon these earlier-obtained data (called wave 1). The data set consists of two parts. The first data set contains the responses to a nationwide internet survey that was sent to principals of Dutch primary schools in the second half of 2013. The principals of all 6742 primary schools in the Netherlands were invited to take part in the survey by email. After eight weeks, the response rate was 13.29% (n = 896). Van den Bekerom (2016, p. 102) stated that this was slightly lower than the response rate in the first wave of the research project on Dutch primary schools (15.6%), but that it was substantial given the work pressure and prevalence of survey research in this sector. The second part of the data set contains the average scores of students on the CITO test – the most common standardized test taken in the final grade of primary education – indicating objective school performance data. These scores, freely accessible on the website of the Education Executive Agency (DUO), were matched with the schools of the principals that participated in the survey, based on their school identification number (BRIN number). Only the test scores of the schools that gave permission for this, were added. This left 862 of the original 896 responses. These performance data were thus independently measured from the survey. Before starting the survey, the respondents were informed that their answers would be processed confidentially and fully anonymously.

4.2. Operationalization of variables

Managerial networking. The independent variable in this thesis is managerial networking. More specifically, this thesis focuses on the frequency of relations with external organizations and actors

in the environment (Torenvlied & Akkerman, 2014). Fifteen organizations in the school's environment were included in the questionnaire. Three of them are superiors or actors who have "direct hierarchical leverage" over public managers; interacting with those actors is referred to as "networking upward" (Van den Bekerom, 2016, p. 129; Moore, 1995). This thesis will not cover this dimension of managerial networking. The other twelve organizations and actors form three different scales of "networking outward" (or external networking). This thesis will only focus on these twelve organizations and actors. In general, networking outward refers to interacting with actors and organizations from the external environment of an organization, "such as suppliers, [external] stakeholders, alliance partners, regulatory agencies, or political institutions" (Torenvlied et al., 2013, p. 252). In this particular thesis and context, networking outward refers to managerial networking with actors and organizations external to the primary school or school board. Networking outward is divided into three scales that emerged from the earlier-obtained data in 2010 (wave 1)¹: (a) local government networking, (b) national government networking, and (c) youth care networking. The local government scale consists of three items: (a) the "municipal department of education", which is the main local government department responsible for local education policy implementation; (b) "aldermen", the executive administrators in the local government; and (c) "members of the city council", the political representatives at the local level. The national government scale consists of four items: (a) "test suppliers", the companies that develop the standardized tests, such as CITO, for primary schools; (b) the "Dutch Inspectorate of Education", which monitors and audits school performance; (c) the Dutch "Ministry of Education, Culture, and Science", the national government responsible for formulating educational policy; and (d) the "Education Executive Agency", the semi-autonomous government agency responsible for budgeting and finances. These four organizations assign accountability to schools concerning student achievements, educational climate, and financial management (Van den Bekerom, 2016). Lastly, the youth care scale consists of four items: (a) "the school attendance officer"; (b) "neighborhood police"; (c) "municipal youth service"; and (d) "regional youth care". These local organizations provide youth care and child protection (Van den Bekerom, 2016). For each of these organizations or actors, school principals were asked: "How frequently do you interact with this

¹ The original questionnaire (wave 1) used in 2010 contained 41 external organizations and relevant actors. This list was determined on the basis of interviews with informants in the education domain, school principals, and members of school boards (Torenvlied & Akkerman, 2012, p. 455). In wave 2, in 2013, the length of the managerial networking scale was reduced to 15 items due to space restrictions (Van den Bekerom, 2016, p. 150).

type of organization?” (based on Meier & O’Toole, 2003). The school principals could choose among the categories “Daily”, “Weekly”, “Monthly”, “A few times a year”, “Yearly”, and “Never/not applicable”. Together, the 12 items form a scale with acceptable internal consistency (Cronbach’s $\alpha = 0.749$), and I used the mean of the scores as the construct for managerial networking. I also reversed the scales, so that the higher the score, the higher the frequency of managerial networking for that variable.

School performance. The dependent variable in this thesis is (primary) school performance. School performance was measured using each school’s average score of students on the CITO test for 2014. In the Netherlands, schools use standardized tests in the final grade of primary school to measure their student’s knowledge of Dutch language, arithmetic, and study competencies. The CITO test – called after the institution that designs and administers the tests – is the most common among those standardized tests in the Netherlands; in 2014, 5996 Dutch primary schools used it (CITO, 2014). In their final year of primary education, students take the test, which consists of three sub-tests: language (100 questions), arithmetic (60 questions), and study competencies (40 questions). Students’ answers to these questions are transformed into scores based on a scale from 501 and 550. The average score in 2014 was 535 (CITO, 2014). Based on those test scores and their teacher’s assessment, students are referred to a specific level of secondary education. Students with severe language problems who have lived in the Netherlands for less than four years at the moment of the test, and students that require special secondary education (because they need extensive support due to a disability or disorder), are exempted from the tests.

The scores of students on standardized tests such as the CITO test provide a measure of school performance because the Dutch Inspectorate of Education also uses the test scores as a performance indicator in their yearly school evaluations. The test results indicate whether students have developed sufficient knowledge of language and arithmetic and whether they are sufficiently able to read and understand texts at the end of their final year in primary school. For this, the “pupil weights”, i.e. specific categories of pupils that have their own weights, such as the educational level of their parents, their country of origin, and whether their parents are in a debt rescheduling program, are taken into account during the evaluations to provide a fair and complete interpretation of the scores. As explained in the second chapter of this thesis, the Dutch Inspectorate of Education also uses other performance indicators, such as the cognitive development of students, the level of social security, (alarming) signals from teachers, parents, or students, and the change in student

numbers at the school. However, for this study, students' average CITO test scores are selected because they are widely considered to be authoritative by the Dutch Inspectorate of Education as well as teachers and parents. The test scores are freely accessible on the Internet and were matched with the data on the networking behavior of school principals by each school's identification number. The data do not include test scores from students that fall within the aforementioned exemption categories.

Work autonomy. Perceived work autonomy was measured through five items from the instrument of Breugh (1989). Breugh (1985) distinguished between three facets of autonomy: work method, work scheduling, and work criteria, and developed three "work autonomy scales" to measure each of them. Originally, the questionnaire consists of nine items, with three items for every scale. The questionnaire used for this thesis only included three items to reduce the likelihood of attrition. This measurement instrument has been used and validated in many research settings and contexts. The school principals were asked to respond to statements on how they felt about their job using a seven-point Likert scale: "Strongly disagree", "Disagree", "Somewhat disagree", "Neither agree nor disagree", "Somewhat agree", "Agree", and "Strongly agree". The five items from the measurement instrument of Breugh (1989) that were included in the questionnaire were: (1) I am allowed to decide how to go about getting my job done; (2) I have control over the scheduling of my work; (3) My job allows me to modify the normal way we are evaluated; (4) I am able to modify what my job objectives are; and (5) I have some control over what I am supposed to accomplish. Item 1 measures the construct of work method autonomy, item 2 measures work scheduling autonomy, and items 3, 4, and 5 measure work criteria autonomy. The five items form a scale with acceptable internal consistency (with $n = 663$, Cronbach's $\alpha = 0.715$); therefore, I used the mean of the five scores as the construct for work autonomy.

Work engagement. Work engagement was measured through six items from the "Utrecht Work Engagement Scale-9" (UWES-9; Schaufeli et al., 2006). The UWES is a self-report questionnaire that measures the three dimensions or scales of work engagement theorized by Schaufeli et al. (2002): vigor, dedication, and absorption. Originally, the questionnaire consisted of 17 items, but the number of items has been reduced so that the three constructs could be measured through as few items as possible and to decrease the likelihood of attrition (Schaufeli et al., 2006). This measurement instrument has been used and validated in many research settings and contexts. The

UWES-9 now consists of three items per scale, asking the school principals to respond to statements on how they felt about their job using a seven-point Likert scale: “Never”, “Almost never”, “Rarely”, “Sometimes”, “Often”, “Very often”, and “Always”. The six items of the UWES-9 that were included in the questionnaire were: (1) At my work, I feel bursting with energy; (2) I find the work that I do full of meaning and purpose; (3) When I am working, I forget everything else around me; (4) My job inspires me; (5) When I get up in the morning, I feel like going to work; and (6) I feel happy when I am working intensely. Items 1 and 5 measure the construct of vigor, items 2 and 4 measure the construct of dedication, and items 3 and 6 measure the construct of absorption. The six items form a scale with high internal consistency (with $n = 663$, Cronbach’s $\alpha = 0.918$); therefore, I used the mean of the six scores as the construct for work engagement.

Work commitment. Work commitment was measured through three items for normative commitment developed by Allen and Meyer (1990) and Meyer et al. (1993). As many studies on commitment in the public sector (e.g. public service motivation; Moynihan & Pandey, 2007) mainly focus on the normative component of commitment rather than the affective or continuance components, this thesis also only includes normative commitment. Normative commitment refers to the employee’s feelings of obligation to remain with the organization and thus captures the moral dimension of commitment (Allen & Meyer, 1990). In the original questionnaire, normative commitment is measured through eight items. This thesis only included three items. School principals were asked to respond to three statements using a seven-point Likert scale, varying from “Strongly disagree” to “Strongly agree”. The items that were included in the questionnaire were: (1) This school deserves my loyalty; (2) I would not leave my school right now because I have a sense of obligation to the people in it; and (3) I owe a great deal to my school”. The three items form a scale with low internal consistency (with $n = 663$, Cronbach’s $\alpha = 0.503$), therefore this requires further attention. After an inspection of the correlations between the three items, I decided to take item 2 out, because items 1 and 3 showed the highest inter-item correlation (0.336). When a scale only consists of two items, Cronbach’s α is not a perfect instrument for testing internal consistency (e.g. Taber, 2017). Therefore, I accept the 0.336 inter-item correlation to be sufficient evidence that these two items measure the same construct. Thus, I used the mean of the two scores as the construct for work commitment.

To assess the construct validity of the questions that were designed to measure the constructs of work autonomy, work engagement, and work commitment, I conducted an exploratory factor analysis (EFA). EFA is a statistical technique that is used to “reduce data to a smaller set of summary variables and to explore the underlying theoretical structure of the phenomena” (Statistics Solutions, 2021, para. 1). I used the principal component factor analysis method to extract the minimum number of factors that explain a maximum portion of the variance in the original variables (work autonomy, work engagement, and work commitment). The Kaiser-Meyer-Olkin measure verified the adequacy of the factor analysis, $KMO = .881$. Bartlett’s test of sphericity $\chi^2 (91) = 3883.757$ $p < .001$, indicating that factor analysis is useful. The maximum likelihood factor analysis with a cut-off point of .50 and Kaiser’s criterion of eigenvalues greater than 1 yielded a three-factor solution as the best fit for the data, accounting for 59.925% of the variance. Table 1 presents the explained variance of the factors and Table 2 presents the factor loadings of all variables tested in this analysis. The findings confirm that the constructs of work autonomy, work engagement, and work commitment are best measured by three factors. This is consistent with the theoretical expectations. Moreover, the findings indicate support for convergent validity, as the variables that are (according to the theories) supposed to measure work autonomy, work engagement, and work commitment also “hang together” under the same factors. On the other hand, the findings in Table 2 also indicate support for discriminant validity, because all items related to the three measured constructs load strongly on a single factor and weakly on the other two.

Table 1

Exploratory Factor Analysis; Variance explained

Component	Eigenvalue	% of Variance	Cumulative %
1	5.082	36.297	36.297
2	1.864	13.312	49.609
3	1.444	10.316	59.925

Notes: Extraction method: Principal Components Analysis

Table 2

Exploratory Factor Analysis, factor loadings

<i>Items</i>	Factors		
	1	2	3
<i>Engagement 4</i>	.906	.328	
<i>Engagement 2</i>	.860	.323	
<i>Engagement 6</i>	.842	.348	
<i>Engagement 5</i>	.839	.379	
<i>Engagement 1</i>	.834	.311	
<i>Engagement 3</i>	.764		
<i>Autonomy 1</i>		.784	
<i>Autonomy 2</i>	.308	.750	
<i>Autonomy 4</i>		.704	
<i>Autonomy 3</i>		.635	
<i>Autonomy 5</i>		.598	
<i>Commitment 3</i>			.767
<i>Commitment 2</i>			.714
<i>Commitment 1</i>	.346		.684

Notes: Extraction method: Principal Components Analysis;
 Rotation method: Oblimin with Kaiser Normalization;
 Loadings larger than .50 are in bold.

Covariates. Three covariates that might confound the link between school principals’ managerial networking behavior and school performance arising from differences between school principals were included in the analysis. It is evident from earlier research that age, level of completed education, and work experience may also affect levels of managerial networking (e.g. Hansen & Villadsen, 2013; Meier & O’Toole, 2002). First, the age of the school principals was measured (in years). Second, the level of completed education was measured; school principals could choose between the following options: “MAVO/HAVO” (pre-vocational secondary education/senior general secondary education); “VWO/Gymnasium” (pre-university education with or without Ancient Greek and Latin courses); “MBO” (secondary vocational education); “HBO” (higher professional education); and “WO” (university education). Third, work experience as a school

principal was captured by the number of years that the school principal has worked as a school leader.

Table 3 presents the descriptive statistics and correlations between the variables in the analysis. The results show average CITO test scores were 534.45, ranging from 518 to 548. The respondents of the survey rated the frequency of their managerial networking activities a 2.679 on average; with the reversed scale, this means that they – on average – had contact with the actors or organizations in their external environment more than a few times a year. This varied between 1 (never) and 4.83 (almost weekly). On average, school principals scored their levels of work autonomy, work engagement, and work commitment a 4.771, 5.332, and 5.551 respectively (on a 7-point Likert scale). The average school principal was 52.42 years old, ranging from 28 to 65, held an HBO diploma, ranging from MAVO/HAVO to WO, and had 12.11 years of experience as a school leader, ranging from 0 to 43 years.

The correlation columns show that there is a small negative correlation between CITO test scores and managerial networking. This correlation is not significant. CITO test scores and work autonomy, work engagement, and work commitment are also negatively correlated. From the covariates, education and experience are positively related to CITO test scores, whereas age is negatively correlated. There are also weak negative correlations between managerial networking and all job-related attitudes. All correlations are weak ($<.29$), except for the correlation between age and experience, which is strong, and the correlation between work autonomy and work engagement, which is moderate. It is likely that the former is because school leaders who are older, also have more experience in their job. Work autonomy and work engagement may be positively related as school leaders who are more autonomous may be more engaged as well, and the other way around.

Table 3
Descriptive statistics and correlations between variables (n = 545)

Variable	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8
1 CITO test scores	534.45	4.199	518	548	--							
2 Managerial networking (MN)	2.679	.479	1.00	4.83	-.045	--						
3 Work autonomy (WA)	4.771	.909	1.40	7.00	-.021	-.121**	--					
4 Work engagement (WE)	5.332	.936	2.33	7.00	-.034	-.032	.382***	--				
5 Work commitment (WC)	5.551	.968	2.00	7.00	-.039	-.059+	.074*	.219***	--			
6 Age	52.42	8.180	28	65	-.027	.017	-.166***	-.170***	.067+	--		
7 Education	4.080	.435	1.00	5.00	.004	.048	.079*	-.019	-.050	-.015	--	
8 Experience	12.11	9.716	0	43	.058+	.016	-.064+	-.102**	.029	.600***	-.008	--

+ p < .1; * p < .05; ** p < .01; *** p < .001

5. Analysis & results

I conducted a multiple linear regression analysis to test the moderating effects of job-related attitudes on the relationship between managerial networking and school performance. The data set fulfilled the assumptions for regression analysis: outliers, collinearity, independent errors, random normally distributed errors, homogeneity of variance and linearity, and non-zero variances. First, I carried out an analysis of standard residuals on the data to identify any outliers, which showed that the data contained three outliers (cases 114, 666, and 814). After those were removed, the data did not contain outliers anymore (Std. Residual Min = -3.053, Std. Residual Max = 3.067), taking 3.29 or -3.29 as acceptable values (Tabachnick & Fidell, 2013). Second, tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern, as all VIF values were below 10 and Tolerance values were below 0.1. I anticipated the threat of multicollinearity between interaction effects and predictor variables by centering the variables of managerial networking, work autonomy, work engagement, and work commitment before the regression analysis. Third, the data met the assumption of independent errors (Durbin-Watson value = 1.887). Fourth, the histogram of standardized residuals indicated that the data contained approximately normally distributed errors, as did the normal P-Plot of standardized residuals, which shows points that were not completely on the line, but close. Fifth, the scatterplot of standardized predicted values showed that the data met the assumptions of homogeneity of variance and linearity. Finally, the data also met the assumption of non-zero variances (Variance, CITO test scores = 17.632; Variance, managerial networking = 0.229; Variance, work autonomy = 0.827; Variance, work engagement = 0.876; and Variance, work commitment = 0.937). After addressing the assumptions and missing values, a sample size of 545 responses was analyzed. In the theoretical chapter, the following hypotheses were proposed:

H1: Managerial networking of Dutch primary school leaders is positively related to school performance.

H2: Work autonomy strengthens the relationship between managerial networking activities of school principals and school performance.

H3: Work engagement strengthens the relationship between managerial networking activities of school principals and school performance.

H4: Work commitment strengthens the relationship between managerial networking activities of school principals and school performance.

Four models were used to test these hypotheses. The first model incorporated the covariates of age, education, and experience; the second model tested the direct effect of managerial networking on school performance; the third model included the moderator variables of work autonomy, work engagement, and work commitment; and the fourth model took into account the interaction effects between managerial networking and the moderator variables. The model summaries and ANOVA scores are listed in Table 4, and the results of the regression analysis are summarized in Table 5. Table 4 shows that none of the models is statistically significant. Table 5 shows that age has a negative effect on school performance (schools of older school principals score lower on the CITO test; although the effect is not significant), education has a positive effect on school performance (schools of school principals with a higher educational degree score higher on the CITO test; although the effect is not significant), and experience has a positive effect on school performance (schools with experienced school principals score higher on the CITO test; this effect is significant with $p < .05$). The following paragraphs evaluate the hypotheses.

Hypothesis 1 tests if the managerial networking behavior of Dutch primary school principals is positively related to school performance (average CITO test scores). In model 2, the dependent variable, school performance, was regressed on predicting the variable of managerial networking to test hypothesis 1. Results show that managerial networking did not significantly predict school performance, $F(4, 540) = 1.569, p = .181$. This indicates that managerial networking when controlling for age, education, and experience, does not have a significant impact on school performance. The $R^2 = .011$ depicts that the model explains 1.1% of the variance in school performance. The coefficient of managerial networking was further assessed to investigate the influence of managerial networking on school performance. As presented in Table 5, results revealed that managerial networking has a negative impact on school performance ($B = -.402, p = .284$). This is contrary to my expectations, as I expected the impact to be positive (in accordance with the model of O'Toole & Meier). Therefore, hypothesis 1 is not supported.

Hypotheses 2, 3, and 4 test if the link between the managerial networking behavior of Dutch primary school principals is positively affected by respectively work autonomy, work engagement, and work commitment. In model 4, school performance was regressed on predicting the variables of managerial networking, work autonomy, work engagement, and work commitment to test hypotheses 2, 3, and 4. Results show that the moderator variables – when interacting with managerial networking – do not significantly predict school performance, $F(10, 534) = 1.409,$

$p = .172$. This indicates that all together, the moderator variables have no significant impact on the link between managerial networking of school principals and school performance. However, since $R^2 = .015$ in model 3, and $R^2 = .026$ in model 4, depicting that model 4 explains 2.6% of the variance in school performance compared to 1.5% of model 3, a further assessment of the coefficients of the moderator variables can reveal the reason for this increase.

Hypothesis 2 evaluates whether work autonomy strengthens the link between managerial networking and school performance. As presented in Table 5, results revealed that the effect of work autonomy on the relationship between managerial networking and school performance is indeed positive, but this effect is not significant ($B = .279$, $p = .511$). Therefore, hypothesis 2 is not supported. Hypothesis 3 evaluates whether work engagement strengthens the link between managerial networking and school performance. Contrary to my expectations, results revealed that work engagement has a negative impact on this relationship ($B = -.586$, $p = .159$). This effect is not significant. Therefore, hypothesis 3 is not supported. Hypothesis 4 evaluates whether work commitment strengthens the link between managerial networking and school performance. Results revealed that work commitment has a positive impact on this relationship ($B = .779$, $p = .038$). This effect is significant ($p < .05$). Therefore, hypothesis 4 is supported. The moderating effect is also shown in Figure 1.

Table 4

Model summary^e & ANOVA^e

	R	R ²	df	F	p
Model 1	.097 ^a	.009	3	1.709	.164
Model 2	.107 ^b	.011	4	1.569	.181
Model 3	.121 ^c	.015	7	1.131	.342
Model 4	.160 ^d	.026	10	1.409	.172

a. Predictors: (Constant), experience, education, age

b. Predictors: (Constant), experience, education, age, MN

c. Predictors: (Constant), experience, education, age, MN, WA, WE, WC

d. Predictors: (Constant), experience, education, age, MN, WA, WE, WC, MN x WA, MN x WE, MN x WC

e. Dependent variable: CITO test scores

Table 5

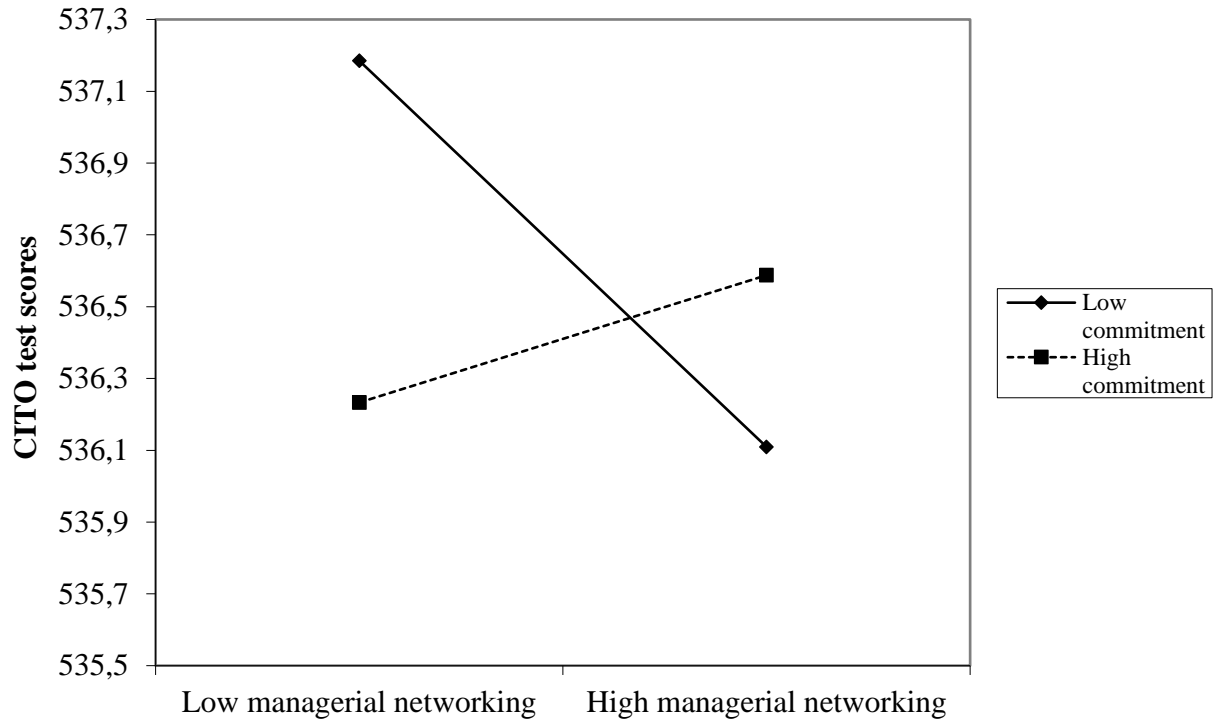
Results of Multiple Linear Regression Analysis (n = 545)

	Model 1	Model 2	Model 3	Model 4
	<i>B/SE/p</i>	<i>B/SE/p</i>	<i>B/SE/p</i>	<i>B/SE/p</i>
Managerial networking (MN)		-.402 (.376) (.284)	-.450 (.380) (.236)	-.386 (.380) (.310)
Work autonomy (WA)			-.112 (.217) (.607)	-.161 (.218) (.462)
Work engagement (WE)			-.114 (.213) (.594)	-.102 (.214) (.663)
Work commitment (WC)			-.130 (.190) (.493)	-.123 (.190) (.520)
Managerial networking x work autonomy (MN x WA)				.279 (.423) (.511)
Managerial networking x work engagement (MN x WE)				-.586 (.416) (.159)
Managerial networking x work commitment (MN x WC)				.779* (.374) (.038)
Constant	536.392*** (2.155) (.000)	536.287*** (2.157) (.000)	536.464*** (2.174) (.000)	536.530*** (2.169) (.000)
Age	-.050+ (.028) (.071)	-.050+ (.028) (.073)	-.053+ (.028) (.060)	-.050+ (.028) (.078)
Education	.033 (.412) (.937)	.054 (.412) (.896)	.055 (.415) (.895)	.009 (.415) (.982)
Experience	.048* (.022) (.030)	.048* (.022) (.030)	.049* (.022) (.029)	.046* (.022) (.038)

+ p < .1; * p < .05; ** p < .01; *** p < .001

Figure 1

The moderating effect of work commitment



6. Conclusion & discussion

6.1. Conclusion

This study aimed to shed light on the potential moderating effects of job-related attitudes on the relationship between managerial networking and school performance in the context of Dutch primary education. It has addressed the following research question: *To what extent do work autonomy, work engagement, and work commitment moderate the relationship between school principals' managerial networking activities and school performance in Dutch primary education?* In the Netherlands, primary schools have two responsibilities: qualifying pupils for their future by promoting cognitive skills and socializing them by contributing to their social development. Although primary schools are formally governed by school boards, school principals have the authority to facilitate smooth day-to-day management of the school. This means that school principals are responsible for the educational programs, coaching of teachers, administrative duties, human resource management, and representing the school in the external environment. The performance of primary schools is assessed by the Ministry of Education, Culture, and Science on a number of indicators. Most prominent are the average outcomes of the standardized tests that all students take in the final year of primary school, of which the CITO test is the most widely used.

Managerial networking has been defined as the frequent contact of public managers with external actors and organizations. The model of O'Toole and Meier (1999; 2001) identified managerial networking as an important factor for organizational performance. Managerial networking strategies can be aimed at buffering the environment: establishing special units or processes to protect the organization against environmental turbulence. Additionally, managerial networking can also be aimed at exploiting the environment: tapping financial resources, technology, support, or knowledge from the environment to improve or enhance organizational performance. I hypothesized that in the context of Dutch primary education, managerial networking activities of school principals are positively related to school performance (H1).

Although many scholars found a positive relationship between managerial networking and organizational performance, this relationship has not been proven parsimonious due to the role of context. Many different contexts and determinants of networking behavior have been examined in the current debate, however, a more individual, psychological perspective lacked. Since organizational psychologists have long emphasized the benefits of positive job-related attitudes of

employees toward work, I made the assumption that this could also be applied to the context of managerial networking and organizational performance. This led me to introduce three job-related attitudes as potential moderators: work autonomy, work engagement, and work commitment. Given the positive effects of those concepts according to the existing literature, I hypothesized that these three variables could strengthen the relationship between managerial networking and school performance (H2, H3, and H4). In other words, I assumed that the managerial networking activities of highly autonomous, engaged, and committed school principals will lead to better school performance, compared to managerial networking activities of less autonomous, engaged, and committed school principals.

I tested these hypotheses in a hierarchical regression analysis using a pre-existing dataset about the managerial networking behavior of 862 school principals of Dutch primary schools. While controlling for the school principal's age, level of completed education, and experience as a school principal, I found that in this research context, only work commitment significantly strengthened the relationship between managerial networking and school performance. Thus, with regard to the research question I posed in this thesis, I can conclude that only the managerial networking activities of highly committed school principals contribute to higher school performance (or in other words, make the negative relation less negative).

6.2. Discussion

The remainder of this chapter will discuss the results of the analysis, implications, validity and reliability, limitations, and directions for future research.

Hypothesis 1 tested if the managerial networking behavior of Dutch primary school principals was positively related to school performance (measured as average CITO test scores). This hypothesis was not supported and contrary to my expectations, the effect was negative instead of positive. I assumed that increased managerial networking activity could have a positive effect on school performance, because school principals may gain financial resources, relevant information and guidance on educational programs, and support from external actors and organizations, and may feel the pressure to perform well as they are being monitored by the Ministry of Education. The negative coefficient indicates that more frequent managerial networking activities may actually lead to lower CITO test scores (or that less frequent managerial networking activities may lead to higher CITO test scores). A likely explanation for this could be

that managerial networking may be an indicator of low school performance; school principals may only increase contact with external actors and organizations, for example seeking support from the Inspectorate of Education or municipal department of education, when this is necessary, i.e. when pupils are underperforming. This would be consistent with the study of Meier et al. (2015), who found a similar outcome. Additionally, this could also be explained by the finding of O'Toole and Meier (2004) that managerial networking is particularly valuable for less advantaged groups of pupils that need more support and guidance, indicating again that frequent managerial networking activity could be considered "feedback" to the overseeing authorities that schools are underperforming. The lack of a significant effect could be attributed to an omitted variable that may have influenced the dependent variable (school performance) as well but was not controlled for. For example, the internal management activities of school principals may also be positively related to school performance. Also, it could be the case that the variable that was used to measure managerial networking may not have accurately done so; as I did not distinguish between the different actors and organizations (national government, local government, and youth care organizations), but rather put them into one variable, results may have got mixed up and a significant effect did not occur. Lastly, the lack of a significant effect could be connected to the specific context in which the study took place. Meier et al. (2015) found no effect of managerial networking on school performance in Denmark because of its unitary and corporatist school system. In such a system, school principals share powers with teachers which reduces their individual decision authority and ability to influence school performance. A similar situation may exist in the Dutch primary education sector; it could be the case that this decision authority is indeed distributed among the school principal and teachers, limiting the managerial networking "power" of school principals. Another relevant contextual factor could be the distinction between denominational and nondenominational schools, among which results in school performance appeared to vary in the study of Torenvlied and Akkerman (2017). Moreover, the environmental context could have played a role, for example, a highly dynamic environment could lead to high unpredictability of stakeholders' demands which diminishes the effect of managerial networking, as well as the internal context, for example, goal conflict or ambiguity within the team of the school principal and teachers.

Hypothesis 2 tested if the relationship between the managerial networking activity of Dutch primary school principals and school performance was strengthened by the level of work autonomy

of the school principal. Based on the literature on discretion and street-level bureaucracy, I argued that the managerial networking activities of highly autonomous school principals would be more effective for school performance, as they are better able to identify opportunities for strategic action and make choices on where to invest their time and resources. Consistent with my expectations, the coefficient of the interaction effect between work autonomy and managerial networking was positive, which indicates that it could indeed have a positive effect. However, the hypothesis was not supported, as the effect was not significant. It could be the case that a significant effect lacked because the managerial networking relationships of school principals may be more characterized by established, routine interactions, where school principals are subject to the intentions or preferences of the other actor or organization, than by discretion and autonomous decisions. In this case, the level of work autonomy of a school principal would not make a significant difference in the performance outcome. For example, Petrou et al. (2017) found that interactions at work that are routine and habitual reduce the perceived feeling of autonomy among employees.

Hypothesis 3 tested if the relationship between the managerial networking activity of Dutch primary school principals and school performance was strengthened by the level of work engagement of the school principal. Based on the literature on work engagement, I expected that the managerial networking activities of highly engaged school principals are more successful for school performance, as they are more motivated to get everything out of the environment of their school, more productive in extra-role responsibilities, and more creative. Contrary to my expectation, the interaction effect indicated a negative effect of work engagement on the relationship between managerial networking and school performance. This means that the networking activities of highly engaged principals would actually be less contributive to school performance. The effect was not significant, and hypothesis 2 was not supported. An alternative explanation for this negative effect could be that engaged school principals might direct their vigor, dedication, and absorption “inwards”, to the internal management of the school. More attention to internally managing the school, increasing team involvement, and enthusing teachers and staff might take up time that could be spent on external networking. This could then weaken the interaction effect of work engagement and managerial networking. Findings from research on engaging leadership explain the increased attention to internal management and team involvement of engaged leaders (e.g. Schaufeli, 2021, Tuin et al., 2021; Mazzetti & Schaufeli, 2022). For

example, in a longitudinal study on leaders of teams, Mazzetti and Schaufeli (2022) found that highly engaged leaders were better able to obtain team effectiveness and increase individual levels of engagement. Thus, it could be the case that in the context of Dutch primary education, highly engaged school principals may be more beneficial for strengthening the link between internal management and performance, which results in a weaker influence on the link between school performance and external management.

Hypothesis 4 tested if the relationship between the managerial networking activity of Dutch primary school principals and school performance was strengthened by the level of work commitment of the school principal. Based on the literature on organizational commitment, I expected that highly committed school principals would go “all in” for the school and its pupils, meaning that their managerial networking activities could lead to higher school performance. Consistent with this expectation, I found a significant positive effect of work commitment. This finding provides the insight that being a highly committed school principal – attached to and motivated by the school – is beneficial, as the effect of his or her networking activities on school performance will be stronger.

6.3. Implications

The implication of the present study is that, in the context of Dutch primary schools, the effect of managerial networking on school performance is moderated by work commitment. By focusing on job-related attitudes as possible determinants of the relationship between managerial networking and organizational performance, this study has built upon the model of public management by O’Toole and Meier (2011). In addition, it aimed to further the understanding of the role of context. The results also have practical implications for public managers, especially for school principals and school boards. The present study shows that work commitment can have a positive effect on the relationship between managerial networking and organizational performance. For school principals, this implies that their commitment to the school may serve as “fuel” for the effect of managerial networking activities on school performance. Since school boards are formally responsible for the organization of the school, hiring (and retaining) a highly committed school principal can pay off.

6.4. Validity and reliability

Construct validity. One could conclude that the measures of the job-related attitudes were valid and reliable, as they were based on existing measurement instruments (e.g. Breugh, 1989; Schaufeli et al., 2006; Allen & Meyer, 1990). Moreover, I conducted an exploratory factor analysis that verified a three-factor solution for analyzing the data. Also, this analysis could support claims for convergent and discriminant validity. Internal consistency, assessed through Cronbach's alpha, was high for all constructs, except for work commitment, which is why I decided to leave out item 2, as items 1 and 3 had the highest inter-item correlation. The construct of managerial networking was also based on literature (e.g. Torenvlied & Akkerman, 2012) and showed acceptable high internal consistency, assessed through Cronbach's alpha. The CITO test scores were measured independently from the survey and were received directly from DUO.

Content validity. Managerial networking has been measured by the mean of the frequency of all external networking activities. Three "dimensions" were distinguished and measured: national government organizations, local government organizations, and youth care organizations. However, other organizations could also be part of managerial networking, such as interest groups and other schools. As such, the measure does not fully represent all aspects of the construct of managerial networking. In addition, as already pointed out earlier, the measurement of managerial networking only covered the frequency of contact, rather than the quality and effectiveness of contact, and which actor takes the initiative. Furthermore, with regard to job-related attitudes, one comment could be made on the use of only two items to measure the construct of work commitment. More items would have contributed to the content validity. Moreover, only the dimension of normative commitment was measured, whereas affective and continuance dimensions were left out. The other job-related attitudes, work autonomy and work engagement, consisted of respectively 5 and 6 items, measuring different dimensions of the constructs in accordance with existing literature. With regard to school performance, it has already been pointed out earlier that only CITO test scores might not provide a complete picture of the performance of a school. Inter alia, pupil weights, teachers' assessments, and social and cognitive development of students are also indicators of school performance, but those were not taken into account in this study.

Internal validity. Since this is a correlation design, inferences about causality cannot be made. Based on the results of the analysis, I can only conclude that there is a relationship between work commitment and the relationship between managerial networking and school performance in the research context of Dutch primary education. Reversed causality cannot be ruled out; it might be either the case that school principals of low-performing schools seek more contact with external actors or that more frequent managerial networking leads to lower performance. In addition, it might be the case that an omitted variable is at play: as mentioned in the discussion of the results, pupil weights were not controlled for in the analysis. They might also influence the average CITO test scores. However, I did control for other relevant factors (also based on the existing literature): age, experience as a school principal, and level of completed education.

External validity. The sample size ($n = 545$) used for the analysis was quite large. The outcomes of this thesis can be generalizable to school leaders in the Netherlands, but since educational sectors may differ greatly across different countries, generalizability to other countries may be complicated. For example, Dutch primary schools are dependent on national funding, whereas American public schools are funded by federal funds, state funds, and local school district property taxes (Van den Bekerom, 2016). This could also account for a different relationship with external actors. Moreover, the outcomes of this thesis can be generalizable to public organizations that are similar to Dutch primary schools. Van den Bekerom (2016, p. 160) argued that Dutch primary schools are relatively small public organizations, that are managed by school principals who are highly autonomous, and whose primary beneficiaries are their clients. She listed several examples: home-care agencies, daycare centers, nursing homes, and child welfare organizations. These types of organizations are also characterized by results-based evaluations. The sample of school principals may be representative of the population at large, although it might be the case that school principals who feel negatively about filling out surveys or were too busy are not represented in the sample, indicating a selection bias. Also, the response rate was only 13.29%, although scholars who used this data set before considered this substantial (Van den Bekerom, 2016).

6.5. Limitations & future research

Additional to the limitations in validity and reliability, the present study also has a number of general limitations. I will also present directions for future research.

First, in the discussion section of this chapter, I already mentioned the exclusion of internal management and team involvement in the analysis. Including those variables in future research would lead to a more comprehensive overview of the bigger picture of school performance.

Moreover, I already discussed that the measure for managerial networking might have been limited in accurately testing managerial networking needed to test the hypothesis since I made no distinction between the managerial networking activities with respectively national government, local government, and youth care organizations. Although internal consistency (Cronbach's $\alpha = 0.749$) was acceptable, a distinction would have provided a more complete depiction of managerial networking activity. This would be interesting for future research to look at.

Also, the measure of managerial networking is highly simplified as it only measured the frequency of contact with external actors. As such, it ignores other aspects of networking, such as the quality and effectiveness of the contact (how well it serves its purposes), the nature of the contact (does it take place via e-mail, face-to-face, individually, or in groups), the reasons for contact, who takes initiative in establishing the contact, and strategic considerations (also pointed out by O'Toole & Meier, 2011). Therefore, I recommend enriching the existing body of literature with qualitative research, which could be used to get a more complete picture of what managerial networking entails in practice and how the underlying process actually works.

Additionally, since I used a pre-existing data set, I relied upon the job-related attitudes of work autonomy, work engagement, and work commitment that this data set provided me with. However, other job-related attitudes might have been interesting as well, such as public service motivation (given that primary school principal is a job in the public sector) and job satisfaction (given the trend that there is a personnel shortage in primary and secondary education; NOS, 2021). Focusing on a wider range of job-related attitudes in future research might contribute to a more thorough understanding of their effects with regard to managerial networking and organizational performance.

Furthermore, it can also be argued that taking the CITO test scores as a school performance indicator might not give the complete picture of school performance. As I explained in the chapter on the research context of Dutch primary education, the average CITO test scores are not the only indicators of performance used by the Dutch Inspectorate of Education. Besides students' results, the social and cognitive development, level of social security, signals from teachers, parents, and students, and the change in student numbers at school are also taken into account. Moreover, school

results are assessed based on “pupil weights”: categories that are based on specific students’ characteristics. This makes that schools are assessed differently based on these pupil weights. In this study, these pupil weights were not accounted for. This could also have influenced the outcomes. Thus, my recommendations for future research would be to include additional performance indicators and pupil weights to get a more multi-faceted understanding of school performance.

In addition, measuring performance through the CITO test results of 2014 means that this is based on one moment and one class. The CITO test is a “snapshot”; students could have had a bad day, their teacher could have been ill for some weeks or months during the year, or the students that took the test in 2014 were generally underperforming. I would recommend conducting more longitudinal research to look at performance over time.

Besides, this study has also not taken into the direct influence that teachers may have had on the outcomes. In the end, teachers are key to student performance, as they are the ones teaching the students the subjects of arithmetic, Dutch language, and study competences. Also, teacher-student relationships are widely recognized as a fundamental part of good education and highly influential for student performance (e.g. Jederlund & von Rosen, 2022), which is also not considered in this study. It would be useful to also take this into account in future research efforts.

Furthermore, although this study found a significant positive effect of work commitment, only normative commitment was examined. Research points out that affective commitment is also relevant in the public context (e.g. Hodgkinson et al., 2018), which makes this also an interesting factor to consider in future research. Also, it would be interesting to look at the effect of work commitment on internal networking activities and school performance.

Finally, future research could incorporate other theoretical mechanisms through which job-related attitudes may be at play in managerial networking behavior. The current study has focused on job-related attitudes as moderators; perhaps a mediating influence would also be useful to look at. Moreover, future research could apply the theories and hypotheses proposed in this study in other research contexts, countries, or public organizations, to again get a better picture of the effect of job-related attitudes.

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