

## **Implementing change in public organizations:**

The relationship between leadership and affective commitment to change  
in a public sector context

Joris van der Voet MSc.

Dr. Ben S. Kuipers

Dr. Sandra Groeneveld

[vandervoet@fsw.eur.nl](mailto:vandervoet@fsw.eur.nl)

Department of Public Administration

Erasmus University Rotterdam

The Netherlands

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## **Abstract**

Public organizations often need to implement changes in the governance, design and delivery of public services. However, little is known about the implementation of organizational change in a public sector context. Because little will change without the cooperation of employees, the successful implementation of organizational change greatly depends on the acceptance or support of employees. In this study, we propose and test a theoretical framework concerning the relationship between transformational leadership behavior and affective commitment to change in a public sector context. A survey was conducted in an organizational unit of the Dutch city Rotterdam. Structural Equation Modeling was used to analyze the data. While the change leadership literature emphasizes the role of executive managers during change, we conclude that the transformational leadership behavior of direct supervisors is an important contribution to the successful implementation of change. We draw on change management theory to explain how direct supervisors contribute to processes of organizational change, thereby increasing affective commitment to change among employees. Furthermore, the results show how the specific context of public organizations determines the transformational leadership behavior of direct supervisors.

## **1 Introduction**

Public organizations often need to implement changes in the governance, design and delivery of public services (Pollitt & Bouckaert, 2004; Fernandez & Rainey, 2006). The implementation of such organizational changes is a considerable challenge for public sector organizations (Kelman, 2005; Isett, Glied, Sparer & Brown, 2012; Piening, 2013; Karp & Helgø, 2008; McNulty & Ferlie, 2004). Despite the importance of organizational change for public management practice, organizational change is generally not studied as an implementation problem in public management research (Stewart & Kringas, 2003; Olsen, 1991). While many studies have focused on change in the public sector, the public management literature has considerable shortcomings from the perspective of the implementation of organizational change (Kuipers, Higgs, Kickert, Tummers, Grandia & Van der Voet, in press).

Public management research concerning organizational change is often focused at organizational changes on the sector or national level, rather than the organizational level (e.g. Kickert, 2010; Askim, Christensen, Fimreit & Læg Reid, 2009; De Boer, Enders & Lysete, 2007; Pollitt & Bouckaert, 2004). Moreover, studies tend to emphasize the content of change (e.g. By, Diefenbach & Klarner, 2008; Wise, 2000), rather than the processes through which organizational change is implemented (Kuipers et al., in press). In addition, while several studies have suggested that the specific characteristics of public organizations make implementation of change in public sector organizations distinct from the private sector (By & Macleod, 2009; Klarner, Probst & Soparnot, 2008; Karp & Helgø, 2008; McNulty & Ferlie, 2004), recent studies do not take into account how the implementation of change is influenced by the specific context of public organizations (e.g. Isett et al., 2012; Tummers, Steijn & Bekkers, 2012; Liguori, 2012; Chustz & Larson, 2006; Stewart &

O'Donnel, 2007). A final shortcoming is that public management research rarely connects the implementation of organizational change to the actual effects or outcomes of change (Kuipers et al., in press). Because of this, claims about 'successful' change are often unreliable (Pettigrew, 2000; Boyne, 2006).

For theory about the implementation of organizational change, we must rely predominantly on research in private sector organizations (Stewart & Kringas, 2003; Thomas, 1996). A central position in change management theory is that the successful implementation of organizational change greatly depends on the acceptance or support of employees (Bartunek, Rousseau, Rudolph, & DePalma, 2006; Herold, Fedor & Caldwell, 2007). Many authors stress the importance of employee affective commitment to change for the successful implementation of change (Conner & Patterson, 1982; Herold et al., 2008; Liu, 2010). The concept has been positively related to change-related behaviors (Meyer et al., 2007; Jaros, 2010). As such, affective commitment to change is generally seen as an important condition for the successful implementation of change (Herscovitch & Meyer, 2002; Conner & Patterson, 1982).

A second premise of change management theory is that employee support for change is not only dependent on the content of change, but also on the way organizational change is implemented (Armenakis & Bedeian, 1999; Pettigrew, Woodman & Cameron, 2001; Self, Armenakis & Schraeder, 2007). Leadership is generally seen as a crucial factor in order to create affective commitment to change among employees in both the private sector (Rowland & Higgs, 2005, 2010; Kotter, 1996; Gill, 2003) and the public sector (Issett et al., 2013; Karp & Helgø, 2008). Research on the leadership of change is concentrated on the activities of change agents aimed at promoting a certain change initiative (e.g. Higgs & Rowland, 2005,

2010). Other research has identified leadership styles that are more generally seen as relevant and effective during organizational change (Bass, 1985; Shamir & Howell, 1999; Conger, 1999). Although the influence of leadership on commitment to change is rarely challenged, little empirical evidence exists (Burke, 2010; Herold et al., 2008).

In this paper, we propose and test a framework of the relationship between leadership and affective commitment to change during in public sector organizations. Because leadership takes place in the context of the organizational change process (Higgs & Rowland, 2005, 2010; Van der Voet, Groeneveld & Kuipers, in press), we incorporate the process of change in our framework. Change management theory distinguishes between programmatic and planned change processes versus more developmental and devolved change processes (Sminia & Van Nistelrooij, 2006; By, 2005, Bamford & Forrester, 2003; Burnes, 1996, 2004). These processes are referred to as the planned and emergent approach to change (cf. Burnes, 2004; By, 2005; Weick, 2000, Kuipers et al., in press). Both types of change process rely on leadership to be enacted (Beer & Nohria, 2000; Van der Voet, Groeneveld & Kuipers, in press).

Moreover, prior research on leadership has emphasized the importance of contextual factors (Pawar & Eastman, 1997; Shamir & Howell, 1999). Leadership behavior is shaped by the context in which leaders operate (Zaccaro, 2001). Our framework therefore accounts for how leadership may be affected by contextual factors. More specifically, the framework incorporates how the implementation of change and its leadership may be influenced by the specific characteristics of public sector organizations (e.g. Boyne, 2002; Rainey, 2003). By doing so, the study is intended to contribute to a growing line of research about the implementation of

organizational change in the public sector (By & Macleod, 2009; Klarner, Probst & Soparnot, 2008; Karp & Helgø, 2008; McNulty & Ferlie, 2004).

Using structural equation modeling, we propose and test a theoretical framework that accounts for the relationship between leadership and affective commitment to change in public organizations. Next to a direct relationship, the model explains the relationship between leadership and commitment to change through the different change processes to which leadership can be expected to contribute. Moreover, the model explicitly incorporates the public sector context by examining how the specific characteristics of public organizations may influence leadership. Our main research question is: *How does leadership influence affective commitment to change in a public organization?*

In section 2, we introduce our theoretical framework for the relationship between leadership and affective commitment to change in public sector organizations. In section 3, we discuss the methodological issues of the study. Section 4 covers the analysis and results. Section 5 consists of a discussion of the results, as well as the limitations of the study and recommendations for future research. The conclusion is presented in section 6.

## **2 Theoretical framework: The relationship between leadership and commitment to change in public organizations**

In this section, we propose a theoretical framework that accounts for relationship between leadership and affective commitment to change in a public sector context. Because the successful implementation of organizational change requires changes in

the behaviors and attitudes of employees, we focus our attention on the employee level. We build on change management and leadership theory in order to explain the relationship between leadership and affective commitment to change among employees. Existing theory about change management is mostly appropriate for executive level leaders (e.g. Kotter, 2003; Miller, 2001). However, the role of lower level managers is recognized to be especially important during the implementation of change (Burke, 2010). We focus our attention how the leadership behavior of direct supervisors contributes to the successful implementation of organizational change (cf. Van Dam, Oreg & Schyns, 2007; DeVos, Buelens & Bouckennooghe, 2007). The framework accounts for how their transformational leadership behavior influences commitment to change, and stimulates the occurrence of planned and emergent processes of change in the organization. Finally, the framework accounts for the specific external environment and organizational structure that typically characterizes public organizations. We argue that these contextual factors may impact the transformational leadership behavior of direct supervisors, and as such the processes through which the implementation of change comes about.

In order to account for the outcomes of change implementation, researchers often focus on the attitudes of employees regarding change (Herold, Fedor, Caldwell & Liu, 2008; Self, Armenakis & Schraeder, 2007; Walker, Armenakis & Berneth, 2007). In this study, we include affective commitment to change as an outcome variable (Herscovitch & Meyer, 2002; Armenakis et al., 1999). Herscovitch & Meyer (2002) and Meyer et al. (2007) conclude that commitment to change is an important antecedent of the behavioral intentions of employees to support organizational change. We focus on affective commitment to change, as it is suggested to be the

strongest predictor of employee change behavior (Herold, Fedor, Caldwell & Liu, 2008; Rafferty & Restubog, 2009; Herold, Fedor, Caldwell, 2007). Herscovitch & Meyer (2002: 475) define affective commitment to change as “a desire to provide support for the change based on a belief in its inherent benefits”.

A central position in the literature on change management is that the way an organizational change initiative is received by employees is dependent on the process of implementation (Burke, 2010; Armenakis & Bedeian, 1999). As such, the way in which organizational change is implemented - the process of change – is an important antecedent of the commitment to change of employees. The literature on change management distinguishes between planned and emergent change processes (cf. Kickert, 2010; By, 2005; Burnes, 2004). Planned processes of change are top-down and programmatic. The objectives of change are formulated in advance. Planned processes of change rely heavily on the role of management (Bamford & Forrester, 2003). Top-down communication is the main mechanism of creating support for change among employees. Through a process of ‘telling and selling’, managers disseminate information to inform employees about the change and why they should be committed to implementing it (Russ, 2008).

Change can also be implemented through a more devolved and bottom-up process. In this study, we refer to such change processes as emergent change (cf. Kuipers et al., in press). Emergent changes rely more on the participation of employees. Employees are seen as active participants in the change process (Russ, 2008). The management of the organization may initiate emergent changes, but they do not formulate detailed objectives of change. The mechanisms of creating commitment to change are both communication and participation: instead of only being informed about the change, employees are invited to participate in the



implementation of change. A high quality of change information and a high degree of participation are both assumed to be positively related to the acceptance and support of change by employees (Rafferty & Restubog, 2009; Bartunek, Rousseau, Rudolph, & DePalma, 2006; DeVos, Buelens & Bouckenooghe, 2008). A planned process of change is expected to result in a high quality of communication. Emergent processes of change are expected to stimulate both the quality of communication and the degree of participation. High quality communication and a high degree of participation are both expected to positively influence employee affective commitment to change.

The role of leadership is generally seen as essential during the implementation of organizational change (Burke, 2010; Herold et al., 2008; Kotter, 1996). Attention is often focused on senior management or the guiding coalition of change (Kotter, 1996; Fernandez & Rainey, 2006) Moreover, the importance top management support for a change initiative is often highlighted (e.g. Holt, Armenakis, Feild & Harris, 2007). While the role of senior management is often emphasized during the initiation of change, direct supervisors play an important role during the implementation of change (e.g. Allen, Jimmieson, Bordia & Irmer, 2007; Van Dam, Oreg & Schyns, 2007; DeVos, Buelens & Bouckenooghe, 2007). We focus our attention on the leadership behavior of direct supervisors, rather than for example the relationship between employees and their supervisor or the supervisor's personal characteristics.

The main leadership theory that emphasizes organizational change is the theory of transformational leadership (Bass, 1985; Eisenbach, Watson & Pillai, 1999). The core of the transformational leadership theory is that "by articulating a vision, fostering the acceptance of group goals, and providing individualized support, effective leaders change the basic values, beliefs, and attitudes of followers so that they are willing to perform beyond the minimum levels specified by the organization"

(Podsakoff et al., 1996, p. 260). Authors regularly emphasize the importance of transformational leadership during change, but there is little empirical evidence concerning the relationship between transformational leadership and employee responses to change (Burke, 2010). Some studies have reported a direct relationship between transformational leadership and commitment to change (e.g. Oreg & Berson, 2011; Herold et al., 2008). However, Carter et al. (2012) and Bass et al. (2003) suggest that more attention is needed for the mediating mechanisms that account for the influence between transformational leaders and employee outcomes. Rather than a direct relationship between leadership and commitment to change, other studies suggest that leaders actively shape the approach to implementing organizational change (Higgs & Rowland, 2005, 2010; Kavanagh & Ashkanasy, 2006). The transformational leadership behavior of direct supervisors may thus affect the characteristics of the change process through which organizational change is implemented, which will in turn have an effect on employee commitment to change.

Transformational leadership can be expected to stimulate both planned and emergent changes. Transformational leaders contribute to planned change, because they recognize the need for change, create and communicate appealing visions for change and inspire and motivate employees to implement organizational change (Bass, 1999; Pawar & Eastman, 1997; Carter, Armenakis, Feild & Mossholder, 2012). While transformational leaders may stimulate changes in a directive way, they also seek employee participation by stimulating cooperation and delegating authority to employees (Bass, 1985). Moreover, transformational leaders stimulate their employees to find innovative and creative solutions in their work by thinking outside of the box and by addressing old problems in new ways (Bass et al, 2003; Yukl, 2000). So next to prescribing the vision of change in a top-down manner,

transformational leaders may also stimulate bottom-up changes in the organization. Transformational leaders can thus be expected to contribute to change commitment by stimulating both planned and emergent changes within the organization.

In our framework, we account for the specific external environment and organizational structure of public organizations. The organizational environment and the organizational structure are central concepts in the classic studies on organizational change (Burns & Stalker, 1961; Aiken & Hage, 1968; Lawrence & Lorsch, 1967; Mintzberg, 1979). Moreover, several recent studies have suggested that the implementation of organizational change may be affected by the specific environment and structural characteristics of public organizations. For example, Fernandez & Rainey (2006) and Burnes (2009) have focused on how the pluralistic, political environment of public environments comes into play during processes of organizational change. Coram & Burnes (2001) and Isett et al. (2012) argue that the bureaucratic organizational structures that typically characterize public organizations may have a bearing on the implementation of organizational change. There is much evidence that transformational leadership is contingent on contextual factors (Conger, 1999; Pawar & Eastman, 1997; Shamir & Howell, 1999). We therefore theorize that certain specific characteristics of public sector organizations (cf. Rainey, 2003; Boyne, 2002; By & Macleod, 2009) may influence the transformational leadership behavior of direct supervisors during processes of change (e.g. Wright & Pandey, 2009).

Public organizations can be said to operate in a relatively complex environment, which is characterized by a multitude of stakeholders, ambiguous and often conflicting objectives, a high level of scrutiny and external political influences on decision-making processes (Rainey, 2003; Boyne, 2002, By & Macleod, 2009;

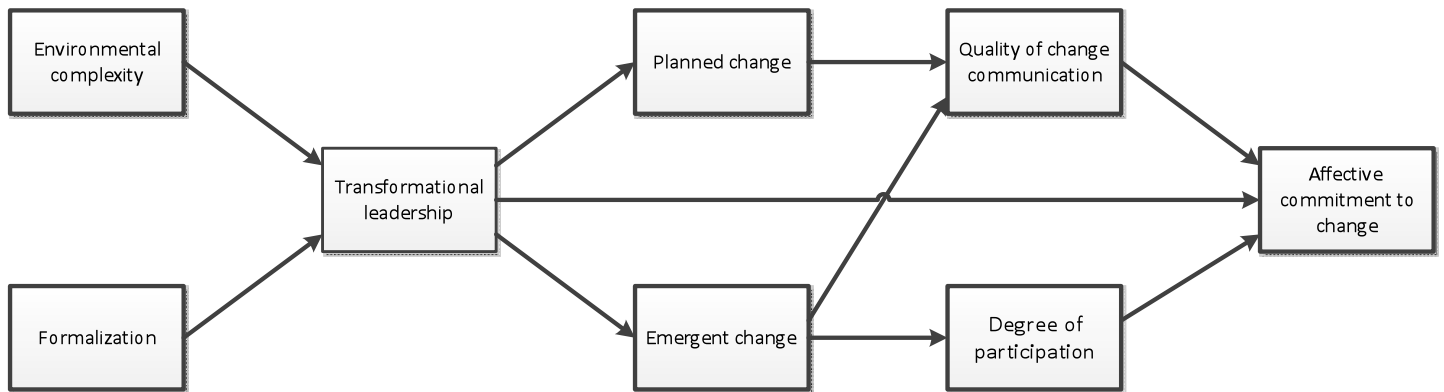
Piening, 2013). The degree of environmental complexity refers to the number of factors on which the organization is dependent, and the degree to which these factors are dissimilar (Duncan, 1972). Shamir & Howell (1999) argue that a high degree of complexity stimulates transformational leadership behavior, because it is difficult to routinize organizational operations in these conditions. Employees therefore rely on their supervisor to provide meaning and vision in order to execute their tasks. Similarly, Karp & Helgø (2008) have highlighted the need for leadership during processes of organizational change in the public sector, because of its complex and chaotic character. We therefore expect that a high degree of environmental complexity is positively related to the transformational leadership behavior of direct supervisors.

Public organizations are often described as being relatively bureaucratic (Rainey, 2003; Boyne, 2002). While several recent studies have highlighted centralization as a key characteristic of public organizations (e.g. Andrews, Boyne, Law & Walker, 2009; Wright & Pandey, 2009; Moynihan & Pandey, 2005), a high degree of formalization can be seen as the defining characteristic of bureaucracies (Mintzberg, 1979). Formalization can be defined as the degree to which organizational activities are manifested in written documents regarding procedures, job descriptions, regulations and policy manuals (Hall, 1996). A high degree of formalization can be expected to reduce the transformational leadership behavior of direct supervisors. When the operations of public organizations are to a large extent based on rules and procedures, there is little need for transformational leadership behavior aimed at the beliefs, values and attitudes of employees (Conger, 1999; Pawar & Eastman, 1997). Moreover, Mintzberg (1979) states that lower level managers will be more occupied with rule-compliance and control in highly

formalized organizations. A high degree of formalization is therefore expected to be negatively related to transformational leadership behavior of direct supervisors. By reducing their transformational leadership, direct supervisors in a highly formalized organization are thus less likely to contribute to planned and emergent processes of change.

Summarizing, we argue that the role of leadership is central in the implementation of change in public organizations. Transformational leadership is expected to have a direct effect on affective commitment to change. Furthermore, prior studies suggest that transformational leadership behavior may also stimulate planned and emergent processes of change. Planned change processes aim to create commitment to change through top-down communication, whereas emergent processes of change highlight both communication and participation. As such, transformational leadership behavior may also indirectly contribute to the creation of commitment to change by stimulating planned and emergent processes of change. In order to account for the public sector context of public organizations, we incorporate the degree of environmental complexity and formalization in our model. Environmental complexity is expected to increase transformational leadership behavior, while formalization will diminish transformational leadership. The specific public sector context thus influences the implementation and outcomes of organizational change by simultaneously stimulating and constraining transformational leadership behavior of direct supervisors. A visualization of our theoretical model is given in figure 1.

Figure 1: The implementation of change in public organizations



### 3 Methodology

#### 3.1 Design and case selection

The study is based on a case study design. A recent organizational change in the City Works Department of the Dutch city Rotterdam is selected as a case. The City Works Department is responsible for directing the realization of infrastructural, spatial planning, as well as the maintenance and upkeep of the city's public grounds. Due to administrative reforms in the city as a result of the economic crisis, the organization is to be split up and merged into different administrative clusters. This separation is referred to as the 'disentanglement' in the organization. In June 2012, the organizational change process was finalized with the dissolving of the City Works Department. Despite the fact that we study an organizational change in a single organization, we expect variation on our variables concerning transformational leadership, environmental complexity and formalization due to the great range of tasks performed by the organization. Some departments consist of highly educated

engineers, while most employees in other departments have had a lower or professional education.

### *3.2 Methods and analysis techniques*

The study uses a survey method. Quantitative data concerning the key variables of the study were collected using an online survey. In October 2012, all employees of the Engineering Bureau and Public Works sector were asked to participate in an online survey. In all, 516 out of 1450 employees completed the questionnaire (35,5%). However, there were some occasional missings in the data file. The highest missing count on a single item was 9. Per item, an average of 3 out of 516 respondents had failed to provide a valid answer. For the analysis, missings were estimated using AMOS 18 software.

Structural equation modeling (SEM) is used as a method to account for the interrelations between our key variables. The reasons for adopting a SEM approach is that it allows to simultaneously assess the influence of multiple independent variables on multiple dependent variables, as opposed to for example multiple linear regression. Our model of change implementation in public organizations consists of a number of relationships. Using SEM, we can test the entire model, rather than all relationships separately. Another advantage of SEM is that the observed, indicator variables can be included in the analysis, as opposed to only constructed variables, which leads to more valid conclusions on the construct level. All variances and co-variances in the model are estimated simultaneously. We emphasize that the model is not aimed at exploring all possible relationships between our concepts. Rather, we use SEM to test to what extent our proposed theoretical framework fits the data, and as such to what

extent it may serve as an explanatory framework for the implementation of change in public organizations.

### *3.3 Measures*

A full list of measures is given in appendix A. All concepts were measured using a five point Likert scale, except for the measure of formalization which was measured on a four point scale.

*Affective commitment to change.* The six item scale for affective commitment to change by Herscovitch & Meyer (2002) was used to measure affective commitment to change. Example items are “I believe in the value of this change” and “This change serves an important purpose”.

*Quality of change communication.* This concept was measured using a seven item scale by Bordia, Hunt, Paulsen, Tourish & Difonzo (2004) with seven point scale. The lead-in of the measure is “The official information provided about the change ...”. Example items are “Kept you informed throughout the change process, even after the official announcement” and “Communicated the reasons for the change”.

*Degree of participation.* The degree of participation was measured using a three item scale by Lines, Selart, Espedal & Johansen (2005) with a seven point scale. Example items are “I was allowed to participate in the analyses that were performed prior to the change” and “I was allowed to participate in the development of the change”.



*Planned and emergent change.* The only available measure for planned and emergent change is proposed by Farrell (2000). However, there are shortcomings concerning the internal consistency as well as the conceptual range of both concepts. The scale by Farrell (2000) for planned change includes items that account for the top-down, management-driven and controlled nature of planned change. However, items that account for the clearly formulated objectives (By, 2005), the desired future state (Burnes, 1996, 2004) and the emphasis on the resolution of conflict (Burnes, 2009) are not included. The original measure for emergent change includes aspects of organizational learning and environmental adaptation, but misses aspects of the local, bottom-up, participative nature of emergent change (Bamford & Forrester, 2003) and its emphasis on improving organizational capability (Beer & Nohria, 2000; Weick, 2000). Seven additional items were formulated to broaden the conceptual range of these concepts. The lead-in of this measure is “The implementation of the organizational change ...”. Example items of these scales are “Occured through a systematic process of well-managed events” and “Is part of an ongoing process of adapting to our environment”. Based on exploratory and confirmatory factor analyses, several items were excluded from the analysis (cf. Farrell, 2000). The original, additional and excluded items are given in Appendix A.

*Transformational leadership.* The transformational leadership measure of Podsakoff, MacKenzie, Moorman, & Fetter (1990) was applied. This measure consists of 21 items and contains the dimensions articulating vision, providing appropriate model, fostering acceptance goals, high performance expectancy, individual support and intellectual stimulation. The lead-in of the question is “My direct supervisor ...”. Example items are “gets the group to work together for the same goal” and “is always seeking new opportunities for the organization.”

*Environmental complexity.* A measure for environmental complexity was taken from Volberda & Van Bruggen (1997). The measure consists of four items. In the items, the word “market” was replaced by “environment”. Example items are “In our environment, everything is related to everything” and “In making decisions in our environment a lot of variables should be taken into account”.

*Formalization.* Dewar, Whetten & Boje (1980) state that the discriminant validity of the Aiken & Hage (1968) scale for formalization is unsatisfactory. An alternative measure is proposed by Deshpande & Zaltman (1982). We apply a shortened version of this scale that is also used by Jaworski & Kohli (1993). The scale consists of 7 items. Example items are “I feel that I am my own boss in most matters” and “People here are allowed to do almost as they please (R)”.

## **4 Analysis and results**

The analysis consists of three steps. First, exploratory factor analyses (EFA) are done to assess the construct validity of the measures for planned and emergent change. Second, a confirmatory factor analysis (CFA) is done to assess to what extent the entire measurement model fits the data. Third, a structural model is proposed according to the theoretical framework. This model is tested to assess the relationships between the individual variables in the model, as well as the fit of the framework as a whole.

### *4.1 Exploratory Factor Analysis*

Because all measures were self-reported and collected among a single group of employees, the data may be subject to common method bias (Meier & O'Toole, 2012). Harman's single factor test for common variance was done using exploratory factor analysis in order to test the presence of common method variance (Podsakoff et al, 2003). An exploratory factor analysis was done in which all items were restricted to a single factor. The single factor accounted for only 28% of the variance in the data. Moreover, as is evident in the next section, the data fit all constructs in the measurement model as intended. The results do not rule out the possibility of common method variance, but the results do indicate that common method variance is not likely to greatly influence the results of the analysis.

In order to assess the construct validity of the measures for planned and emergent change and the additional items, exploratory factors analyses were performed in SPSS 18. The results of the EFA are given in table 1 and 2. The measure for planned change results in three factors with an eigenvalue greater than 1. Five items load on the first factor, which accounts for 33,65% of the variance. The EFA of the measure for emergent change results in two distinct factors. Six items load on the first factor, which accounts for 33,26% of the variance.

Table 1 and 2: Exploratory Factor Analysis planned and emergent change

<b>PLANNED</b>				<b>EMERGENT</b>		
<b>Pattern Matrix</b>				<b>Pattern Matrix</b>		
	Component				Component	
	1	2	3		1	2
PLA1	-.028	-.078	.940	<b>EME1</b>	<b>.796</b>	.002
PLA2	.213	.514	.254	<b>EME2</b>	<b>.676</b>	-.001
<b>PLA3</b>	<b>.675</b>	-.282	-.206	<b>EME3</b>	<b>.640</b>	.081
PLA4	-.204	.862	-.090	EME4	.097	.666
<b>PLA5</b>	<b>.565</b>	.337	-.074	<b>EME5</b>	<b>.742</b>	-.106
<b>PLA6</b>	<b>.768</b>	.100	-.017	EME6	.028	.687
<b>PLA7</b>	<b>.703</b>	-.020	.234	EME7	-.120	.696
<b>PLA8</b>	<b>.773</b>	.066	.013	<b>EME8</b>	<b>.637</b>	-.042
PLA9	.325	.574	-.103	<b>EME9</b>	<b>.709</b>	.071

#### *4.2 Confirmatory Factor Analysis*

A Confirmatory Factor Analysis (CFA) was executed in AMOS 18 to assess the fit of the data to the total measurement model. Items for planned and emergent change were included as suggested by the EFA. The CFA made apparent that three items of the scale for formalization were not significantly related to this concept's latent construct (see Appendix A). These items were thus excluded from the analysis. A range of fit indices was used to assess the fit of the total measurement model. The CMIN/DF of the measurement model is 1.995. A score between 1 and 5 is generally seen as an adequate fit. A score lower than 2 indicates a good fit. The Comparative Fit Index (CFI) of the measurement model is .92, which can be seen as acceptable (Byrne, 2010; Kline, 2005). The RMSEA of the measurement model is .044, which should ideally be below 0.05. The PCLOSE value is 1.000, which should be greater than .5

(Byrne, 2010. Based on these fit indices, we assume that the measurement model fits the data well.

Before estimating the structural equation model that accounts for the relationships identified in the theoretical framework, we first look at the descriptive statistics and internal consistency of our concepts, as well as the correlations between these concepts. In table 3, the means, standard deviations (S.D) and the correlations of all variables are given. The Cronbach's Alpha's (CA) of all variables are given in parentheses.

The mean of the dependent variable in the model, affective commitment to change, is around the theoretical mean of the scale. The average quality of change communication is 2.87, while the average degree of participation is 2.30. Moreover, on average, processes of change have more characteristics of planned change than of emergent change. The mean of supervisor's transformational leadership behavior is 3.21. Respondents report a relatively high level of environmental complexity, with an average score of 3.90.

The CA of all variables, except formalization, is above the minimally accepted level of .70 (Kline, 2005). The CA of formalization is only .65, which is generally seen as unsatisfactory. However, DeVellis (1991) states that a value lower than .65 can be seen as minimally acceptable.

The correlation matrix indicates that affective commitment to change is significantly related to the quality of communication ( $r = .443$ ) and the degree of participation ( $r = .422$ ). Supervisors' transformational leadership behavior is significantly related to affective commitment change ( $r = .362$ ), planned change ( $r = .304$ ) and emergent change ( $r = .446$ ). Moreover, both environmental complexity ( $r =$

.195) and formalization ( $r = -.194$ ) are correlated with transformational leadership behavior. We conclude from the correlation analysis that all expected relationships between variables in the conceptual framework are significantly correlated.

Table 3: Cronbach's Alpha and correlation matrix

	Mean	S.D.	1	2	3	4	5	6	7	8
<b>1 Affective Commitment to Change</b>	3.04	.78	(.87)							
<b>2 Quality of Communication</b>	2.87	.70	.438***	(.86)						
<b>3 Degree of Participation</b>	2.30	.97	.396***	.543***	(.92)					
<b>4 Planned change process</b>	3.12	.62	.314***	.545***	.240***	(.74)				
<b>5 Emergent change process</b>	2.79	.67	.552***	.573***	.462***	.385***	(.80)			
<b>6 Supervisors' Transformational Leadership Behavior</b>	3.21	.71	.362***	.497***	.368***	.311***	.464***	(.95)		
<b>7 Environmental Complexity</b>	3.90	.55	.203***	.085	.095*	.047	.143**	.179***	(.82)	
<b>8 Formalization</b>	2.59	.47	-.093*	-.177***	-.101*	-.050	-.170***	-.140***	-.124**	(.65)

#### 4.3 Structural model

A structural model was tested that accounts for the relationships outlined in the theoretical framework. The CMIN/DF is 2.10 and the CFI of the model is .905. These fit indices indicate that the structural model has a reasonable fit with the data. The RMSEA and PCLOSE indicate a good fit with scores of approximately .046 and .997.

The standardized regression weights for all relationships in the structural model are given in table 4. The estimates of the structural model indicate that a high

degree of participation and quality of communication both influence affective commitment to change of employees. As expected, there is also a direct, positive relationship between the transformational leadership behavior of an employee's supervisor and employee affective commitment to change. The results also shed light on the way planned and emergent change contribute to affective commitment to change. Planned processes of change are positively related to high quality change communication. However, the contribution of emergent processes of change to the quality of change communication is slightly larger. In addition, there is also a strong positive relationship between emergent processes of change and employee participation. Transformational leadership behavior of supervisors is positively related to the occurrence of planned organizational change, but even more to emergent 3

processes of change. The contextual factors in the model, environmental complexity and formalization, have a significant influence on the transformational leadership behavior of supervisors. According to the expectations in the theoretical framework, environmental complexity is positively related to transformational leadership behavior. Formalization has a negative influence on transformational leadership behavior.

*Table 4: Standardized regression weights*

Degree of Participation → Affective Commitment to Change	.246***
Quality of Communication → Affective Commitment to Change	.295***
Supervisors' Transformational Leadership Behavior → Affective Commitment to Change	.141*
Emergent change → Quality of Communication	.562***

Planned Change → Quality of Communication	.474***
Emergent Change → Degree of Participation	.605***
Supervisors' Transformational Leadership Behavior → Planned Change	.430***
Supervisors' Transformational Leadership Behavior → Emergent Change	.606***
Environmental Complexity → Supervisors' Transformational Leadership Behavior	.173***
Formalization → Supervisors' Transformational Leadership Behavior	-.220***

Apart from the relationships as a part of our theoretical framework, several other significant relationships can be identified in the data. However, the effect sizes of these additional relationships is relatively small. As is theorized in the theoretical model, the degree of environmental complexity and formalization influence the types of change processes through the leadership behavior of direct supervisors. However, formalization also has a direct negative influence on emergent processes of change ( $\beta = -.108$ ). In addition, environmental complexity is directly related to the affective commitment to change of employees ( $\beta = .150^{**}$ ). The influence of transformational leadership on the degree of participation and the quality of communication is not fully mediated by planned and emergent change processes. Direct supervisors' may also directly contribute the participation ( $\beta = .143^*$ ) and the quality of communication ( $\beta = .183^{***}$ ) with transformational leadership behavior. The data also indicates that the relationship between emergent processes of change and commitment to change is not fully mediated by participation and the quality of change communication. Emergent change has a strong, direct effect on affective commitment to change ( $\beta = .570^{***}$ ). However, this relationship renders the effect of quality of communication on affective commitment to change insignificant.



## **5 Discussion**

In order to contribute to the literature about the implementation of organizational change in public organizations, this study is aimed the relationship between leadership and affective commitment to change. This relationship is not only seen as a direct relationship. In our theoretical framework, we also draw on the change management literature to explain this relationship through planned and emergent change processes. Because of the abundance of literature on change leadership on the executive level (e.g. Kotter, 1996; Fernandez & Rainey, 2006), and the importance of lower level managers during the implementation of change (Burke, 2010), we focused our attention on the transformational leadership behavior of direct supervisors. In order to explicitly account for the specific context of public organizations, we included the organizational environment and the organizational structure in our framework.

Our structural model indicates that direct supervisors may play a central role in the implementation of change in public organizations. The transformational leadership behavior of direct supervisors directly influences the commitment to change of employees. Transformational leadership also indirectly influences affective commitment to change by increasing the occurrence of planned and emergent change processes. Moreover, the specific contextual characteristics of public organizations influence the implementation processes and commitment to change through the transformational leadership of direct supervisors.

Literature on leading change often highlights the behaviors of leaders aimed at ‘selling’ and ‘implementing’ change (e.g. Gill, 2003; Miller, 2001). Such behaviors are often positively related to change success or change-related behavior by

employees (Higgs & Rowland, 2005, 2010, Liu, 2010). While transformational leadership behavior is not directly aimed at the implementation of a certain change initiative (Herold et al., 2008), our analysis indicates that transformational leadership behavior by direct supervisors may influence employee commitment to change (cf. Oreg & Berson, 2011; Liu, 2010). More importantly however, their transformational leadership behavior also contributes to the occurrence of planned and emergent processes of change. The structural model indicates that such organizational change processes influence affective commitment to change by providing communication concerning the change and stimulating employee participation. These results indicate that, next to the change-oriented leadership behaviors of executive leaders that are often prescribed in the literature on change (e.g. Kotter, 1996; Fernandez & Rainey, 2006), direct supervisors play a central role during the implementation of change.

Recent studies have suggested that the context of the public sector may have a bearing on the implementation of change in public organizations (Fernandez & Rainey, 2006; By & Macleod, 2009; McNulty & Ferlie, 2004). We therefore explicitly accounted for the degree of environmental complexity and formalization of the organizational structure in our framework. As theorized in the theoretical framework, these factors mainly influence the implementation of change through the leadership behavior of direct supervisors. Environmental complexity is positively related to transformational leadership behavior, while formalization has a negative influence. The context of public organizations can thus be said to simultaneously stimulate and impede the leadership behaviors that contribute to the successful implementation of change. The analysis also indicates that the relationship between formalization and emergent change is not fully mediated by transformational leadership. Formalization also has a direct, negative influence on the occurrence of

emergent changes in the organization. This result thus indicates that the bureaucratic nature of public organizations may make emergent changes processes less likely to occur. Similarly, Coram & Burnes (2001) have argued that a planned process of change is most appropriate given the bureaucratic nature that is typical for many public organizations. In their study of organizational change in six Australian federal agencies, Stewart & Kringas (2003) indeed find that top-down approaches are most applied.

Although planned approaches to change may be regularly applied in a public sector context, there are also indications that a more emergent approach to change may be successful. For example, Klarner et al. (2008) and Brown et al. (2003) argue that public organizations should rely on more incremental and participative change approaches. Isett et al. (2012) argue that bottom-up approaches are an effective way to implement change in public organizations. Our results indicate that a planned approach to change may stimulate affective commitment to change by increasing the quality of change communication. However, an emergent approach to change increases contributes to employee change commitment by increasing both the quality of change communication as well as the degree of participation. Our study thus provides support for the position that a planned change approach may be more *appropriate* in public organizations, while an emergent approach to change may be more *effective* in bringing about affective commitment to change.

#### *Limitations and directions for future research*

Our study has attempted to contribute to existing research on change in the public sector by focusing on change implementation on the organizational level, by

incorporating the specific characteristics of public organizations, by accounting for the processes and leadership of change and by connecting these to the outcomes of organizational change. Another contribution is that we have attempted to progress the development of quantitative measurement instruments for central change management concepts. Because there is a need for research that can reliably test the relationships between different approaches to change and the outcomes of change (Pettigrew, 2000; Pettigrew et al., 2001; Kuipers et al., in press), a first recommendation for future research is to focus more attention on the development and validation of quantitative measurement instruments.

The design and methods of the study are also subject to several limitations. A first limitation concerns the construct and internal validity of the study's results. Because both dependent and independent variables were measured on the employee level, the relationships between the variables may be partly due to the method of data collection rather than the content of our concepts (Podsakoff et al., 2003; Meier & O'Toole, 2012). Harman's single factor test for common method variance indicated that common method variance has not likely influenced the construct validity of our variables. Moreover, the constructs fit the data as intended in the CFA. However, these tests do not assure the internal validity of our results. Causal inferences concerning the relationships in our structural model are based on theory, rather than observed temporal sequence. A second recommendation for future research is therefore to re-assess our reported findings in a multi-level or mixed methods design. Moreover, in order to assure the internal validity of conclusions, future research should build on longitudinal rather than cross-sectional designs.

A second limitation concerns the external validity of our results. Because of our case-based design, we have only studied a single organizational change in a single

organization. Statistical generalization is thus limited to our selected case. As a consequence, the results of our study may not apply in different types of organizational change or different organizational settings. This limitation can be seen as a shortcoming on much of the research on change management; it is often difficult to reproduce or compare results organizational, historical and contextual differences. A third recommendation for future research is therefore to increase academic attention for the implementation of organizational change in a public context. More importantly, future research should explicitly focus on the influence of the specific characteristics in order to allow theoretical generalization.

## **6 Conclusions**

The objective of this study was to contribute to the literature on implementing change in public organizations by proposing and testing a theoretical framework concerning the relationship between transformational leadership behavior and affective commitment to change in a public sector context. We conclude that the transformational leadership of direct supervisors is central in the implementation of change. The data indicate a direct, positive relationship between transformational leadership and affective commitment to change. Building on change management theory, we explain how transformational leaders may contribute to unfolding of planned and emergent changes in the organization, thereby creating affective commitment to change. The complex organizational environment and formalized organizational structure of public organizations impact the leadership behavior of direct supervisors.

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## APPENDIX A: MEASURES

### Affective commitment to change (Herscovitch & Meyer, 2002)

ACC1	I believe in the value of this change.
ACC2	This change is a good strategy for this organization.
ACC3	I think that management is making a mistake by introducing this change. (R)
ACC4	This change serves an important purpose.
ACC5	Things would be better without this change. (R)
ACC6	This change is not necessary. (R)

### Planned Change (Farrell, 2000)

The implementation of the organizational change ...

PLA1	Emanated from senior management.*
PLA2	Occured through company-wide change programs. *
PLA3	Occured through changing individual knowledge and attitudes.*
PLA4	Occured in an unplanned fashion. (R)
PLA5	Occured through a systematic process of well-managed events.
PLA6	Was monitored through regular progress surveys.
PLA7	<i>Was aimed at reaching a pre-determined goal.</i>
PLA8	<i>Was based on a pre-determined timeplanning and course of action.</i>
PLA9	<i>Was a process in which all attention was focused in one direction with no disagreement.*</i>

### Emergent Change (Farrell, 2000)

The implementation of the organizational change ...

EME1	Occurs through continually learning about our environment.
EME2	Occurs by encouraging employees to understand and adapt to changing circumstances in our environment.
EME3	Is part of an ongoing process of adapting to our environment.
EME4	Is a slow process, which emerges over time.*
EME5	Is about matching the organization's capabilities to the environment.
EME6	<i>Was handled independently by the different departments in the organization.*</i>
EME7	<i>Was a process in which the objectives were not fixed at the beginning.*</i>
EME8	<i>Mainly came about through the participation of employees.</i>
EME9	<i>Was mainly aimed at creating a better understanding of the challenges facing the organization.</i>

### **Quality of change communication** (Bordia et al., 2004)

The official information provided about the change ...

- QCC1 Kept you informed throughout the change process, even after the official announcement.
- QCC2 Included information about changes to the organization's structure.
- QCC3 Addressed your personal concerns regarding the change.
- QCC4 Was accurate.
- QCC5 Gave as much information as possible.
- QCC6 Involved employees in the change process and decisions made.
- QCC7 Communicated the reasons for the change.

### **Participation** (Lines et al., 2005)

- PAR1 I was allowed to participate in the analyses that were performed prior to the change
- PAR2 I was allowed to participate in the development of the change
- PAR3 I was allowed to participate in the planning of the implementation of the change.

### **Transformational leadership** (Podsakoff et al., 1990)

My direct supervisor ...

#### *Articulating vision*

- TFL1 Is always seeking new opportunities for the organization.
- TFL2 Inspires others with his/her plans for the future.
- TFL3 Is able to get others committed to his/her dream.

#### *Provide Appropriate Model*

- TFL4 Leads by "doing," rather than simply by "telling."
- TFL5 Leads by example.
- TFL6 Provides a good model for me to follow.

#### *Foster Acceptance Goals*

- TFL7 Fosters collaboration among work groups.
- TFL8 Encourages employees to be "team players."
- TFL9 Gets the group to work together for the same goal.
- TFL10 Develops a team attitude and spirit among employees.

### *High Performance Expectancy*

- TFL11 Shows us that he/she expects a lot from us.  
TFL12 Insists on only the best performance.  
TFL13 Will not settle for second best.

### *Individual Support*

- TFL14 Acts without considering my feelings. (R)  
TFL15 Shows respect for my personal feelings.  
TFL16 Behaves in a manner thoughtful of my personal needs.  
TFL17 Treats me without considering my personal feelings. (R)

### *Intellectual Stimulation*

- TFL18 Challenges me to think about old problems in new ways.  
TFL19 Asks questions that prompt me to think.  
TFL20 Has stimulated me to rethink the way I do things.  
TFL21 Has ideas that have challenged me to reexamine some of the basic assumptions of my work.

### **Environmental complexity** (Volberda & Van Bruggen, 1997)

- ENC1 In making decisions in our environment a lot of variables should be taken into account  
ENC2 In our environment, developments are taking place which stem from all kind of directions  
ENC3 In our environment, everything is related to everything.  
ENC4 A decision in our environment influences a large number of factors.

### **Formalization** (Jaworski & Kohli, 1993)

- FOR1 I feel that I am my own boss in most matters. (R)  
FOR2 A person can make his own decisions without checking with anybody else. (R)  
FOR3 How things are done around here is left up to the person doing the work. (R)  
FOR4 People here are allowed to do almost as they please. (R)  
FOR5 Most people here make their own rules on the job.\* (R)  
FOR6 The employees are constantly being checked on for rule violations.\*  
FOR7 People here feel as though they are constantly being watched to see that they obey all the rules.\*

(R) Indicates the item was reversed for the analysis

\* Indicates the item was excluded for the analysis

Newly formulated items are given in *italics*