

# Reaching our goals!

A study of the relation between leadership behaviour, change approach, and intended effects.

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## Foreword

This thesis has its focus on the theme of leadership to change in public organisations. Since October 2003 I work for the municipality of Rotterdam. Since November 2008 I work as a team leader (middle management) for the department of Youth, Education and Society of the municipality. The municipality is going through a large change process into area and demand based working. I have seen the different approaches of leaders in my department and the municipality and I got curious about the effect of the different forms of behaviour on the change processes. The Erasmus University (Dr. B. Kuipers) and the University of Southampton (professor M. Higgs) work together to research the theme of leadership behaviour and I decided it would be a good idea to write the thesis for my Master of Public Administration studies, about the subject of leadership and change in departments in my own municipality. So here it is, my research report. The realisation took some blood, sweat and tears from me, and some patience from the people around me. Thanks for that!

## Abstract

The world around us is always changing. Public organisations adapt to this ongoing changing environment to keep on serving on the best of their abilities. The municipality of Rotterdam tries to adapt to the changing surroundings by transforming to a organisation that works area and demand based. In this study I researched the relationship between leadership behaviour, change approach and intended effect in two changing departments of the municipality. In doing this I am testing the theories of Rowland and Higgs (2008) on change approaches and leadership behaviour on the situation in the two departments. The main question of this study is:

*What behaviour and change approach of leaders in the green and blue department of the Municipality of Rotterdam is related to the effects the departments intended.*

I tried to answer this question by researching the different elements from this main question: leadership behaviour, change approach, intended effects, Furthermore I tested four hypotheses that derived from the theory about relationships between these elements.

The core of the theoretical framework is that there are several factors that influence the change outcomes. Leadership behaviour is one of these factors which also influences other factors that are important. Also the approach to change that an organisation chooses and believes in, affects the effectiveness of change. There are several ways of describing and categorising change approach. Higgs and Rowland (2005) found four approaches of which two in which change is approached as being a complex phenomena: Master and Emergent. The two in which change is seen as a straightforward process are called: Directive and Self Assembly. Master and Emergent change approach were related to successful change, whereas the Directive and Self Assembly approach were not. Rowland and Higgs also researched leadership behaviour. They found five leadership practices which in their research were related to change outcome. Four of these: Attractor, Edge and Tension, Container and Transforming Space are called the Change Leadership Practices (CLP) and these used in combination, are related to successful change outcomes. The use of the fifth practice: Shaping behaviour has a negative effect on successfulness.

The empirical part of this research is a quantitative survey amongst leaders and employees of both the departments. The survey was developed by using different questionnaires that were used in earlier research of Rowland and Higgs and by making questions from information gained from both documents and interviews with leaders of the departments. There were questions on leadership behaviour, change approach, realisation of intended effects and control variables. Both leaders and employees answered questions about their own or their leaders behaviour, and the realisation of intended effects. The data was collected through a web based survey program and statistically analysed by using statistical analysis software (SPSS).

There were 595 leaders and employees asked to attend the survey. As a response I received 293 completed questionnaires from 252 employees and 41 leaders. I used the data from the individuals, but also formed a dataset in which the answers from the teams were gathered as a team's answer. There were 29 teams of which a leader and one or more employees responded. I used factor and reliability analysis to construct scales for the variables on leadership behaviour, change behaviour and intended effects which I called outcomes. The results showed a significant difference in the scores of leaders and employees on leadership and the outcome general effect.

Leaders scored significantly higher. There was also a significant difference in the scores of both departments on straightforward change approach.

There are interesting significant correlations between the four change leadership practices and the outcome for working together and general effect. There are also correlations between the outcome: district and change approaches and also between the CLP and the straightforward change approach. These are further investigated in the regression analysis. This showed that there is a direct positive relationship between the outcomes working together and general effect, and the four change leadership practices. This is a small effect for working together, but a medium to large effect for the outcome: general effect. There is no direct relationships between outcomes and change approach. Although shaping behaviour has positive and significant correlations with the outcome general effect, I didn't find a direct relation in the regression analysis.

To answer my main question I conclude that the results of this study lead to believe that the four changing leadership practices have a positive direct relationship with the intended effects of the change process in the departments. Leadership behaviour seems to have a more evident impact on the intended effects than change approach seems to have. I found no evidence that shaping behaviour influences the outcomes of the change process. I recommend to broaden the measurement on outcomes in further studies, because by using intended effects I only used one part of this concept. And also because I found relationships between leadership and outcome for only part of the intended effects. I recommend also further research to interaction effects between leadership practices and change approach. By using SPSS, I didn't find any. I recommend the departments to invest on the use of the four Change Leadership Practices and in keeping leaders in their positions during a change process. Because this also added to a positive effect.

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# 1. Introduction

The world around us is always changing. For organisations to be able to sell products they should adapt to this ongoing changing environment. For public organisation, that don't sell but exist to serve the people, it is necessary to also adapt to the surroundings to keep on serving to the best of their abilities. This research is focused on the way the behaviour of the leaders in two departments of the municipality of Rotterdam influences the outcome of the change process that is going on in the municipality. More in specific it focuses on the change from a centralised to a decentralised focus point and from a theoretical to a more practical way of attacking a problem.

## 1.1 Institutional change in relation to society

All over the world private and public institutions go through change processes. As commercial organisations try to adjust to changing market demands, governmental organisation try to adjust to changing demands from society. The goal is to serve the public interest in a better way, but there are no conclusions for the way in which this is done best.

Crozier (1982) wrote about change from a societal and governmental point of view. Because of the complexity of society in this time and age, it is impossible to make changes in society just by making plans and acting on them. Changes in the social system have been made: human relationships and social interaction have shaped society to the way we see it today. But this did not happen by just planning in some sort of hierarchal and democratic manner. The system stands above the will of individuals and therefore is shaped as a result of interaction. Although planning by individuals will not make the changes that are needed, and sometimes even does the opposite, it is still necessary to plan and take action. Not taking action means deterioration. But how to take action? According to Crozier traditional hierarchy decreases and the once so successful authoritarian institutions of government, are not congruent with the demands of this time. Institutional creativity is the key, together with us realising that there is not one person or institution that can offer the answer or steer us towards the solution. We have to let go of the idea that we can control the system and we have to experiment with new models to get to solutions. (Crozier, 1982.)

According to Bekkers (2007) society is fragmented because of its modernisation process in which functional differentiation takes place on a large scale. This results in an increasing complexity of society. This leads to the fact that individuals are not able to grasp the whole of the complex society anymore: individuals don't understand society. On the other hand, there is an overload of information available. This enormous amount of information that can be shared, is the reason why Castells (in Bekkers, 2007, p. 36) sees the society as a network society. The information and the knowledge that is available for everyone on a global level through information and communication technology, is that what has economic value in modern society. Therefore "Government is information" (Cleveland in Bekkers, 2007, p. 37), by which he means that the essence of government business is information. And the way or power to govern people lies in these networks in which information is exchanged. Society changes, and also the way that politics and government are organised in modern society, changes. The problem solving capacity and the way society is directed, shifts from the centre or core of state government to other parts of society and to other parts of government (Bekkers, 2007, p. 49). All these developments in society, have consequences for the way the society is governed and for the way in which problems in society are solved. These also have to develop or evolve.

Koppenjan and Klijn (2004, p. 3-9) say that certain standard responses, such as collecting information or top-down interventions on the social context, in relation to our network society, are inadequate to deal with the wicked problems that we face. The wicked problems that we cope with, bring uncertainties which can be dealt with through a network approach. Through this network approach partners can work together to deal with the intellectual challenge, and to deal with the strategic and institutional difficulties.

Wit et al (2000, p. 96-99) describe government and government choices by presenting paradoxes. One of the paradoxes they see is the paradox of “shaping or following”. Those who believe in “following” believe that society is too complex to control or direct. They see change in society as something you follow, try to see through and concentrate our actions on working with the outcomes of societal processes to make the best of the outcomes of these processes. Those who believe in “shaping” also see the complexity, but believe that it is possible to shape society: society is made by people and can also be changed by people. Therefore is it possible to question rules or established practices.

As we can see there are different ways of looking at our changing society and the way we can or cannot deal with the problems we face. What all authors agree on is that action is necessary anyway. In the municipality of Rotterdam, the choice is made to try to serve the public interest better by trying to bend the working methods. For this new way of working the different departments of the municipality undergo a change process.

## 1.2 Change in a public organisation

Continuous change in organisation is important to keep up with changes in the organisations' surroundings by realising that change is a complex process. Metselaar (1997, p. 6) points out different research results have shown us how much difference there is in the ability of organisations to successfully adopt change. Effective change gives new energy to the work processes, but ineffective change makes that a lot of energy leaks away. Kotter (1995, p.4) watched over a hundred change operations in organisations and says that only a few of these were very successful. A few of them were a complete failure, and most were in between being successful and being a failure, with most against the failure-side of the scale. Several researchers refer to the fact that around 70% of the change initiatives don't generate the intended effect (Cinite et al, 2009, Beer & Nohria, 2000, Rowland & Higgs, 2008).

Research has not always differentiated between the public and private sector and this is unfortunate because there have been many failed change efforts within the public sector. Furthermore, the nature of a public organisation with its “embedded practice, jurisdiction, bureaucracy, frequently changing senior leadership, and complexity of reforms” does not provide the best conditions for effective change (Cinite et al, 2009, p. 266). Bennebroek Gravenhorst et al (2003) describe that the way an organisation functions has effect on the change capacity of that organisation. The focus on stability of bureaucratic organisations, that public organisations mostly are, restrain the change ability. Although there seems to be no best way of organising, an organisation with a mechanistic structure, such as a bureaucracy is, is formal and rigid and therefore resists change (Bennebroek Gravenhorst et al, 2003).

The complexity in modern society asks for new ways of serving “the public”. There is less formal authority existent and needed to handle the complexity of human relations which have become complex by all new methods of communication and through

globalisation. There is not one person that has the answer for problems and there is not one answer for complex problems. Therefore new ways of working and dealing with “the public” are needed to get a grip on the complexity. The public sector needs to experiment to find new organisational models that fit the society as it is. (Crozier, 1982.) Organisational change is therefore especially important for the public sector and with that comes also the importance of finding ways to maximise the effectiveness of change in the public sector.

In the municipality of Rotterdam the need to change is acknowledged. A shift is made from working with centrally prescribed theoretical ideas and targets towards working with policies that are made especially for a specific area, by using data and input from the area itself. This intends to fit the complexity of society. It is done by making use of the decentralised form of administration that already existed. In Rotterdam there are fourteen district with their own elected district councils, executive committee and civil servants. The idea is that the administration in these districts knows the neighbourhoods better than the specialised departments of the municipal administration. The different departments of the municipality are reorganising to be able to meet the needs of the areas. In this thesis the focus will be on two of the departments that recently reorganised. The directors of the two departments are enthusiastic about cooperating with me to do this research. For one of the departments it is essential that it will not be possible to connect the results of the research to that department. The directors want to make sure that the presented results will not have any implications for the employees. Therefore the departments will be referred to by using a colour code: the blue department and the green department.

### 1.3 Goal, main question and core research questions

The goal of this research is to get insights in the way the behaviour of leaders in the public service affects change processes. I will try to reach this goal by studying the behaviour of leaders in two departments (the green and the blue) of the municipality of Rotterdam, and the way this influences the effectiveness of the transition in these departments which should lead to area and demand based working. The influence of behaviour and values of leaders in commercial organisations has been researched. There is less research done on this subject in public organisations. This thesis will contribute to a larger research that is being done by researchers from Erasmus University Rotterdam and University of Southampton, which must lead to insights into the influence of behaviour of leaders on effectiveness of change in organisations. Rowland and Higgs (2008) have done research on leadership behaviour in private organisations and developed a theory about leadership behaviour. They found five clusters of leadership behaviour practices that are related to effective organisational change. For this thesis I will test this theory of Rowland and Higgs (2008) on change situations in the public sector. The outcomes of this research will also give both departments a chance to increase the effectiveness of the actions that are taken within the change process. To reach this goal this research will answer the following main question:

**What behaviour and change approach of leaders in the green and blue department of the Municipality of Rotterdam is related to the effects the departments intent?**

This main question leads to the following four core research questions:

1. What approaches to change management are used by leaders in the blue and the green department?
2. What approach to change management is related to the effects that the departments intend?
3. What leadership behaviours are used by leaders in the blue and the green department?
4. What leadership behaviours are related to the effects that the departments intend?

## 1.4 Why choose leadership in the public sector as a theme

Leadership in the public sector is somewhat different from leadership in the private sector. Rainey (1997, p.282-283) says, in his book *Understanding and managing organisations*, specific attention to managers in the public sector. There are some specific aspects that a leader in a public sector organisation has to face, which do not play a part in private sector management. For example the strict rules a leader in the public sector has to follow about personnel management or budgeting and the influence of the press and interest-groups, make the job of a leader in the public sector different from the work of a leader in a commercial company. Public leaders also experience more demands on accountability, and have to deal with short tenures, and the absence of performance measures. Furthermore, a manager in a public setting doesn't only have managerial tasks, but he also handles the "political and institutional environment" and is a policymaker (Rainey, 1997, p. 289). Rainey (1997, p. 285-286) finds that there is some evidence that the context of the public sector affects the performance and behaviour of leaders in the organisation. Especially the extensive amount of rules seems to make leaders less effective.

According to Fernandez and Rainey (2006), public leaders face challenges that are somewhat different from the ones their private counterparts are facing. When leading change, managers in the public sector also have to deal with challenges that are different from the ones that private sector managers face. Each public organisation has often more political masters who have different objectives. The relationships between these politicians and the civil servants is usually not that strong. Nevertheless, public managers do need to keep the support of these external actors to be able to implement change. This takes certain skills. Furthermore, change processes require an adequate amount of resources. When there are multiple organisational changes in the public sector and these changes all need resources, public organisation could be ending up competing for the resources needed. This has a negative effect on the change process. Public leaders also exercise less discretion than private leaders, which makes changes in the system more difficult. (Fernandez & Rainey, 2003, p. 171-173.)

The fact that lots of change efforts fail, combined with the importance of change in current society, makes that there is a lot research done into the factors that can improve the success of change. One of these factors is leadership. Rowland and Higgs (2008, p.62) found in their research that what leaders do makes the biggest difference when it comes to success or failure of change and they account for 50% of the variance. Higgs and Rowland (2005) and Rowland and Higgs (2008) did extensive research into leadership behaviour that leads to effective change. Most of their research was done in private organisations. As we have seen, the role of a leader in the private sector seems to differ from the role of a leader in the public sector. In this thesis I want to add to their research by examining leadership behaviour and effectiveness in the public sector. I will do this within two departments of the municipality of Rotterdam. By using Rowland and Higgs theory of the Changing

Leadership framework and comparing data from both leaders and employees about behaviour and effectiveness in a Dutch public environment, I hope to add results that make it more clear how to lead an effective change in the public sector.

## 1.5 Methodology

As a method of research for this thesis, is chosen for field research. From the literature I build up my theoretical frame by investigating the effect of different factors on outcome of change, different approaches to change management, the role of leaders in change and different leadership behaviours. For the field research I use the methods of interviewing and survey. I start with interviews with directors of both departments to find out more about the context of the change and the overall goals. Interviews with leaders in the higher and middle management, lead to more insights to build up questionnaires. I get to know more about the departments approach to change management by a survey amongst leaders. Questionnaires about a leaders behaviour and effectiveness of the change for employees and managers, complement the research and provided the data needed for a quantitative analysis on the subject of the effect of leadership behaviour on the realisation of organisational change goals.

## 2. Organisational change in the municipality of Rotterdam

To understand the context of this research and the change that was the basis of the data collection in this research, some background information is necessary. In this chapter you will find a small description of the municipality of Rotterdam and its ideas about area based working. In this research there was fieldwork done in two departments of the municipal organisation. The organisation of both departments and the origin and basics of their change processes are described. For the third until the sixth paragraph, I used several documents that were provided to me by both the departments. Because I was asked to keep the anonymity of the departments, I have not referred to these document.

### 2.1 What is the municipality of Rotterdam and how is it organised

The city of Rotterdam has around six hundred thousand inhabitants. The city is also a “central-city” in the area and provides facilities such as hospitals, schools and university, theatre etc. for inhabitants of the surrounding municipalities. Almost 50% of the cities inhabitants do not have a Dutch nationality. Being a large multicultural city, with a central role in the area, the municipality of Rotterdam has divided its tasks amongst fourteen so called “deelgemeentes” and eighteen “diensten”. “Deelgemeentes” are districts with their own elected district councils, executive committees and civil servants. These districts are an integral part of the municipality and have distinctive tasks to provide in their areas, such as maintenance of public roads, welfare and safety in the area. “Diensten” are municipal departments which work under commission of the city council or the district council (dependent on the tasks the organisation got assigned). These departments are organised by content, such as social services, health, education and sports. Overall control over the departments is held by the municipal executive committee. This committee has ordered that departments should change their ways of working. They should shift from working with a centralistic and theoretical point of view to area based and demand based working. But the order also contains a change from working behind a desk to solve problems by theory and smart thinking, to working in the midst of society together with all the partners, using a network approach. To be able to provide this, most departments had to reorganise and change their ways of working. This process of changing to area and demand based working started around 2007.

### 2.2 Area and demand based working in Rotterdam

Area based working is no new concept and it also isn't invented in Rotterdam. There are several local, regional and national governments that realise that environmental, economical and social policies interact with each other and that it is needed to work together with partners and citizens on a local level to really make a difference. (Rotterdam, 2008.) Also scholars have written about this idea of interaction and working together and found that it could have advantages. According to Bekkers (2007, p. 154-155) there are several ways of designing and implementing policy. In two of those is working with partners important. When using coproduction as a strategy, policy is developed by working together with other parties that have an interest in the subject. When using participation as a strategy, citizens and interest groups are given an active role in the process of policymaking. In both cases the beginning of policymaking is not the defining of problem and goals, but the defining of the problem and goals is a result of a process in which parties came to a consensus. This process gives more room for alternative ways of looking at a problem and the solution. (Bekkers, 2007, p. 212-215.)

Bovens et al (2007) refer to working together with different partners in policy networks. Politicians and civil servants accept that the environment in which policies are formed is too complex to direct. To influence the surroundings is the best you can achieve. In policy networks the parties accept that each has their own agenda, but they try to find a common goal. Koppenjan and Klijn (2004) define two alternative responses of public actors to the uncertainties they face in the complex society. The first is the NPM response and the second is the governance response. In the governance response a public organisation has the objective to deal with and improve the inter-organisational decision making. The central idea is that there is linkage between parties and that public actors depend on others for decision making. (Koppenjan & Klijn, 2004, p. 101.)

In the city government agreement of 2006 the city council described the direct living environment of citizens as starting point for city policy. Area based working was chosen as the way to do this. The idea is that through this working method, it is possible to choose the policy that fits best with the problems and characteristics of the neighbourhood. (Rekenkamer Rotterdam, 2011) From 2008 there was also a discussion between the city council, the city government and the districts councils and governments about the relation between the city and districts councils and governments in connection to this area based working. In 2009 a proposal called: "We kunnen zoveel beter" (we can do so much better) was unanimously accepted as a new way to govern the city and the district. In this document the area based working is also named as the basic way of working. (Gemeente Rotterdam, 2009.)

The definition of Area base working for the municipality of Rotterdam is: "Area based working is working from the task of the neighbourhood, working together with citizens, entrepreneurs and all the partners that are active in the neighbourhood, to come to developing, execute and implement policies that are in tune with the specific characteristics and problems of the concerning area and target groups in that area" (Gemeente Rotterdam, 2008, p.4). Different departments took different kinds of actions to realise area based working and there was a program group active within the municipality. Nevertheless in 2009 through the proposal "We kunnen zoveel beter" was stated that extra effort was needed to really make the concept of area based working a success. At that point was decided to form a new program and to make specific agreements in the management contract with all the departments about their results on implementing area based working as a method. Also was decided that there should be agreements between the city and the districts about the efforts of the departments. (Rotterdam, 2009.)

## 2.3 About the green department and how it is organised

The green department is an organisation with around 350 employees of which most have an high education level: a bachelor or a master degree. Most of the employees do work that makes it possible for others work directly with the citizens of the city, for example by subsidising, guidance or thinking out projects or new policies. The organisation also has two divisions (approximately 200 employees) that work directly with citizens. The department has two directors and two management layers below the directors level: the heads of the divisions and the team leaders. The teams consist of 15 to 25 employees. The green department works with a budget it gets from the central municipality.

## 2.4 The change process in the green department

The green department has had a formal reorganisation. In march 2008 the new structure of the department was a fact. The new working methods and new way of thinking about policy throughout the department had to be implemented from that time. In the new structure, people got different tasks from the ones they had before. Most policy advisors had to become generalists and relation managers rather than specialists or theoretical experts.

In the current change process the organisation moves from supply based working to demand based working. Every district got his own account manager and every organisation with which the department has a relation got his own contact person. From working behind their desks in the old situation, they were asked to step into the city and check what was needed in the specific areas before making new policy or starting new projects. This asks for a new way of thinking and working and demands different capabilities in employees. Although the new structure has been there for a while now, the shifts in the way of working are major and therefore the changing process within the department is still continuing. Leaders in the department have the tasks to coach and guide the employees during the process of change. Important competences that all personnel must have are: result driven, working together, entrepreneurship, situational awareness. These are named in different documents about the change and leaders within the department have the task to select and coach their team on these competences.

## 2.5 About the blue department and how it is organised

The blue department is an organisation of approximately 800 employees. A large part of the employees of the blue department do work that directly influences citizens of Rotterdam. There are divisions in the department that develop policies, think out new products and initiate projects, but these parts of the organisation are relatively small (approximately 200 including staff and leaders). The level of education of the larger part of the employees is low till medium and very specialised. Most employees have chosen very specific for the job they do and amongst the employees there is a great emphasis on craftsmanship. The employees that work on policies, projects and new products have a higher education and are more generalised in the way they work and think. The department has two directors and there are three levels of management below the directors level: heads of the divisions, team leaders and operational managers. The blue department gets most of its budget via the districts (which receive money from the municipality) and only around 20% from the municipality.

## 2.6 The change process in the blue department

The blue department had its formal reorganisation at the beginning of 2009. The change process had already started at the end of 2008. There were three components on which a change was necessary. All three were also named in the end report of an audit that was done in the department. The directors chose to work on these three component one by one. These three are sketched in this paragraph.

The first was that of area and demand based working. The directors of the department had noticed that the employees in the organisation were seen by the financiers (city and district boards) as very professional, but there seemed to be no connection between the different services and products provided by the department. There was also no

differentiation of the product for the different areas and the products and services were not matched to the demand. The directors saw the change in the municipality to area and demand based working as an answer to this hiatus.

To start the change to area and demand based working there was the formal reorganisation in structure. Formally the structure of the organisation was based on the products and services that were provided. In the new organisational structure, the districts were the basis of the work process. Employees working in the same district, became a team with a team leader. At the starting point of the new organisation structure the directors visited all the employees in the organisation on their own working stations to tell about the change and the things that would be important in the following years. After that the division leaders and team leaders are in the lead for the change process.

The second component of change was that of the management of resources in the organisation itself. This part of the change only affected the management layers of the organisation and the teams that were working to facilitate the management of resources.

The third component of change was that of the mission statement of the organisation. The blue department has lots of different tasks of which the number grew over the years and which could also partly be privatised. The discussions around tasks and the mission are still going on, there have been no direct implications for the employees.

## 3 Digging into existing theories and theoretical framework

The second chapter gave background information on the change processes in the municipality of Rotterdam and the blue and green department. This chapter contains a description of various theories around change management. In the introduction I already pointed out that I will use the theories of Rowland and Higgs on both change approach and leadership practice. So these theories are covered in this chapter. But there are other theories important for this research, such as other factors that influence change or leadership. In this chapter I will therefore describe the theories I find to be of relevance.

In the first paragraph, I will describe some research into the factors that can have an effect on the outcomes of a change process. One of those, the change approach will be covered in the second paragraph. Before describing the core of the theoretical framework in the fifth paragraph, the third and the fourth paragraph describes the role of leaders in change and leadership behaviour.

### 3.1 Effect of different factors on outcome of change

There are different factors that are of influence on the outcome of change. In this paragraph some of those which also have a relation with leadership, will be covered.

I start with the DINAMO a model from Metselaar and Cozijnsen (2005) which is based on research. This model shows eight factors that influence behaviour from persons in a change situation. All the eight factors influence a person's willingness to change, which then leads to a certain behaviour. That what people expect to happen to the work (1) and the organisation (2), their emotions the change brings(3), the attitude of colleagues towards the change (4), previous experiences with change processes (5), time and manpower (6), steering of the change process (7), and complexity of the change (8). The four last factors influence the behaviour directly as well as they influence it indirectly via the willingness to change.

The initial research in which the construction and validation of the DINAMO was done by Metselaar in 1997. This research was focused on the role of the middle manager as a change agent and his willingness to change. The tasks of middle manager are both part of the decision-making process and the implementation of the change. This makes him different from the top managers that are only part of the decision-making process. His viewpoint is different from the top management because he is focussed on the internal processes and not on the external processes on which the top management focus. (Metselaar, 1997.)

Emotions influence the way we come to our beliefs of what is right and what is wrong and behaviour that comes out of emotions is the most relevant aspect of our moral attitude (McGrath, 2006, p.299). Emotions not only are there as one of the factors that influences us, but they lead the beliefs we have about the things we meet in life. Combining this finding with the DINAMO, emotions will also influence our beliefs about the seven other factors in the model. Emotions that we have about our work and our bosses or colleagues and emotions about former reorganisations will influence a person's beliefs about the change process the organisation is undergoing. Emotions from the people in the organisation are therefore not only an important factor for leaders to attend to, but also should leaders be aware of their own emotions and the influence of those on their own behaviour.

In *Managing Change; The Art of Balancing*, Jeanie Daniel Duck (1993) claims that managing change is to manage the dynamic and not the pieces. Change is about innovating mental work and not anymore about improving physical work in the way that Taylor taught us. This means that a different approach is needed. Successfully managing change in modern times is about managing feelings and emotions. For change to happen people have to believe in the change and all that managers do or don't do should add up to these beliefs. Managers should be able to deal with both positive and negative emotions to effectively lead an organisation's change process. Employees need to trust the organisation and have faith in the fact that the new way the organisation is going, is the right way. In times of change establishing trust from employees is difficult. Trust in those times is based on predictability and capability. The concept of predictability needs to be redefined in situations of change. It's not about predictable career paths anymore, but it's about communicating the actions you are going to take and then keep your word and act the way you predicted. To trust in the change process both managers and employees have to believe in the capability of everyone in the organisation to make the change. And both managers and employees have to feel their interdependency towards each other and the organisation's goals. (Duck, 1993.)

As we have seen there are several factors that influence the outcome of a change process. And many of those interact with each other. The outcome of a change process is influenced by the willingness to change of the people in the organisation, the emotions, feelings and beliefs they have, the actions that are taken by and behaviour of the management, but also trust in the organisation. All these factors together add up to form a basis for successful change. The way change is approached is also important for the outcomes of change. The next paragraph focuses on this subject.

### 3.2 Different approaches to change management

One of these factors adding up to successful change is the change approach of an organisation. There are several researchers that have been searching for successful approaches to managing change. The way someone approaches change says something about his beliefs about change. As we will see in this paragraph most authors divide the methods of approaching change roughly into two different approaches: two sides of the medal. To set a basis to the theoretical framework, some of these theories will be set out in this paragraph.

Beer and Nohria (2000) state that there are two archetypes of change: Theory E which is based on economic value and Theory O that has organisational capability as main characteristic. In Theory E there is a focus on the structure and systems, the change is lead top down and planned from the beginning to the end. In Theory O behaviour and attitude of employees are the main focuses. Employees should participate in the change and there is room for experimenting and letting the organisation evolve. According to the authors both Theory E and Theory O have their downsides. Theory E is effective on a short term in enlarging the economic value of a company but in this theory the management doesn't invest in people and this gives bad results for the change on the long term. In Theory O the management builds on the human resources but fails to make some hard decisions. Therefore the change in itself is effective on the long term, but the economic value of the organisation stays on the same level: so the change doesn't really add something to the organisation. For effective long term change Beer and Nohria advice organisations to combine Theory E and O together at the same time. (Beer and Nohria, 2000.)

A different way of describing approaches of change management are the metaphors that Jonker and De Witte (2004, p.15-20) use: travelling versus wandering. When you travel you have planned where you are going and how to get there. You know what to take with you and have an idea about what to expect on the endpoint of the travels. When translated to a way of thinking about change: the management of the organisation knows where it wants to go, the way to get to this goal is planned and the management knows what kind of resources it needs. When you wander the wandering itself is the goal and you have an idea where to go but there is no given point that has to be reached within a certain timeframe. Translated again to a way of thinking about change: in the organisation rises the notion that renewal is needed and a common decision is made to start to go towards a new situation. The endpoint is not given, but it is somewhere on the horizon of options. Coming to that point needs co-creation. In the idea of wandering is also included that change is a permanent process: it is how a organisation develops and adapts to changing circumstances. According to Jonker and De Witte (2004, p.16, 19) the travelling approach in most situations fails to get positive results and the wandering approach is for most organisations a method that asks an attitude the organisation can't adopt. Therefore they suggest to use a combination of travelling and wandering which they call commuting. In this method a blue print of the outline of the organisation is designed by the management. The details are filled through searching together with employees.

The way an organisation or person approaches change is described by Rowland and Higgs (2008, p.30) using two axes. Rowland and Higgs state that a binary approach to change approaches is too coarse. Only using the two poles of programmatic versus more emergent change doesn't paint the complete picture. They use two axes to describe four archetypes of change approaches. The first axe is an axe for the perception of complexity of change. It leads from a straightforward approach on one side to a complex approach of change on the other side. In other words: from people believing that change is "easy manageable and predictable" to people believing that it is "non-controllable and non-linear". The second axe is an axe for the beliefs of how change can be effected. It has on one end the "one look approach" which should work in any given situation and on the other end the belief that "change needs to be self organised and differentiated" according to the needs in a specific situation.

The two axes lead to the four change approaches called: "Directive", "Self Assembly", "Master" and "Emergent" (Rowland & Higgs, 2008, p.31-37).

- The Directive change approach is a top down approach that is set out by one initiating source, usually senior leaders, in the organisation. The goals of the change as well as the way to get there are determined from the top. In this approach change is straightforward: if everybody follows out the steps that are prescribed in detail, the change will happen.
- In the Self Assembly approach to change the goals and outcomes of the change are defined by the top, but the way to get to those goals and outcomes can be determined locally in the organisation. Change is seen as straightforward and the process in the organisation is facilitated by centrally prepared "tool kits" that can help the units in the organisation with implementing the change.
- In the Master approach change is seen as complex, having lots of elements and needing a wide range of interventions. The engagement and involvement of the people in the organisation is needed to carry these out. The change approach is "characterised by having a very clear and strong central framework for the change effort" (Rowland & Higgs, 2008, p. 34).

- The Emergent approach of change sees organisation as complex and not directly controllable. Leaders set out a few big rules to give direction to what should happen and then step back to let the people in the organisation self organise the process and actions they think are needed. People that get involved in the change do this voluntarily and leaders are there to encourage people to change and innovate, but not to control or steer.

Higgs and Rowland (2005, p.133 + 2008, p41-46) researched the effectiveness of the four approaches to change in different change situations. They found that an approach to change in which change is believed to be complex are more likely to be effective than the approaches in which change is seen as straightforward. The Master and the Emergent approach have a positive correlation to successful change whereas the Directive and Self Assembly approaches have no relation to success. The Emergent approach was in the change processes of great extent, statistically the most related to effective change. Whilst the Master approach is more related to effective change in organisations that undergo a long term change process and are in a turbulent environment. The use of tool kits leads to unsuccessful change in any situation. Higgs and Rowland (2005, p. 147)) also find that the same range of leadership behaviours were present in each of the change approaches. But they did find that there was a different dominance pattern of each set of behaviours for the different change approaches.

As we've seen there are several ways of looking at change approach. Beer and Nohria look at it from an economic versus organisational point of view, Jonker and De Witte distinct knowing where to go (travelling, a programmatic way of going) from just knowing that you must go (wandering, an emergent way of going), whilst Rowland and Higgs describe a combination between programmatic versus emergent and the way the management looks at change as a process: complex versus straightforward. Although there are differences in the ways of looking at change approach that I have discussed in this paragraph, there are also similarities. In theory E, there is an emphasis on a top-down approach and structure and system change that is planned and programmed. This is a quite similar view to the directive approach of Rowland and Higgs. It also has much in common with the travelling approach of Jonker and De Witte. Theory O with its bottom up approach, building corporate culture and experiment and evolve, is quite similar to the emergent approach that Rowland and Higgs describe and the wandering approach of Jonker and De Witte. Leaders lead in the change approach an organisation has. Furthermore, a leader has more to add to organisational change than that. The next paragraph gives more details about the role of leaders in change.

### 3.3 Role of leaders in change

The choice of an organisation for a certain change approach is one of the factors that adds up to the effectiveness of a change process. The way leaders take action, behave, approach change and handle emotions and feelings of the people, are factors that influence the outcome of change. I will further investigate the role of leaders in this paragraph.

“Leadership is the ability to influence a group towards the achievement of goals” (Robbins, 2000, p.81). Rainey (1997, p. 260) describes leadership as “the capacity of someone to direct and energise the willingness of people in social units to take actions to achieve goals”. There are several theories that go into the traits or characteristics that leaders in general possess which indicate their success as a leader. The Ohio State Studies and the University of Michigan Studies looked at the behavioural styles of

leaders to try to predict successful leadership, but the studies failed to find relationships between leadership patterns and a group's performance. It seemed that situational factors also had an influence on the success of leaders. (Rainey, 1997, Robbins, 2000.)

The way leaders influence a group is not only dependent on the set of skills a leader possesses, but the situational conditions are also important. The Fiedler Model, the Path-Goal Theory and the Leader-Participation Model all acknowledge the relation between type of leadership and the situation in which the leader and his team have to do their job. (Robbins, 2000. Rainey, 1997.) Fiedler (Rainey, 1997, p. 263) even argues that it is better to alter the setting to the leader, than to train the leader to fit a particular setting. The three situational factors that Fiedler distinguishes are the "Leader-member relations, Task structure, and Position power" (Robbins, 2000, p. 87). The three mentioned models clarify part, but not all of leadership effectiveness. There are several other factors that contribute to the effectiveness of leaders, such as the way a leader is trusted by his employees (Robbins, 2000), the culture of the organisation, the way employees and leaders attribute characteristics to one another and the context in which a leader has to do the job: private versus public (Rainey, 1997).

Metselaar describes that in a work situation a person cannot always decide at will to behave the way he behaves. The "formal structures, rules and procedures restrict the freedom of choice" restricts the choices that people have to perform certain behaviour (Metselaar, 1997, p. 48). The control of managers over their behaviour is dependent on the amount of influence they have on the change. (Metselaar, 1997.) So it is possible that leaders in a public organisation in which they experience less influence than in private organisations, have less control over their own behaviour.

The most essential parts of leadership, tasks and challenges, are equal for private as well as for public sector managers. In recent years there has been more attention on the difference between private and public leadership and there is some evidence that suggests that leaders in the public sector face some distinctive challenges that have to do with the context they work in. Managers in this sector have less control over their own time, are more limited in their authority due to extensive rules or constraints and their work is influenced by the political environment and for example interest groups or the press (Rainey, 1997, p.281-285.). The question is if the public context makes managers perform a better leadership role or if the context prevents managers to perform at their best. According to Warwick (in Rainey, 1997) the public system with its strict hierarchy, rules and constraints makes middle managers to leave the responsibility and authority to the top and the system makes top managers to be occupied with politics and policy instead of organisational development. There are variations in the level in which public managers combine the managerial tasks with involvement in policy and politics. There are also managers that are isolated from direct political influence (Rainey, 1997, p.289).

Rowland and Higgs (2008, p.62, 96) found that "what leaders do makes the biggest difference between success and failure in implementing high magnitude change". The behaviour of leaders accounts for 50% of the variance and it is not what they say or plan that counts, but the way they behave. This also means that the change approach and behaviour they rationally chose, planned and talked about, is not necessarily the change approach that is seen in daily practice. Robbins (2000) points out that it could be that leadership is not always important. In some situations it may be a large contributor to employees performance; in other organisational contexts leadership may contribute little especially when there are rules and procedures to follow and leadership is not too essential for doing the job.

As we've seen, trust is also an important aspect in the leader-employee relationship. Robbins (2000, p. 97) describes trust as the "positive expectation that another one will not...act opportunistically". The better the trust in the leader, the more an employee is willing to follow and believe that leader. There are three types of trust (Robbins, 2000, p. 99). The first is deterrence-based trust, which is very fragile and based on fear of the consequences of not following. The second is knowledge-based trust, which is the most common and stronger than deterrence-based trust. This evolves when there is a history between leader and employee and the employee therefore has enough information about the leader to understand and predict his behaviour. The third is identification-based trust which is the strongest and it originates from the emotional connection between leader and employee. (Robbins, 2000.)

Summing up: the way a leader behaves is important for a successful change and a leader doesn't always have full control over his behaviour. It is not clear what it is that leaders have to do to be effective. Not only the skills of a leader seem to be important, but also the context in which he works and the way he is seen by his employees or how they interact with each other, are important. Furthermore does working in the public sector place restrictions on managers, which seem to make it harder for them to take the lead than it is for private managers. Rowland and Higgs have developed a theory in which they specifically relate different leaderships behaviour to the outcome of change processes. It was based on research that was mostly done in the private sector and in Great Britain. It is therefore interesting to find out if it is a model suitable for the public organisation in the Netherlands that I will study. I will discuss their theory in the next paragraph.

### 3.4 Different leadership behaviour

Rowland and Higgs (2008) describe five leadership practices: sets of behaviours of leaders, that have an influence on the success of change. Four of them that they together as a package call "Changing Leadership practices" lead to successful change. The four leadership practices are called: Attractor, Edge and Tension, Container and Transforming Space. They also found one practice that is called "Shaping behaviour" that is negatively correlated with success. Before being more precise about the results they found, I will describe the five practices.

#### 3.4.1 Leadership practices

Attractor leadership (Rowland & Higgs, 2008, p. 139-160) is in the essence a leadership type that helps to move the organisation into new directions through creation of meaning. Leaders that practice this behaviour are able to connect with others on an emotional level and are able to embody the intent of the organisation. The attractor sees what is going on from day to day and is able to connect the things he sees and experiences, to the organisations' ultimate intent and is able to create a story from that. This type of leader is attentive in the moment: he or she is there, reacting on what is happening at that moment and creating a collective story at the same time. The attractor uses the collective story in every situation to make sense of every decision and action in the organisation. It is clearly visible that the attractor works to serve the organisation and is able to put aside his personal ambition. The attractor reflects on his own leadership and adapts this when necessary.

The Edge and Tension leadership practice (Rowland & Higgs, 2008, p. 173-195) is seeking out the disturbance in the organisation and confront this disturbance. Leaders

that practice Edge and Tension take the organisation to the edge of discomfort in order to keep the tension high which makes the organisation able to move towards its ambitions. To do this they tell it as it is, they don't keep away from difficult and emotional, but stick to the reality. They do this with respect, but without covering things up. When it gets difficult, these leaders keep on addressing the difficulties. Edge and Tension is able to see paradigms and habits and challenges and disrupts these. These leaders set high goals that seem to be impossible to reach and they keep the goals high, they don't compromise. They also don't compromise on talent. They want the best people on the right places. The best people are the ones that are able to help the organisation in the new direction.

The essence of the Container leadership practice is that a leader that practices this style is able to "work through anxiety" and support the people through the change (Rowland & Higgs, 2008, p.208). He does this with his own personality, but also to acknowledge that what lives under the people and also by holding clear structure and by making clear what is expected. One of the important things of a leader showing Container leadership, is the way they come across to others. So it's their personality and the way that shows to others that is essential: they are firm and fair. This kind of leader is also affirmative and encouraging to others in a way that people now that they and their actions are being noticed. A Container has excellent dialogue skills and empathy and with those he provides room to say risky or difficult things. Asking powerful questions is one of the primary ways in which they show this. Leaders showing Container leadership sets clear boundaries, rules and expectations and also makes sure that these are upheld. This makes it clear for people what they can and shouldn't do. Containers are able to build relationship networks that fit the system and the change and they align the top to make it possible for the whole organisation to join up. (Rowland & Higgs, 2008, p. 207-240)

Leaders that show the Transforming Space leadership practice focus on acting in the present in the "here and now" (Rowland & Higgs, 2008, p.241). They are able to break patterns of thinking and behaviour at the moment that it presents itself. They do this by creating space for transformation (Transforming Spaces) to different patterns of thinking and acting. In these spaces they observe and reflect on what is happening at that moment and then they take action. Transforming Space leaders see that what is happening in the moment as a possibility to practice leadership. They show vulnerability and are open and give feedback on what they see happening at that same moment. They are able to ask the right questions to go deep into the system of patterns and structures. They facilitate change in the moment by also paying attention to prior conditions such as the time they take for interventions, layout of the room, the way meeting are (not) planned or taking time outs. (Rowland & Higgs, 2008, 241-274.)

That what distinguishes the Shaping leadership style is that in this style the leader has the central position in the change and his personal needs are the motor behind his behaviour. He is personally present and visible, makes the plans and sets the path out for others to follow him. They act out the behaviour they want to see in the employees and expects them to do what he does. Shaping leaders are clear about vision, theories and views on the change and how it can be successful. They direct, measure and control the actions that others take in the change process. (Rowland & Higgs, 2008, p. 68-73.)

### *3.4.2 Results and implementation leadership practices*

As noted above Rowland and Higgs researched which leadership practices had the most effect on a change process. They found that leaders who practiced the four practices: Attractor, Edge and Tension, Container and Transforming Space had the most successful change processes. Combinations of two of the four styles showed effect, but not in the quantity that the four together did. The four “Changing Leadership practices” were related with seniority of the leaders. The longer they were a leader, the higher they scored on the Changing Leadership practices. Even by using the Directive change approach and in high sociability cultures which are both not related to successful change, the combination of the four leadership practices leads to successful change. Rowland and Higgs found in their conversations with leaders after the research, that the four leadership practices appeal to leaders and they have found that the practices can be learned. To learn these practices they give some practical tools such as lists of interventions in which the use of several practices is combined. Warnings about the things that happen when the practices are overdone or underdone. They also emphasise that getting feedback on your behaviour is the best way to learn the practices. (Rowland and Higgs, 2008, 281-358.)

The Shaping behaviour was negatively related to success. And there was an inverse relationship between Shaping behaviour and seniority. The longer someone is a leader, the less likely he is to use Shaping behaviour. They also found that using Transforming Space as a leadership practice on its own, has no correlation with successful change. It is an amplifier for the other three styles. (Rowland & Higgs, 2008, p. 112-117.)

## 3.5 Theoretical framework

From the theory discussed in the previous paragraphs I have, in this paragraph, set out a line to complete the theoretical framework for my further research. As mentioned earlier in this report I set out to use and add to the theory of Rowland and Higgs (2008) about leadership practices. Their theory about leadership behaviour and their underlying theory about change approach will be the basis for the field research I will be doing and they will therefore be a large part of my theoretical frame. In the scheme at the end of this paragraph, the line of thought is set out schematically.

As we have seen in the former paragraphs the society is changing and organisations such as municipalities have to change with it. To do so, it is not enough to sit back and see what happens, but action is needed. Although we don't know specifically how to organise successful change in our organisations, there are different factors found through research that seem to influence the outcomes of change. Amongst these there are factors that are of influence on the willingness to change and the behaviour of employees that eventually leads to an effective change. Among which are emotions, previous experience, expectations and beliefs, the way the change process is formed and lead. Leaders have a role in several of these factors, they can influence the process and can manage expectations, beliefs and emotions of employees to a certain point. Leaders are important in the change process. They could account for 50% of the eventual effect of the change. The organisation in general and leaders in particular have a way of approaching change. The change approach is the way in which a change is lead and the way in which leaders believe that the change will take place. This change approach has a relationship with the effectiveness of the change. Higgs and Rowland (2008) found a positive influence of approaches to change in which

change is seen as complex (emergent and master approach) on the outcomes of change processes.

Hypothesis 1: An approach to change in which change is assumed as complex, is positively related to the effects that are intended.

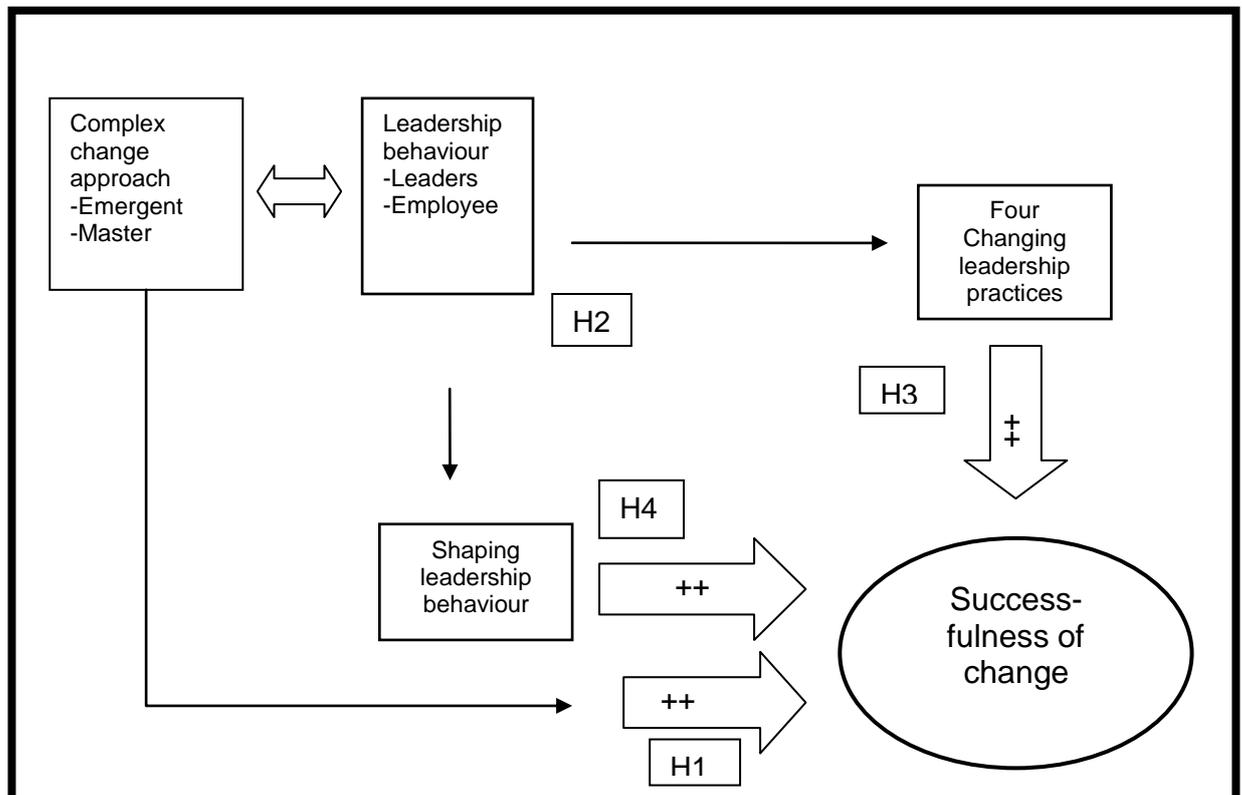
There is some evidence that the way a leader approaches change is related to the behaviour of the leader (Higgs & Rowland, 2005, p. 147). Furthermore, not what leaders say or plan makes the difference, but it is the way they act (Rowland & Higgs, 2008, p. 96). The way a leader talks about change theories is not always related to the behaviour he shows and how employees experience it.

Hypothesis 2: Leaders have a more positive view of their own behaviour than their employees.

The behaviour of the leader during the change is that what influences both employees and the process. Rowland and Higgs found five clusters of leadership behaviour practices that have a relation with the successfulness of a change process. (2008). Four of those as a combination: the Change Leadership Practices are needed in the change process to bring the chance of success up to the 50% that a leader can account to. One practice: shaping behaviour has a negative effect.

Hypothesis 3: A combination of the four practices: Attractor, Edge and Tension, Container and Transforming Space will have a positive effect on the intended effects of the change process.

Hypothesis 4: Shaping leadership behaviour will have a negative effect on the intended effects of the changes process.



Scheme 3.1: conceptual model

To make the relationship between these different hypotheses more clear, there is a scheme of this conceptual model above. With these seven hypotheses in this conceptual model I will start the practical part of my investigations. After discussing relevant literature and setting out the theoretical framework, the next chapter will attend to the experimental design of this research.

## 4. Empirical elements

The third chapter reported on various theories on change management and the theoretical framework. In this chapter I will explain the empirical elements of this research project. With all the ingredients of this chapter I will be ready for the empirical part of my research. In the first two paragraphs, the methodological character of the research and the survey design are described. In the third paragraph, which is on the measurement of variables, I write about the way I translate the variables I'm searching for into useable questions for a questionnaire. In the fourth paragraph, that is called "research instrument", I define the way the questionnaires will be combined into research instruments that I use for different groups. In the last two paragraphs the population, distribution of the survey (4.5) and validity and reliability (4.6) are covered.

### 4.1 Methodological character

This research has both an explorative as well as a testing character. On the subject of leadership behaviour and the outcome of change processes, is not much available research and theory. I'm exploring the relationship between leadership behaviour and change effects in the municipality of Rotterdam. In this research I will test the theory that Rowland and Higgs (2008) have composed on the relationship between leadership behaviour and change outcomes. Their theory with five leadership practices that have an effect on change outcomes, is been tested before but mostly from a leaders perspective. I hope to add to their theory by testing the theory with data of employees.

The empirical research will have a quantitative character. I will be testing hypotheses that I extracted from the theory on the subjects of leadership and change. I will do this on a large scale. I will include data from as many respondents as possible within the two departments. I will use a survey to collect the data. The large scale and the standardisation of the survey method, make it possible to statistically analyse the data. That makes this research method efficient and it makes it possible to generalise the outcomes. On the other hand are respondents forced to answer on a standardised matter. Therefore we will never know the world that is behind all those answers as well as it makes it easier for respondents to be not completely honest. (Van Thiel, 2007, p. 84-85. )

Quantitative data consist of numbers. The numbers are used to categorise the answers of respondents. To be able to use numbers in research of peoples behaviours, a researcher is forced to think logically and precise. On the other hand the numbers are only a way to express the contents of what is found and should not start living a live on their own. The dangerous side of using quantitative data in social studies is that it simplifies the reality, which doesn't acknowledge the complexity of peoples behaviours. (Van Thiel, 2007, p. 133-134. ) Therefore the outcomes of this research should be seen as a small step forward in discovering the complex relationship between behaviour and change, and not as the definitive way of how things work in the departments that are researched.

### 4.2 Survey design

This research is done in two stages. The first stage has two goals. The first goal is to get to know more about factors that influence the outcomes of change processes, the way change processes are approached and managed and the role of leaders in change processes. The second goal is to know more about the change process in the

municipality and in the two departments specifically. To reach these two goals the first stage consists of a literature and document study and interviews amongst directors and leaders in the departments. The outcomes of this stage are described in second and third chapter, and used as a basis for the second stage of the research.

The second stage of the research consist of a quantitative study within the two departments. Through a survey the variables leadership behaviour, change approach, effect of the change and control variables are measured in a great quantity. Through data analysis I will try to identify relationships between these variables. Data collection via a survey is especially fit for theory based deductive studies, such as this. As mentioned above the large scale and standardisation make it possible to statistically analyse the data and to quantify the importance of the relationships between the variables. (Van Thiel, 2007, p. 84-85.) To do this, I will use the computer program SPSS. There are also some dangers in statistical analysis. Only a small part of the process of statistically analysing data is the mathematics itself. Large parts of the analysis consist of choosing the methods and variables that you will use and interpreting the results you get. There are guidelines to do this, but these are not solid and mathematicians also don't always agree on the guidelines. A lot of the choices and interpretations depend on the researcher. (Field, 2009.) In describing the results I will describe the choices I made and the reason why I made these choices. This makes it transparent what I did and makes it possible for others to make their own decisions about the reliability of the conclusions.

### 4.3 Measurement of variables

As mentioned before, there are four groups of variables that are relevant in this research. These are leadership behaviour, change approach, effect of the change and the control variables. In the following subparagraphs I will clarify the way these variables are measured.

#### 4.3.1 Leadership behaviour

In this research I will not be looking for all leadership behaviour, but I will look for leadership behaviour that in previous studies is found to have a relationship with the outcomes of change. As I will be testing the theory of Rowland and Higgs (2008), I will use their definition of leadership behaviour that has an effect on change. The variable leadership behaviour therefore consists of five sub variables. Rowland and Higgs describe these five leadership practices: Attractor, Edge and Tension, Container, Transforming Space and Shaping of which the first four as a package are called the Changing Leadership practices (CLP). Using their research results Rowland and Higgs developed a measurement tool for leadership behaviour that they adjust when they have new results from research. The version I use is from May 2010. The tool has the title: Changing Leadership Practices and Behaviours, Leadership Development Feedback and is brought out by: Transcend, collaborators in change. This measurement tool is a questionnaire with 25 theses which can be answered with a seven points Likert scale from strongly agree to strongly disagree. Each leadership style is represented by five theses which each contain one of the five core characteristics of that leadership style. (See for the core characteristics paragraph 3.5.1.) I translated this measurement tool into Dutch (see appendix 1 for the Dutch and English version). In my questionnaire respondents could answer by choosing from a five points Likert scale (instead of a seven point scale) with the following answers:

1.strongly disagree, 2.disagree, 3. neither agree nor disagree, 4.agree, 5.strongly agree.

#### *4.3.2 Change Approach*

As we've seen in the third chapter, there are many ways to define and categorise change approach. Testing out Rowland and Higgs' theory on leadership practices, I will also use their categorisation and definitions of change approach for my research. Rowland and Higgs describe four change approach styles. Two styles in which change is seen as a complex phenomena: the Master and the Emergent approach. And two styles in which change is seen as a straightforward process: the Directive and the Self Assembly approach. In the Master and the Directive approach the change process is handled top down and in one standardised way. In the Emergent and Self Assembly approach the way to realise the change is left more to the work floor. The variable change approach will therefore consist of four sub-variables. A measurement tool with characteristics of these four styles is developed by Rowland and Higgs on basis of their research. This tool is called: RFLC Change Practices Questionnaire and the one I use is from November 2010. It is a questionnaire with 31 theses which can be answered with a five points Likert scale from strongly agree to strongly disagree. Each change approach style is represented by a number of theses. The number of theses per style is dependent on the amount of core characteristics of that style (see the third paragraph of the third chapter for these characteristics). There are 7 theses for Emergent, 11 for Master, 7 for Directive and 6 for Self Assembly. I translated the measurement tool into Dutch (see appendix 2 for the Dutch and English version). Respondents could answer by choosing from a five points Likert scale with the following options: 1.strongly disagree, 2.disagree, 3.neither agree or 4.disagree, agree, 5.strongly agree.

#### *4.3.3 Effect of the change*

The intended effect of the change, part of the change outcome, is measured by a questionnaire with sixteen questions. These questions that lead to an evaluation of the intended effect of the change, were composed for every goal in the organisations change plans. This was done by using the information from the documents provided by the departments and by using the information about the context of the change that was gained through the interviews with the directors and leaders of both departments. The different goals were extracted from the documents and interviews and converted into statements that were presented through a questionnaire. There were a total of eleven statements about area based working, working together, entrepreneurship, situational awareness. I checked the usability and correctness of these statements with a contact person from each department, who was appointed by the directors as having the greatest knowledge about the formal change goals. I adjusted the formulation of the statement according to their comments. In addition to these statements, five statements were added that lead to answers about some general goals of changing organisations (these are quality, customer satisfaction, productivity, efficiency, speed) (see appendix 3). Respondents could answer by choosing from a five points Likert scale with the following answers: 1.strongly disagree, 2.disagree, 3.neither agree or 4.disagree, agree, 5.strongly agree.

#### *4.3.4 Control variables*

In this research control variables are included that might influence the relationship between leadership, change approach and effect. The variables I will include as control

variables in this study are: age, education level, gender, place in the organisation (department, division, team), time span that leader is leader of the team, time span of an employee working in a team, years of service, salary scale. Age is measured in age categories of ten years. Although these results are more difficult to interpret, I chose for this because whilst testing the questionnaire I got comments on the traceability of respondents. Using categories might heighten the response. I measured education level by using a standard scale that is common to use in research done by large research organisations in the Netherlands. The four categories were: lagere school (primary school), LBO / Mavo / VMBO (lower levels of secondary school and professional education), MBO / Havo / VWO (higher levels of secondary school and medium levels of professional education), HBO / WO (higher levels of professional education and university). The variables time span that leader is leader of the team, time span of an employee working in a team, years of service are all measured in years plus months. Salary scale is measured in categories (also because of the traceability issue).

In both organisations there is a constant change going on. People change jobs, leaders and employees come and go. This gave me the challenges of how to think of a way in which the data from the leaders and employees could be matched without scaring peoples off. I have chosen to include a question about the team the respondent works in. I've put this question towards the end of the questionnaire, so it would be more natural to answer it. To avoid having too much unusable data, I have a list with all the employees and the teams they work in. This makes it possible to complete the data from each respondent with information on the specific team he works before the data was analysed.

The influence that behaviour or change approach will have on the effects of the change, takes time. So there was a challenge to find a way to include this factor into the research. I did this by including a question about the amount of time which a respondent worked in the department and the amount of time in which a respondent worked in a specific team. These factors were variables in the data analyses.

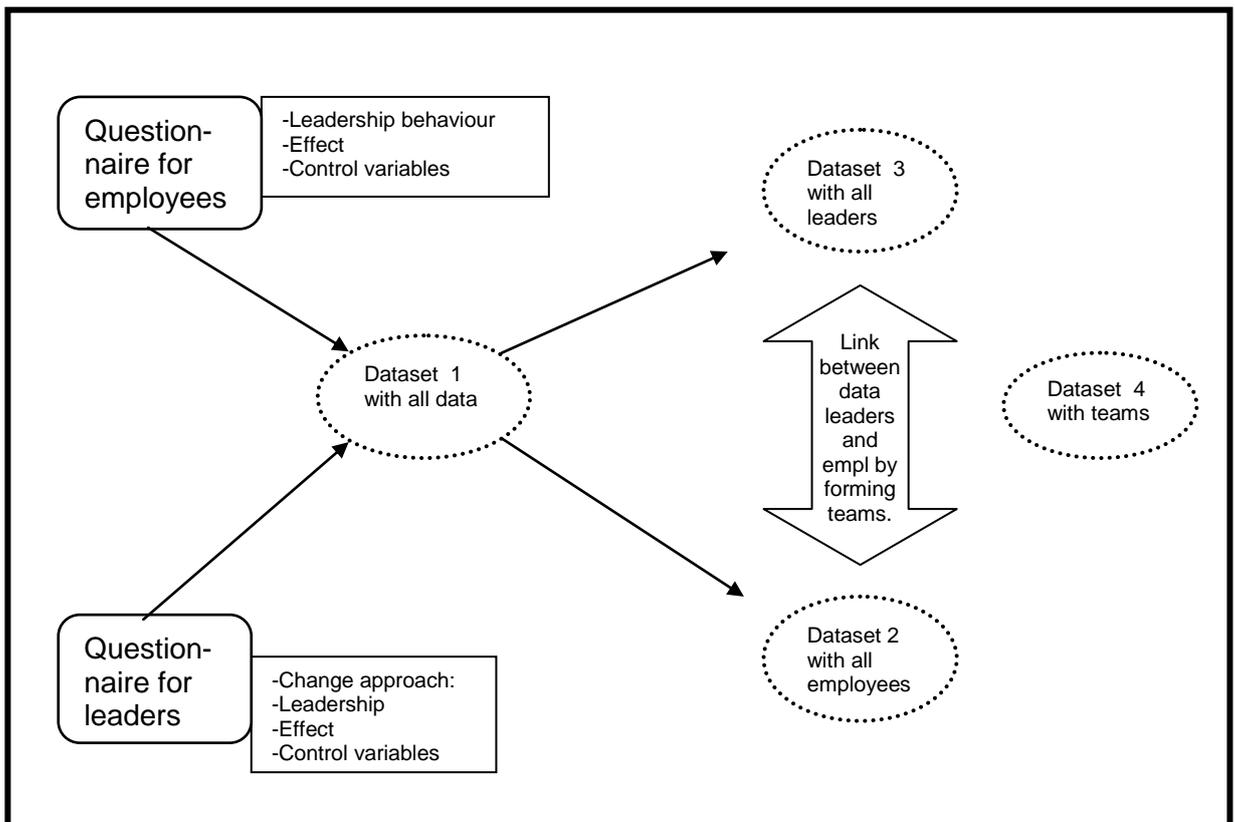
#### 4.4 Research instruments

The leaders' behaviour and the effectiveness of the change is measured via a two way approach. Leaders are asked about the behaviour they use in change situation. And also are the employees asked about the behaviour they see their leaders show and the way they judge the success of the change. The data that is abstracted from the leaders is linked to the data that is abstracted from the employees by team. The change approach is only measured amongst leaders (including the directors). This because I presume that most of the employees have no idea of the approach the organisation uses. In scheme 4.1 the collection of the data is illustratively explained. In the following two subsections the collecting of the data is described more specifically.

Behaviour can be witnessed in practice. A possibility to observe behaviour for this kind of research is to follow leaders in their daily work, witness their behaviour and use these observations to categorise the leaders' behaviour. This is an intensive way of researching, which takes a lot of time and in which the observer also influences the behaviour of the subject just by being there. Another way to evaluate behaviour of persons is to let them tell stories about situations in which they played a role. If these stories are focused on the actions of the person himself, the behaviour can be observed through the stories the persons tell. A third way is to use a survey which takes you less deep into the matter, but gives the opportunity to work with large

quantities of respondents. In this research the method of storytelling is used to get inside information to make it possible to prepare the survey and make sense of the results from the statistical analysis. The collecting of stories starts with an interview with the directors from both departments (two per department). In these interviews the directors are first asked to tell about the context of the change their departments are going through. From each department I interviewed five leaders which were appointed by the directors as being a cross section of the leaders in their department. In total I interviewed fourteen leaders. The information from the interviews is used to describe the context and goal of the change in this report, to compose a questionnaire that indicates the effectiveness of the change which is used in the survey and to be able to make more sense out of the results from the survey.

In the survey the four directors are asked to fill in a questionnaire with the questions on leadership and on change approach. The data from these questionnaire will be used in validating the variables for leadership and change approach. The data of the directors will not be used in the further analysis of the leadership practices, the effect and the change approach. Because I am searching for a direct link between leaders, their reported behaviour and their employees' assessment of that behaviour, I can only use data of leaders that have a direct relation with employees on the work floor. All other leaders from both organisations are asked to fill in a questionnaire with the subjects: leadership, change approach, effect and control variables. All leaders have at least a few employees on the work floor that they lead directly. An example of the questionnaire that is spread amongst leaders can be found as appendix 4 (not available in the electronic version).



*Scheme 4.1: measuring leaders behaviour, change approach and effectiveness*

To get a good image of the leaders' behaviour in the context of the organisation and the effect of that behaviour on the change in the organisation, both leaders and employees are used as a source of data. Employees are asked to fill in a questionnaire

with the subject: their leaders behaviour, effects of the change and control variables. The questionnaire is basically the same one that is used for leaders. The difference is that it is converted to be filled in by the employees. For the data-analysis the data collected from the leaders is linked with the data from their employees. An example of the questionnaire that is spread amongst employees can be found as appendix 5 (not available in the electronic version). Both the questionnaire for the leaders as the one for the employees were tested to check for possible problems and vagueness. The remarks from the test panel were incorporated into the final questionnaires.

## 4.5 Population and distribution of the survey

As described in the second chapter, the blue and the green department have a different characteristics. Most of the workers in the blue department work directly with the public. In the green department are most of the employees working with organisations that deal with the public. They have different educational levels and not every employee has access to a computer. Therefore is decided that the questionnaires for employees in both departments could not be distributed in the same way. In this paragraph I explain which choices were made and why I made these choices.

In the green department almost all employees have access to a computer and they have an email address at the department. Their level of education and the character of their job make that most of them are used to process data or work with questionnaires. In the department there are several layers of leaders. Partly these are leaders that lead leaders and some employees, partly these are leaders that lead employees that work with an end product. All people working in the green department were asked to participate in this investigation.

In the blue department there is a great part of the employees that doesn't have access to a computer or email account at the department. The characteristics of their work and in some cases the level of their education make that quite a few of them are not used to process data or work with questionnaires. This heightens the uncertainty of this part of the population finishing the questionnaire. The lack of a department email address leaves no easy way to reach this part of the population. For this study I decided to leave out a part of the employees. The part that is left out are the employees that work in the operational part of the department. Their leaders are included in the data collection as being employees (lead by another layer of leaders).

The questionnaires were distributed through a internet based survey program: Survey Monkey. This program is used to form the questionnaire in a way that makes it easy to fill in and follow. It is used for the sending of the questionnaire, thank emails and reminder emails. And it is used to collect the data. A last remark about the distribution of the survey: because I am working in one of the departments, I left out me and my team.

## 4.6 Validity and reliability survey + variables

For scientific research you need accurate and consistent measure. There are two terms used in scientific research to indicate this: validity and reliability. Validity is a term used to indicate "whether an instrument actually measures what it sets out to measure". The term reliability is used to indicate "whether an instrument can be interpreted consistently across different situations" (Field, 2009, p. 11). In this

paragraph I will describe in which ways I will work to heighten both validity and reliability of this research.

Field (2009, p. 11-12) points to two kinds of validity. The first is criterion validity: does an instrument measure “what it claims to measure”? The second is content validity: does the instrument cover the “whole range of the construct” it claims to measure? To heighten the criterion validity I use as much as possible, instruments that are already used, tested and validated in former research. I will also use answering categories to make it easier to answer and with an option to fill in neither agree nor disagree, to not force respondents to enter answers in a certain way. I will check the questions for non suggestiveness. To control the influence of characteristics of the respondents, I use control variables. These give me the opportunity to see if the relationship between change effects, leadership and change approach is affected by these control variables. To raise the content validity I use instruments with several questions on the variable I want to measure. For the questionnaire on effect, which I construct myself, I put in every segment of the effect that both departments aimed for during the change process.

High response is also important for a high validity. A low response can lead to not proportionally divided results, because some respondent groups are over represented (Thiel, 2007, p. 93-94). To heighten the response I investigate the whole population, use a digital data collecting program and equal answering categories to make answering easy. I will also give information on the questionnaires and route the survey in a logical and understandable way. The lay-out makes the survey easy to follow and I will make it impossible to skip questions to be sure to get completed questionnaires. Before I sent out the survey to the population I will announce it via the leaders (in the green department) and one of the directors (in the blue department). The respondents get two weeks to fill in the survey. At the end of the two weeks I sent a reminder to the part of the population that doesn't respond or doesn't complete the survey. I ask them again to complete the survey and give them another week. For the leaders I repeat this exercise again a week later to get as much leaders as respondents as possible.

I work on the reliability of the research in three ways. First I leave out the uncompleted questionnaires from the statistical analysis. The second way is to work with SPSS to make it possible for others to repeat the statistical analysis on the same dataset. The third provision is to use Cronbach's alpha in the statistical analysis to measure the internal consistency of the variables.

## 5. Results / data analysis

The fourth chapter gave information on the empirical elements of this study. In this chapter I will describe the results that were found in the empirical part of this research: the survey. For the analysis of the data I used the computer program PSAW statistics version 18. In this chapter I start with reporting on the response and data preparation. After that I continue with the factor analysis and reliability test for the variables change approach, leadership behaviour and effect. This is followed by descriptive statistics and further analysis of the correlation between the variables of leadership, change approach, effect and the control variables. At the end of this chapter the comparing of means is covered as well as the regression analysis of different models of correlated items.

### 5.1 Response and data preparation

As described in the fourth chapter, I aimed to ask both employees and leaders in both departments. The questionnaire was send to a total of 595 possible respondents of which 352 employees and 28 leaders working in the green department and 186 employees and 29 leaders working in the blue department. In table 5.1 there is more detailed information on the response.

Of the employees a total of 293 responded and of the leaders 45 responded. After leaving out the uncompleted questionnaires, I was left with 252 completed questionnaires filled in by employees and 41 completed questionnaires from the leaders. This leads to a total response of 293 (50%) of which 252 (47%) employees and 41 (74%) leaders.

	Green department	Blue department	Total
Questionnaires send employees	352	186	538
Response employees	177 (50%)	116 (62%)	293 (54%)
Completed questionnaires employees	144 (41%)	108 (58%)	252 (47%)
Questionnaires send leaders (incl. directors)	28	29	57
Response leaders (incl. directors)	25 (89%)	20 (69%)	45 (79%)
Completed questionnaires leaders (incl. directors)	23 (82%)	17 (59%)	41 (72%)

Table 5.1: Response.

All the answers of the respondents are collected through the internet based computer program Survey Monkey. From this program the data is exported to excel, the program in which I prepared the data for analysis in SPSS. In SPSS further preparations were done to make analysis possible. The data were prepared on three levels. The first dataset is data from all respondents that completed the questionnaire (n=293). This dataset was used for the factor and reliability analysis. The second dataset includes data of all employees and leaders that filled in the complete questionnaire, but leaves out the four directors (n=289). As explained before, they were left out here because they lead leaders and not the employees that act in the change process. This second dataset is used for the analysis of correlation and regression on an organisational level. The third dataset consists of data of teams. In this set the data from a leader and the mean scores of his team members are collected per team. The variable for effect is a combined team variable (50% employees outcomes, 50% leaders outcome). There were 29 leaders and groups of employees that could be united. Per united team there were 1-12 employees that responded. In table 5.2 you can see the amount of teams with their amount of respondents.

Amount of teams	Amount of respondents
4 teams	1 leader and 1 employee
2 teams	1 leader and 2 employees
6 teams	1 leader and 3 employees
2 teams	1 leader and 4 employees
1 team	1 leader and 5 employees
4 teams	1 leader and 6 employees
3 teams	1 leader and 7 employees
2 teams	1 leader and 8 employees
3 teams	1 leader and 10 employees
2 teams	1 leader and 12 employees
29 teams	Average of 1 leader and 5.3 employee

Table 5.2: Amount of teams and respondents.

We can see that the team size in the dataset teams varies between a leader and an employee and a leader and twelve employees. In both departments the amount of employees that actually work with one leaders varies between 2 and 25. So there is no good definition of team size which I can use to exclude cases. I realise a team result with data from only one or two employees is meagre, when it in real life consist of more than five persons. I decided to work with this dataset anyway because the direct link between the scores from a leader and his employees can give insights in other aspects of correlation between effect and leadership.

## 5.2 Factor analysis and reliability of the factors

Change approach, leadership behaviour and effect are latent variables. Therefore I used a combination of questions to measure different aspects of these variables. To investigate if these combinations of questions are indeed a result of the underlying latent variable and consistently reflect the variables I'm aiming to measure, I used factor analysis and reliability analysis of the factors. As a measure of reliability I used Cronbach's alpha. These techniques validate my questionnaire and give me the directions to make scales for the three latent variables. In this paragraph I describe the results from the factor and reliability analysis for the three latent variables.

### 5.2.1 Leadership behaviour

For measuring the five leadership behaviours that Rowland and Higgs (2008) found, I used a questionnaire (see 4.3.1) with 5 questions for each leadership style: Attractor, Edge and Tension, Container, Transforming Space and Shaping behaviour. It was filled in by all the respondents, both employees and leaders (n=293).

I first started with the factor analysis of these five clusters of questions separately because they were supposed to represent the latent variables of the five leadership practices. For each cluster of questions I checked if they could be seen as one component. After the unrotated factor analysis, I checked the KMO measure and checked if that could be higher if one of the questions was left out. If the KMO measure was bigger than 0.7 which is rated as good (Field, 2009, p.647) I decided to leave the scales as they were and go on with testing the reliability. The results of this exercise can be seen in the following table 5.3.

Leadership style	KMO measure	Amount of components	Question numbers
Attractor	0.838	1	1,15,21,23,25
Edge and Tension	0.645	2	2,3,5,22,25
Container	0.850	1	4,6,9,14,17
Transforming Space	0.835	1	7,8,10,16,20
Shaping	0.799	1	11,12,13,18,19

Table 5.3: KMO measures leadership practices.

The questions that were theoretically placed in the Attractor, Container, Transforming Space and Shaping leadership practices were recognised as one component and have a KMO measure higher than 0.7. The answers to the questions that belong with the Edge and Tension leadership style lead to two components and the KMO is lower than 0.7. This is shown in table 5.4.

	Component	
	1	2
SvL2 EdgeTension1 not avoiding difficult conversations.	.861	-.235
SvL3 EdgeTension2 communicating open and directly.	.768	-.372
SvL25 EdgeTension5 prepared to make 'tough calls'.	.811	.010
SvL5 EdgeTension3 sets stretching goals.	.147	.857
SvL22 EdgeTension4 set the bar high and keep it there.	.546	.648

Table 5.4: Component Matrix component division Edge and Tension leadership style.

By leaving out question 5, I would be leaving out the question that scored the highest correlation on the second component and the lowest on the first component. Extracting question 5 in Edge and Tension lead to one component with a KMO of 0.676 (table 5.5), which is mediocre but I decided it was enough to continue with the reliability test.

Leadership style	KMO measure	Amount of components	The number of the questions
Edge and Tension	0.676	1	2,3,22,25

Table 5.5: KMO measure Edge and Tension leadership style.

### 5.2.1.1 Multicollinearity can be a problem

As a last check before the reliability test, I decided to look at the correlations between the various items in the scales I decided for. With large datasets like this (n=293), the computer program will find factors even if the various items are not that correlated (a lot of correlations below 0.3, (Field, 2008, p.648). There can also be a problem if the correlation is too high. This phenomena which is called multicollinearity, can cause a problem in the factor analysis because when items are too highly correlated, it is impossible to see which unique contribution an item has to the factor. A quick check for multicollinearity can be done by looking at the correlations between the different items. If there are high correlations above 0.8 it is necessary to do further tests or consider to leave the highly correlating variables out. (Field, 2009, p.547-550.)

In table 5.6 the correlation between the different items within the five leadership practices can be found. There is quite a high correlation, but no measures that lead me to believe there is problematic multicollinearity. With measuring leadership practices high correlations between items are quite common. Because Rowland and Higgs (2008) found that the four leadership practices: Attractor, Edge and Tension, Container

and Transforming Space were adding to the positive effects of change, I decided to make another scale with those four included. I called this scale Changing Leadership Practices (CLP), after the name that Rowland and Higgs use for the combination of the four practices. Because Rowland and Higgs (2008) found that Shaping has a negative effect on the outcome of change, I didn't add Shaping to this.

		AttractorTotal =1,15,21,23,24	EdgeTension Total =2,3,22,25	ContainerTotal =4,6,9,14,17	TransformSpace Total =7,8,10,16,20	ShapingTotal =11,12,13,18,19
AttractorTotal =1,15,21,23,24	Pearson Correlation	1	,694**	,828**	,835**	,782**
	Sig. (2-tailed)		,000	,000	,000	,000
	N	293	293	293	293	293
EdgeTensionTotal =2,3,22,25	Pearson Correlation	,694**	1	,739**	,710**	,684**
	Sig. (2-tailed)	,000		,000	,000	,000
	N	293	293	293	293	293
ContainerTotal =4,6,9,14,17	Pearson Correlation	,828**	,739**	1	,833**	,800**
	Sig. (2-tailed)	,000	,000		,000	,000
	N	293	293	293	293	293
TransformSpace Total=7,8,10,16,20	Pearson Correlation	,835**	,710**	,833**	1	,814**
	Sig. (2-tailed)	,000	,000	,000		,000
	N	293	293	293	293	293
Shaping Total=11,12,13,18, 19	Pearson Correlation	,782**	,684**	,800**	,814**	1
	Sig. (2-tailed)	,000	,000	,000	,000	
	N	293	293	293	293	293

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 5.6: Correlation between scales of leadership practices.

For further analysis I decide to leave the scales of leadership practices as styles apart but also to make a new scale with a combination of change leadership practices. For the six leadership style scales the Cronbach's alpha was calculated to have an indication of the reliability of the scales (table 5.7). For the Attractor scale Cronbach's alpha is 0.836, for Edge and Tension was it 0.738, Container has a Cronbach's alpha of 0.847, Transforming Space of 0.811, Shaping of 0.808 and CLP the four Changing Leadership Practices came to be 0.953.

Leadership style	Cronbach's alpha
Attractor	0.836
Edge and Tension	0.738
Container	0.847
Transforming Space	0.811
Shaping	0.808
CLP: Changing Leadership Practices	0.935

Table 5.7: Cronbach's alpha's for leadership style scales.

A five scales score above 0.7 is generally seen as a acceptable value (Field, 2009, p. 675). I will therefore use the six scales for leadership behaviour in my further analysis.

### 5.2.2 Change approach

For measuring change approach I used a questionnaire that is meant to measure the four types of change approach that Rowland and Higgs describe (see paragraph 4.3.2). The questionnaire was filled in by the leaders (n=41) and consisted of four clusters of questions which indicate directive approach, self assembly approach, master approach

and emergent approach. I first started with the factor analysis of these four clusters of questions separately. The questions that should be a cluster, did not relate to each other as a group. After that I decided to explore the complete set of questions, for components that could be extracted. The first exploratory unrotated and rotated factor analysis lead to the extraction of only 2 components and with a Kaiser-Meyer-Olkin (KMO) measure of below 0.5. This indicates that the pattern in correlation is too diffuse to conclude that the set of variables leads to the latent variables: the four types of change approach. I decided for two things:

- to check if the questions could be interpreted in different ways and could therefore fit to more than one of the change approach styles,
- to check if the 2 components that I found could be explained by the theory about change approach.

When looking at the different ways in which a question could be explained, I found 7 questions that could be interpreted in different ways and therefore could be fitted in more than one of the types of change approach (questions 2, 5, 13, 18, 22, 24 and 25, see appendix 2 for the questions). I decided to exclude these questions from further investigation. In Higgs and Rowland's theory about change approach, as we have seen in the third chapter, they come to four change approaches by using two axes. Looking at the questions included in the two components that I found in the first factor analyses, it seemed that the axe of straightforward versus complex was represented in the outcome of this analysis.

Leaving out the seven multi-interpretable questions, I did a rotated (varimax) factor analysis and forced it on two components. The idea of the division into straightforward and complex approach gave better results than the first factor analysis did. But there were still two problems. There was again a questionable KMO measure under 0.5 and there were four questions that didn't fit in the new division. Two of these questions theoretically fit the complex approach (23 and 29) but were dealt in the straightforward approach component and for two it was the other way around (4 and 16). I decided to leave these odd four questions out and see what the factor analysis would bring. This time the rotated (varimax) factor analysis on the answers to the 20 left questions forced on two components, lead to a two component division (see table 5.3 below, component 1 is complex and component 2 is straightforward) with a KMO measure of 0.577, which is still mediocre but apparently the best that can be received with this dataset.

	Component	
	1.Complex	2.Straight-forward
VB1: emergent 1	.668	-.323
VB3: emergent 2	.563	-.223
VB7: emergent 3	.314	
VB8: master 2	.747	-.255
VB9: master 3	.636	
VB12: master 4	.639	
VB15: emergent 4	.770	-.332
VB17: master 5	.622	.272
VB19: emergent 5	.672	
VB20: master 6	.808	
VB21: master 7	.839	
VB26: master 10	.555	.412

VB27: master 11	.705	
VB6: direct 1		.615
VB10: direct 2		.533
VB11: self assembly 3		.725
VB14: direct 4	-.223	.477
VB28: direct 6		.754
VB30: self assembly 6	.203	.627
VB31: direct 7		.680

Table 5.8: Rotated Component Matrix change approach.

For the reliability test I used the two scales for the measurement of change approach that came out of the factor analysis: the scale of complex change approach (component 1) and the scale of straightforward change approach (component 2). For both these scales the Cronbach's alpha was calculated to have an indication of the reliability of the scales. For the complex scale Cronbach's alpha is 0.901 and for the straightforward scale this is 0.743. Both are above 0.7 which is generally seen as an acceptable value (Field, 2009, p. 675). I will therefore use both the scales for change approach in my further analysis.

### 5.2.3 Effects of change

The questionnaire that was meant to measure the effect of the change process was filled in by employees and leaders (n=289). These questions were divided in the themes of area and demand based working (question 1-6) as one category and working together (questions 7-11) as another category. The 5 remaining questions were standard questions about change goals such as improved quality, customer satisfaction, productivity etcetera. (See appendix 3 for the questionnaire in detail.)

Because there were three different themes within the questions, I started with putting these categorised questions into three different scales and did a rotated and unrotated factor analysis. The last five questions turned out as an component, but the first 11 questions didn't turn up as being two components. I decided to do an explorative factor analysis to check which other combinations could be likely. I did both a rotated as unrotated factor analysis on the complete set. The rotated factor analysis showed 4 components and had a KMO measure of 0.771, which is seen as adequate (Field, 2009, p 647). The results are shown in table 5.9. I checked the composition of the component with the questions that were asked and 3 of them seemed to fit as a cluster by theory also. These were: working together, general effect and districts (see table 5.10, for the questions see appendix 3, the number correspond). The fourth component was a mix of different goals that were not that clearly related in theory (I called this Competence). I decided to go on with the division into 4 components as factors indicating the latent variables of effect. The correlation matrixes gave no reason for great concern for multicollinearity. The variable for the general effect has high correlations between the items. The ones for productivity and efficiency are above 0.8, but as the others are under 0.8 I decided to leave both the items in the variable. In the variable Competence was the correlation between 3 items somewhat under 0.3, but the general picture of the inter item correlations was good enough to proceed with the analysis.

	Component			
	1 General effect	2 Competence	3 Working together	4 Districts
Effect question1		.630		
Effect question5		.779		
Effect question6		.568		
Effect question10		.666	.310	
Effect question11		.728	.304	
Effect question2				.801
Effect question3				.839
Effect question4		.612		.494
Effect question7			.748	
Effect question8			.831	
Effect question9		.461	.605	
Effect question12	.836			
Effect question13	.773			
Effect question14	.846			
Effect question15	.916			
Effect question16	.881			

Table 5.9: Rotated component matrix for questions about effect.

For the 4 effect variables I calculated Cronbach's alpha (table 5.10) and checked the correlation tables for correlations above 0.8 and below 0.3. The Cronbach's alpha's all turned out above 0.7, which is enough to accept the factors as reliable.

Effect scale	Cronbach's alpha	Questions included
General effect	0.913	12, 13, 14, 15, 16
Competence	0.733	1, 5, 6, 10, 11
Working together	0.732	7, 8 and 9
Districts	0.714	2, 3, 4

Table 5.10: Cronbach's alpha's for variables for effect.

### 5.3 Descriptive statistics and correlations

To see which variables are associated with what, I analysed correlations between the different variables for leadership, change approach, effect and the control variables. I did this for the dataset with the data from all leaders and employees and for the dataset with team data. I used a bivariate correlation analysis on all these variables. In the two correlations tables (table 5.11 and 5.12) on the following pages, you will find the results of this analysis for the variables that had significant Pearson's correlation coefficient. In the tables you will find these coefficients and indication of their significance. All the variables that didn't correlate significantly with any of the others, are left out of the table. An interesting fact is that the four leadership practices as lose variables did not give significant correlations. In the correlation analysis I therefore used the variable CLP with the four change leadership practices incorporated. Because shaping gives such different effects than the CLP, shaping was kept as an individual variable.

### 5.3.1 The complete dataset

The complete dataset consist of data from 289 respondents of which 37 are leaders. Change approach is measured only amongst leaders and therefore has an n of 37. (For two variables some data of respondents is missing (Salary scale n=287 and Service years n=284).) In table 5.11 you will find the results and in the following subsections I will describe means, standard deviations and correlations for the variables.

	Mean	S.D.	N	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	4 Change leadership practices	3,66	0,75	289													
2	Shaping behaviour	3,58	0,74	289	,846***												
3	Outcome: working together	3,96	0,97	289	,142**	,077											
4	Outcome: general effect	3,45	0,91	289	,381***	,326***	,175**										
5	Outcome: district	2,82	1,15	289	,021	,026	,062	,112*									
6	Complex change approach	3,05	0,70	37	,303*	,290*	,050	,212	-,363**								
7	Straightforward change approach	3,24	0,65	37	,186	,189	-,121	,047	,349**	-,091							
8	Education level	3,67	0,55	289	-,047	-,058	,097	,114*	-,116**	-,105	-,086						
9	Gender	-	-	289	-,017	,014	,123**	-,060	-,107*	,204	,023	,027					
10	Department	-	-	289	,066	,105*	-,003	,085	-,438***	,547***	-,316*	-,217***	,152**				
11	Salary scale	3,54	0,79	287	,127**	,121**	,148**	,193***	-,078	,103	-,295*	,453***	-,091	,121**			
12	Age in categories	3,87	1,08	289	,095	,117**	,011	,007	-,172**	-,056	,198	-,237***	-,222***	-,132**	,043		
13	Service years	9,04	9,36	284	-,023	,026	,018	-,030	,201***	-,335	-,052	-,351***	,104*	-,290***	-,210***	,532***	
14	Function	-	-	289	-,318***	-,358***	-,020	-,273**	-,017	-A	-A	-,212**	,106	-,016	-,452**	-,047	,059

\*=α<0.1, \*\*=α<0.05, \*\*\*α<0.01, A=Cannot be computed because at least one of the variables is constant.

Table 5.11: Correlations between variables, complete dataset.

### *5.3.1.1 The 4 Change Leadership Practices*

This variable measures the four Change Leadership Practices (CLP): Attractor, Edge & Tension, Container and Transforming Space. The overall mean of this variable is 3.66 which is a score that is between: 3 neither agree nor disagree and 4 agree (that the leader shows behaviour that fits in the changing leadership practices category). The standard deviation is 0.75. The variable correlates significantly ( $\alpha < 0.05$ ) with shaping leadership behaviour, the outcomes: working together and general effect and salary scale. These are all positive correlations. The higher the score on the CLP, the higher the score on shaping leadership behaviour, the outcomes: working together and general effect, and salary scale. The correlation with the outcome: general effect is stronger than the correlation with the outcome: working together. The variable function has a significant negative correlation with CLP. Which means there is a significant difference in the scores of leaders and employees.

### *5.3.1.2 Shaping behaviour*

The variable Shaping behaviour measures the scale of the shaping behaviour that a leader shows. The overall mean on this variable is 3.58 which is a score that is between: 3 neither agree nor disagree and 4 agree (that the leader shows behaviour that fits in the shaping behaviour category). The standard deviation is 0.75. The variable correlates significantly ( $\alpha < 0.05$ ) with the CLP, the outcome: general effect, salary scale and the age in categories. These are all positive correlations. The higher the score on Shaping behaviour, the higher the score on the variables the CLP, the outcome: general effect, salary scale and the age in categories. The variable function has a significant negative correlation with CLP. Which means there is a significant difference in the scores of leaders and employees.

### *5.3.1.3 Outcome: working together*

The variable outcome: working together measures the progression in working together within the municipal departments. One of the objective of the change process is that employees of the departments work more together with their colleagues. The mean of this variable is 3.96, which lies close to the score of 4 agree (the mean agrees that they work more together than before). The standard deviation is 0.97. The variable outcome: working together correlates significantly ( $\alpha < 0.05$ ) with the outcome: general effect, the gender and the salary scale. These are all positive correlations, which means that when the score on the variable outcome: working together is higher, also the variables the outcome general effect, the gender and the salary scale are higher.

### *5.3.1.4 Outcome: general effect*

The variable outcome: general effect measures the progression in the general effects of organisational growth such as higher efficiency, quality, customer satisfaction, productivity and speed. The mean score on this variable is 3,45, which is between: 3 neither agree nor disagree and 4 agree (that the general effect improved). The standard deviation is 0.91. The outcome: general effect has a positive significant ( $\alpha < 0.05$ ) correlation with CLP, shaping behaviour, the outcome: working together, and the salary scale. Which means that if the score on the variable outcome: general effect is higher, the score on CLP, shaping behaviour, the outcome: working together and the salary scale are also higher. The variable function has a significant negative correlation with CLP. Which means there is a significant difference in the scores of leaders and employees.

### *5.3.1.5 Outcome: district*

The variable outcome: district measures the extent in which someone is focused on the district as an important actor in his work. The mean score on this variable is 2.82, which is a score between: 2 disagree and 3 neither agree or disagree (with the district as being an important actor). The standard deviation is 1,15. This variable has a positive correlation which is significant ( $\alpha < 0.05$ ) with outcome: general effect, straightforward change approach, and service years. Which means that when the score on outcome: district is higher, the scores on straightforward change approach and outcome: general effect are also higher. Outcome: district has a negative correlation with complex change approach, education level, department and age in categories. Which means that a higher score on outcome: district, means a lower score on complex change approach, a lower education level, a person is more likely to work in the blue department and younger.

### *5.3.1.6 Complex change approach*

The variable complex change approach measures the dimension of the approach in which change is seen as complex. The mean of this variable is 3,05, which is close to 3 neither agree nor disagree (with the change approach being a complex one). The standard deviation is 0.70. This variable is only measured amongst leaders. The variable has a positive significant ( $\alpha < 0.05$ ) correlation with CLP, shaping behaviour and department and a negative correlation with the outcome: district. Which means that a higher score on complex change approach means a higher score on both CLP and shaping behaviour, higher scores are more apparent in the green department and the higher the score on complex change approach, the lower the score on outcome: district.

### *5.3.1.7 Straightforward change approach*

The variable straightforward change approach measures the dimension of the approach in which change is seen as straightforward. The mean of this variable is 3,24, which is between 3 neither agree nor disagree and 4 agree (with the change approach being a straightforward one). The standard deviation is 0.65. This variable is only measured amongst leaders. The variable correlates significantly ( $\alpha < 0.05$ ) with complex change approach and department. The correlation with complex change approach and straightforward change approach is a positive one: if one goes up, the other goes up. The correlation between straightforward change approach and department is a negative one, which means that higher scores on the straightforward approach are more likely in the blue department.

### *5.3.1.8 Control variables*

There are several correlations between the variables on Leadership, Change approach and Effect and the control variables. These were described in the subsections above. In this subsection in short some information on the relevant control variables. Education was measured in a scale with four possible answers. A score of 3,69 lies between 3 MBO / Havo / VWO and 4 HBO / WO. The variable gender is measured with the score 0 for males and 1 for females. There are slightly more female respondent than there were male respondents: 54% female and 46% male. For the variable department it was possible to score a 0 for the blue department and a 1 for the green department. There were slightly more respondents from the green department, 43% blue and 57% green department. For an indication of the salary, the salary scale was used with 5 possible categories. A mean score of 3,54 on this scale means that the

average salary scale of the respondents lies between: 3=7-9 and 4=10-12. The age was measured in 6 categories. This variable has a mean of 3.87, which is close to the age scale of 4: 40-49. The variable service years measures the amount of years (in years + months) in which someone works for the department. The variable function tells if someone is a leader or an employee. 87,2% of the respondents is employee and 12,8% is leader.

### *5.3.2 The dataset teams*

The dataset teams is an aggregation of the individual scores of which the correlations were discussed in paragraph 5.3.1. The complete dataset teams consist of data from 29 teams with a leader and employees of the same team. The teams effect (outcomes: working together, general effect and district) is an effect in which the leaders score on the variable is combined with the mean score of the teams employees (50-50). For the correlation table I used the leaders scores on his leadership and his scores on the change approach. To see what the relations are between what the leader says he does and the effect. The change approach was only measured amongst leaders. The control variables are the variables of the employees. This to see if the effect of the teams composition on the other variables. In table 5.12 you will find the results and in the following subsections I will describe means, standard deviations and correlations for the variables.

#### *5.3.2.1 The 4 Change leadership practices*

This variable measures the four Change Leadership Practices (CLP): Attractor, Edge & Tension, Container and Transforming Space. The overall mean of this variable is 4,35 which is a score that is between: 4 agree and 5 strongly agree (that the leader shows behaviour that fits in the changing leadership practices category). The standard deviation is 0.35. The variable correlates significantly ( $\alpha < 0.01$ ) with shaping leadership behaviour, the outcome: general effect and ( $\alpha < 0.05$ ) with straightforward change approach. These are all positive correlations. The higher the score on the CLP, the higher the score on shaping leadership behaviour, the outcome: general effect and straightforward change approach.

#### *5.3.2.2 Shaping behaviour*

The variable Shaping behaviour measures the scale of the shaping behaviour that a leader shows. The overall mean on this variable is 4.30 which is a score that is between: 4 agree and 5 strongly agree (that the leader shows behaviour that fits in the shaping behaviour category). The standard deviation is 0.30. The variable correlates significantly ( $\alpha < 0.05$ ) with the CLP and ( $\alpha < 0.1$ ) with the outcome: general effect. The higher the score on Shaping behaviour, the higher the score on the variables the CLP and the outcome: general effect.

#### *5.3.2.3 Outcome: working together*

The variable outcome: working together measures the progression in working together within the municipal departments. One of the objective of the change process is that employees of the departments work more together with their colleagues. The mean of this variable is 3,93, which lies close to the score of 4 agree (the mean agrees that they work more together than before). The standard deviation is 0.50. The variable outcome: working together correlates significantly ( $\alpha < 0.1$ ) with the outcome: general effect, education and leader in current function. There is a significant ( $\alpha < 0.05$ ) positive

relationship with salary scale. These are all positive correlations, which means that when the score on the variable outcome: working together is higher, also the variables the outcome general effect, education, leader in current function and salary scale are higher. There is a negative significant ( $\alpha < 0.1$ ) correlation with the straightforward change approach.

	Mean	S.D.	N	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4,30	0,30	29													
2	4,35	0,38	29	,647***												
3	3,93	0,50	29	,057	,084											
4	3,75	0,39	29	,547***	,339*	,330*										
5	2,86	0,89	29	,212	,124	0,23	-,044									
6	3,23	0,58	29	,169	,257	-,055	,035	-,418**								
7	3,22	0,67	29	,401**	,256	-,319*	,132	,413**	-,124							
8	3,57	0,47	29	,120	,253	,339*	,285	-,179	,171	-,349*						
9	-	-	29	-,182	-,059	,261	,073	-,628**	,310	-,359*	,320*					
10	-	-	29	-,071	,177	,025	,142	-,537**	,543***	-,275	,291	,282				
11	3,25	0,50	29	,081	,248	,409**	-,018	,103	,061	-,395**	,750***	,141	,092			
12	3,93	0,65	29	-,127	-,104	,172	-,026	,399**	,304	,062	-,293	-,171	-,289	-,276		
13	2,15	1,49	29	,254	,273	,369*	,206	,202	,179	-,068	-,119	,013	,193	,069	,136	
14	1,92	2,01	29	,010	-,098	,122	,087	,423**	-,036	,227	,018	-,235	-,271	,035	,082	,211

\* $\alpha < 0.1$ , \*\* $\alpha < 0.05$ , \*\*\* $\alpha < 0.01$

Table 5.12: Correlations between variables, dataset teams.

### 5.3.2.4 Outcome: general effect

The variable outcome: general effect measures the progression in the general effects of organisational growth such as higher efficiency, quality, customer satisfaction, productivity and speed. The mean score on this variable is 3,75, which is between: 3 neither agree nor disagree and 4 agree (that the general effect improved). The standard deviation is 0.39. The outcome: general effect has a positive significant

( $\alpha < 0.01$ ) correlation with CLP, ( $\alpha < 0.1$ ) with shaping behaviour and the outcome: working together. Which means that if the score on the variable outcome: general effect is higher, the score on CLP, shaping behaviour and the outcome: working together are also higher.

#### 5.3.2.5 Outcome: district

The variable outcome: district measures the extent in which someone is focused on the district as an important actor in his work. The mean score on this variable is 2.86, which is a score between: 2 disagree and 3 neither agree or disagree (with the district as being an important actor). The standard deviation is 0.89. This variable has a positive correlation which is significant ( $\alpha < 0.05$ ) with straightforward change approach, age in categories and relationship leader employee. Which means that when the score on outcome: district is higher, the score on straightforward change approach is also higher, the age is higher (older) and there is a longer relationship between leader and employee. Outcome: district has a negative correlation ( $\alpha < 0.05$ ) with complex change approach, gender and department. Which means that a higher score on outcome: district, means a lower score on complex change approach, a person is more likely to work in the blue department and more often male.

#### 5.3.2.6 Complex change approach

The variable complex change approach measures the dimension of the approach in which change is seen as complex. The mean of this variable is 3,23, which is between 3 neither agree nor disagree and 4 agree (with the change approach being a complex one). The standard deviation is 0.58. This variable is only measured amongst leaders. The variable has a positive significant ( $\alpha < 0.01$ ) correlation with department. Which means that higher scores on complex change approach are more apparent in the green department.

#### 5.3.2.7 Straightforward change approach

The variable straightforward change approach measures the dimension of the approach in which change is seen as straightforward. The mean of this variable is 3,22, which is between 3 neither agree nor disagree and 4 agree (with the change approach being a straightforward one). The standard deviation is 0.67. This variable is only measured amongst leaders. The variable correlates significantly ( $\alpha < 0.05$ ) with CLP and outcome: district. The correlation with CLP and outcome: district is a positive one: if one goes up, the other goes up. There are negative correlations with ( $\alpha < 0.1$ ) between straightforward change approach and outcome: working together, gender, education and salary scale ( $\alpha < 0.05$ ). Which means that higher scores on the straightforward approach amongst males, persons with a lower education and salary and higher scores on straightforward approach lead to lower scores on outcome: working together.

#### 5.3.2.8 Control variables

There are several correlations between the variables on Leadership, Change approach and Effect and the control variables. These were all described in the subsections 5.3.2.1 – 5.3.2.7 above.

In this subsection in short some information on the relevant control variables. Education was measured in a scale with four possible answers. A score of 3,57 lies between 3 MBO / Havo / VWO and 4 HBO / WO. The variable gender is measured in the percentage females. There are more female respondent than there are male

respondents: 63% female and 37% male. The variable department measures at which department a team works. There are 62% respondents from the green department and 38% from the blue department. For an indication of the salary, the salary scale was used with 5 possible categories. A mean score of 3,25 on this scale means that the average salary scale of the respondents lies between: 3=7-9 and 4=10-12. The age was measured in 6 categories. This variable has a mean of 3.93, which is close to the age scale of 4: 40-49. The variable leader in current function says something about the amount of time (years + months) that a leader works in his current position. The mean is 2,15 years. The variable service years measures the amount of years (years + months) in which someone works for the department. Relation leader employee is a variable that registers the length of the relationship between the leader and the employee. The mean here is 1,92 years.

### *5.3.3 Differences between individual and aggregated dataset*

The complete dataset is a dataset on individual level. The dataset teams is an aggregated dataset of the individual data. The data from the leader is aggregated with the mean scores of his team, to form one team score. There are some interesting differences between the results of both analysis. In the complete dataset we find a significant correlation between the outcome: working together and the CLP, gender, salary scale and function. But in the dataset teams we find for the same outcome no significant correlation with CLP, but a correlation with straightforward change approach. And there is only one significant correlation with a control variable left: with salary scale. For the outcome: general effect we find a significant correlation with CLP, shaping, education level, salary scale and function in the analysis of the complete dataset. However in the dataset teams, we only find a significant correlation with CLP and shaping and there are no significant correlations with control variables left. For the outcome: district the changes in significant correlations are not that big. Almost all of the significant correlations in the complete dataset: complex change approach, straightforward change approach, education, gender, department, age and service years, are present in the analysis of dataset teams. Only education and service years are not significant anymore and the variable relationship leader employee becomes significant.

There is also a shift in significance of correlations when it comes to the relations between the change approaches and the leadership practices. For the variable complex change approach we find significant correlations with CLP and shaping behaviour in the complete dataset. In the dataset teams these significant relations are not found. In the analysis of complete dataset there are no correlations found between the straightforward change approach and any of the leadership practices. In the dataset teams, we find a significant positive correlation between the straightforward change approach and the CLP.

## 5.4 Comparing means

In the last paragraph we have seen that there was a significant difference between the scores of leaders and the scores of employees on the leadership variables. I want to explore this difference a little more. I'm also curious if there is a difference in the effects of the change that leaders report and the effects that employees score. This because the means on effect were higher in the dataset teams than they were in the complete dataset. The last thing I want to explore is if there is a difference between the department scores on change approach. This because I don't get clear results on the

influence of change approach styles, but the data indicate a difference between the departments. To explore these differences in scores I will use an independent samples t-test.

#### 5.4.1 Comparing leaders and employees

In interpreting both the tables with means, standard deviations and correlations, I have seen that the mean scores on leadership in the complete dataset lie lower than these scores in the dataset teams. Because the leaders' judgement on effect adds 50% to the team effect, but leaders are only 37 of the 289 respondents in the complete dataset, I assume that leaders and employees score differently. In the correlation analysis on the complete list I included a dummy variable to check also for the effect of being a leader or employee on the outcomes. This variable was called function.

		Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference	
									Lower	Upper
4 change leadership practices	Equal variances assumed	19,674	,000	5,684	287	,000	,71565	,12590	,46785	,96345
	Equal variances not assumed			9,639	96,300	,000	,71565	,07425	,56828	,86302
Shaping behaviour	Equal variances assumed	13,465	,000	6,504	287	,000	,79249	,12184	,55268	1,03230
	Equal variances not assumed			9,891	76,329	,000	,79249	,08012	,63293	,95205
Outcome: working together	Equal variances assumed	2,667	,104	,338	287	,736	,05795	,17155	-,27971	,39561
	Equal variances not assumed			,404	54,774	,688	,05795	,14337	-,22941	,34531
Outcome: general effect	Equal variances assumed	4,410	,037	4,802	287	,000	,73792	,15366	,43548	1,04037
	Equal variances not assumed			6,022	57,609	,000	,73792	,12254	,49260	,98324
Outcome: deeltgemeente	Equal variances assumed	1,278	,259	,285	287	,775	,05774	,20226	-,34036	,45583
	Equal variances not assumed			,266	45,203	,791	,05774	,21689	-,37904	,49451

Table 5.13: T-test comparing means of leaders and employees, N=289 (37/252).

In table 5.13 the scores on the independent t-test are presented. For both the CLP and Shaping behaviour the scores of leaders are significantly higher than those of employees (Levene's test for equality of variances turns out significant, so I used the outcomes in the row equal variances not assumed). The difference between the means is 0.72 and 0.79 (on a scale of 5). To measure the effect size I calculate  $r$  for both CLP and Shaping. They were CLP  $r=.49$  and Shaping  $r=.50$ . Both can be seen as a large effect which account for 25% of the variance (Field, 2009, p.57).

The variable function that we have seen in the correlations table, had a significant negative correlation with the outcome: general effect. This means that leaders score higher on effect than employees. In table 5.13 the results for the t-test are presented. There is no significant difference between leaders and employees on the means of the outcomes: working together and district, but there is a significant difference between the means on outcome: general effect (Levene's test for equality of variances turns out significant, so I used the outcomes in the row equal variances not assumed). The mean of leaders lies 0.74 higher than that of employees (on a scale of 5). To measure the

effect size I calculated  $r$ . For the outcome: general effect the  $r=.33$  which, can be seen as a medium effect of approximately 10% of the total variance (Field, 2009, p.57).

### 5.4.2 Comparing departments

In the correlation tables 5.11 and 5.12 we have seen that the variable department correlates with the variables change approach (complex and straightforward). To explore this I did a t-test of which the results can be found in table 5.14. There is no significant difference on the variable complex change approach, but there is one on the variable straightforward change approach (Levene's test for equality of variances doesn't turn out significant, so I used the outcomes in the row equal variances assumed). There is a difference between the mean scores on this variable of 0.62 on a scale of 5 It's higher when you work at the blue department. The  $r=.41$  which is between a medium and large effect and I estimate that it explains around 15% of the variance (Field, 2009, p.57).

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference	
									Lower	Upper
Complex Change Approach	Equal variances assumed	11,165	,002	-1,544	39	,131	-,37369	,24202	-,86323	,11584
	Equal variances not assumed			-1,395	22,123	,177	-,37369	,26786	-,92902	,18163
Straightforward Change Approach	Equal variances assumed	1,160	,288	2,773	39	,008	,61765	,22276	,16708	1,06822
	Equal variances not assumed			2,694	30,836	,011	,61765	,22930	,14988	1,08541

Table 5.14: t-test comparing means for both departments,  $n=41$  including directors.

## 5.4 Regression analysis

In the third paragraph of this chapter we have read about the relations between the different variables. Correlations indicate that there is a relationship, but they do not say anything about the direction of causality. You don't know if the first variable causes the second to go up or down or that it works the other way around and you don't know if there are other variables which were or were not measured that could affect the results (Field, 2009, p. 173-174). For the variables that were correlated I wanted to discover which predictor variables causes an outcome variable and which predictor variables make the biggest difference in terms of outcome. To do this I used regression analysis. I am interested in the effect of leadership and change approach on the intended effects of the change process. The dependent variables that I chose are therefore the three outcomes that gave significant correlations with the variables for leadership and change approach: outcome: working together, outcome: general approach and outcome: district. In the first subsection the results for the complete dataset are described. In the second subsection the results for the regression analysis of the dataset teams is covered.

### 5.5.1 Regression analysis on complete dataset

I made three models for the regression analysis on the complete dataset, for each outcome I made one model. I used a linear regression model with hierarchical blockwise entry of the variables. I used the variables that had significant correlations

with the outcomes. We saw these in the first subsection of the third paragraph. Per outcome I made a regression model with in the first block all the control variables + a dummy variable function to check for significant differences between the scores of employees and leaders. In the second block I put the two variables for leadership. Because only leaders filled in the questionnaire on change approach, it was for the complete dataset not possible to include the variables on change approach in the regression analysis.

In table 5.15 the results on the regressions analysis on the complete dataset are reported. For all the variables, the betas are given and for each block the difference in R square is given. To check for multicollinearity I used VIF and tolerance. Field (2009, p. 242) gives guidelines to use for assessing multicollinearity. There should be no VIF higher than 10, the average VIF should not be substantially greater than 1 and the tolerance should be higher than .2. If this is the case, we can presume that there is no case of multicollinearity. The average VIF is 1.93. There are no VIF higher than 3.8 and is no tolerance below .264. Although the average VIF is higher than 1, I conclude on basis of all these statistics that the results are not influenced by multicollinearity. In the following subsections I will describe the results of the regression analysis.

	Outcome: working together	Outcome: general effect	Outcome: district
Education level	,078	,093	,034
Gender	,147**	-,072	-,024
Department	-,022	,054	-,418***
Salary scale	,181**	,055	-,054
Age in categories	-,020	-0,42	,091
Function	,101	-,138**	-,006
Service years	,108	,060	,027
$\Delta R^2$	,052	,098	,202
<b>4 Change leadership practices</b>			
	,306***	,309***	-,006
Shaping behaviour	-,161	,002	,068
$\Delta R^2$	,034	,083	,003

\*\*= $\alpha < 0.05$ , \*\*\* $\alpha < 0.01$

Table 5.15: regression for outcomes: working together, general effect and district on complete dataset.

### 5.5.1.1 Outcome: working together

The total effect of the model on the variable outcome: working together is 8.5% ( $R^2 = 0.085$ ). The contribution from the control variables is 5.2% ( $\Delta R^2 = 0.052$ ). The contribution from leadership is 3.4% ( $\Delta R^2 = 0.034$ ). For the outcome: working together, the three variables gender, salary scale and the 4 change leadership practices have a significant t-score. These three variables have a direct relationship with the outcome and by using these variables it is possible to predict the outcome: working together. For this research the most important result of the regression analysis on outcome: working together, is the significant effect of the 4 change leadership practices. This effect is not that big, the second block of the model only contributes 3.4% of the variance on the variable outcome: working together. The beta is .306, which means that when CLP goes up one standard deviation (0.75), the outcome: working together goes up with ,306 standard deviations ( $.306 \cdot 0.97$ )=0.30 points on a scale of 5. This is only true when the other variables are held constant.

Gender has a positive effect on outcome: working together. In this case it means that if a women scores outcome: working together is .147 standard deviations ( $.147 \times 0.97$ )=0.14 points higher on the scale of 5. This is only true when all other variables are held constant. Salary scale has a positive effect on the outcome: working together. When all other variables are held constant and the score on salary scale increases with one standard deviation (0.79), the outcome: working together goes up with ,181 standard deviation which is ( $.181 \times 0.97$ )=0.18 points on a scale of 5.

#### 5.5.1.2 Outcome: general effect

The total effect of the model on the variable outcome: general effect is 18.1% ( $R^2 = 0.181$ ). The contribution from the control variables is 9.8% ( $\Delta R^2 = 0.098$ ). The contribution from leadership is 8.3% ( $\Delta R^2 = 0.083$ ). For the outcome: general effect, the two variables function and the 4 change leadership practices have a significant t-score. These two variables have a direct relationship with the outcome and by using these variables it is possible to predict the outcome: general effect. For this research the most important result of the regression analysis on outcome: general effect, is the significant effect of the 4 change leadership practices. This effect is not that big, the second block of the model only contributes 8,3% of the variance on the variable outcome: general effect. The beta is ,309, which means that when CLP goes up one standard deviation (0.75), the outcome: general effect goes up with .309 standard deviations ( $.309 \times 0.91$ )=0.28 points on a scale of 5. This is only true when the other variables are held constant.

Function was a dummy variable to check if the scores of leaders and employees differed significantly. Function has a negative effect on outcome: general effect. In this case it means that a leader scores higher on outcome: general effect with .138 standard deviations ( $.138 \times 0.91$ )=0.13 points on the scale of 5. Leaders score more positive on the outcome effect than employees do. This is only true when all other variables are held constant.

#### 5.5.1.3 Outcome: district

The total effect of the model on the variable outcome: district is 20.2% ( $\Delta R^2 = 0.202$ ). The contribution comes from the control variables. There is almost no contribution from leadership ( $\Delta R^2 = 0.003$ ). For the outcome: district, the variables department has a significant t-score ( $t=-7.15$ ). Department has a medium to large effect on the outcome, with the t-score being -7.15, the  $r=0.40$ . The variable department adds around 15% of the variance on the variable outcome: district (Field, 2009, p.57). When all other variables are held constant, someone working in the blue department scores .418 standard deviation ( $.418 \times 1.15$ )=0.48 higher on the outcome: district increases. Working in the blue department has a medium to large positive effect on the outcome: district.

### 5.5.2 Regression analysis on dataset teams

The dataset teams is an aggregation of the individual scores of which the regression analysis was discussed in former sub-paragraph. I made three models for the regression analysis on the dataset teams, for each outcome I made one model. I used a linear regression model with hierarchical blockwise entry of the variables. Having such a small group of teams ( $n=29$ ), I decided not to take the same control variables for each of the outcomes, but to take only the ones that were relevant for a specific outcome. Therefore I used the variables that had significant correlations with that specific outcome (see table 5.12 for the significant correlations). Because of the small n

I also decided that  $\alpha < 0.1$  would be a significant score. We saw these in paragraph 5.3.2. Per outcome I made a regression model with in the first block the control variables that were relevant for that specific outcome. In the second block I put the two variables for leadership. In the third block I put the two variables for change approach.

In table 5.16 the results on the regressions analysis on the dataset teams are reported. For all the variables, the beta's are given and for each block the difference in R square is given. To check for multicollinearity I used VIF and tolerance. Field (2009, p. 242) gives guidelines to use for assessing multicollinearity. There should be no VIF higher than 10, the average VIF should not be substantially greater than 1 and the tolerance should be higher than .2. If this is the case, we can presume that there is no case of multicollinearity. Because of the different control variables that were used, there are three different average VIF. They are: 2.00, 1.64, 1.61. There is no VIF higher than 2.8 and is no tolerance below .360. Although the average VIF is higher than one, I conclude on basis of all these statistics that the results are not influenced by multicollinearity. In the following subsections I will describe the results of the regression analysis.

	Outcome: working together	Outcome: general effect	Outcome: district
Education	,272	,309	-
Gender	-	-	-,383**
Department	-	-	-,237
Salary scale	,135	-	-
Age in categories	-	-	,220
Leader in current function	,410*	,161	-
Relation leader employee	-	-	,250*
$\Delta R^2$	,296	,140	,621
<b>4 Change leadership practices</b>			
4 Change leadership practices	,065	,570**	,013
Shaping behaviour	-,079	-,155	,200
$\Delta R^2$	,019	,233	,039
<b>Complex change approach</b>			
Complex change approach	-,196	-,097	-,140
Straightforward change approach	-,172	,050	,066
$\Delta R^2$	,042	,011	,015

\*= $\alpha < 0.1$ , \*\*= $\alpha < 0.05$ , \*\*\*= $\alpha < 0.01$

Table 5.16: regressions on outcomes: working together, general effect and district on dataset teams.

### 5.5.2.1 Outcome: working together

The total effect of the model on the variable outcome: working together is 35.7% ( $R^2 = 0.357$ ). The contribution from the control variables is 29.6% ( $\Delta R^2 = 0.296$ ). The contribution from leadership is 1.9% ( $\Delta R^2 = 0.019$ ) and from change approach 4,2% ( $\Delta R^2 = 0.042$ ). For the outcome: working together, the variable leader in current position is significant. There is no significant contribution from leadership or change approach. The variable leader in current position has a positive effect on outcome: working together. In this case it means that if the score on leader in current position increases with one standard deviation (1.49) and all the other variables are held constant, the score on outcome: working together increases with .410 standard

deviations  $(.410 \times 0.50) = 0.21$  points on the scale of 5. This means the longer that a leader works in his current position, the higher the score on outcome: working together.

#### *5.5.2.2 Outcome: general effect*

The total effect of the model on the variable outcome: district is 38.4% ( $R^2 = 0.384$ ). The contribution from the control variables is 14.0% ( $\Delta R^2 = 0.140$ ). The contribution from leadership is 23.3% ( $\Delta R^2 = 0.233$ ) and for change approach it is 1.1% ( $\Delta R^2 = 0.011$ ). For the outcome: general effect, the variables 4 change leadership practices has a significant t-score. These variable has a direct relationship with the outcome and by using this variable it is possible to predict the outcome: general effect. This effect is quite large, the second block of the model contributes 23.3% of the variance on the variable outcome: general effect. The beta is .592, which means that when CLP goes up one standard deviation (0.38), the outcome: general effect goes up with .570 standard deviations  $(.570 \times 0.39) = 0.22$  points on a scale of 5. This is only true when the other variables are held constant.

#### *5.5.2.3 Outcome: district*

The total effect of the model on the variable outcome: district is 67.5% ( $R^2 = 0.675$ ). The contribution from the control variables is 62.1% ( $\Delta R^2 = 0.621$ ). The contribution from leadership is 3.9% ( $\Delta R^2 = 0.039$ ) and from change approach 1.5% ( $\Delta R^2 = 0.015$ ). For the outcome: district, the variables gender and relation leader employee are significant. There is no significant contribution from leadership or change approach. Gender has a negative effect on outcome: working together. In this case it means that a man scores outcome: working together .383 standard deviations  $(0.383 \times 0.89) = 0.34$  points higher on the scale of 5. Which means that males score higher on outcome: district. The relationship with the variable relation leader employee is a positive one. If the score on relation leader employee increases with one standard deviation (2.0), the score on outcome: district is .250 standard deviations  $(.250 \times 0.89) = 0.22$  points higher.

### *5.5.3 Summing up regression results*

In the regression analysis we discovered which predictor variables cause an outcome variable and which make the biggest difference in terms of outcome. We have seen that the results from the regression analysis of the two datasets differ. Looking at the outcome: working together, we see that in the regression analysis on the complete dataset the variables gender, salary scale and the CLP have a small but positive significant effect on the outcome. In the regression analysis on the dataset teams, we only find this effect from the variable leader in current position. For the complete dataset and the outcome: general effect the variables function and the CLP have a great significant positive effect on the outcome. The regression analysis on the dataset teams also shows a large significant effect of the CLP on the outcome. The regression analysis on the last outcome, outcome: district, displays the department plays a large role when the analysis is done on the complete dataset. The analysis on the dataset teams produces a significant effect from gender and relation leader employee on the outcome.

In the next chapter conclusions, discussion and recommendations for further research are presented.

## 6 Conclusions, discussions and recommendations

The final chapter of this report contains the conclusions, discussions and recommendations which can be reproduced from the findings that were described in the fifth chapter. There is one conclusion for each question and hypothesis which was defined in the first and third chapter. These are divided into three paragraphs of which the first contains the conclusions and discussions on change approach, the second contains the conclusions and discussions on leadership behaviour, and the third contains the conclusions and discussions on the main question. In these first three paragraphs the conclusions are discussed by using the theories which were outlined in the third chapter. In the fourth and last paragraph I give some recommendations for further research and for the departments to get more positive results out of the change processes.

### 6.1 Conclusions and discussion on change approach

In this paragraph I will conclude and discuss on the questions and hypothesis concerning change approach: the first and second core question of my study and the first hypothesis.

Question 1. What approaches to change management are used by leaders in the blue and the green department?

I was not able to abstract the four different change approaches from Higgs and Rowland (2005) from the collected data. I was able to abstract two change approaches that corresponded with the complex and straightforward division that Higgs and Rowland made. The data show that on average these change approaches are used on a low level. The means lie just above the score which indicates neither agree nor disagree in both datasets. In a comparison between the average scores of the departments, I found no significant difference on the variable complex change approach. But I found one on the variable straightforward change approach. There is a difference between the mean scores on this variable which indicates a medium to large effect (15%). Leaders in the blue department use a more straightforward change approach than leaders in the green department.

Question 2. What approach to change management is related to the effects that the departments intend?

In the correlation analysis I found strong significant correlations between intended effects and change approaches. In both datasets for the outcome: districts, the complex change approach is negatively correlated. Whereas the straightforward change approach is strongly and significantly positively correlated. In the dataset teams the outcome: working together, was strongly and significantly positively correlated to the straightforward change approach. Therefore I found indications that a straightforward change approach is positively related to the intended effects. Although there is a significant correlation between the intended effects and straightforward change approach, I found no evidence in the regression analysis that indicates a direct relationship between those variables. Therefore I found no results that support the first hypothesis:

Hypothesis 1: An approach to change in which change is assumed as complex, is positively related to the effects that are intended.

I reject this hypothesis. In my research I found that an approach to change in which change is assumed as being complex, is not positively related to the effects that are intended. The way that change is approached on itself, doesn't seem to be important if you want the change to be effective. Because there are significant correlations between change approach and effect, it could be that there is an indirect link. I will reflect a bit more on this in the third paragraph of this chapter.

The absence of a positive relationship between a complex change approach and change outcomes is not coherent with the results that Rowland and Higgs found (2008). They found that both the approaches in which complexity was assumed, the emergent and master approach, were more likely to bring success than the simplistic straightforward approaches: directive and self assembly. The only context in which they found that a directive approach was at least neutral, was in a low magnitude change that was driven by an internal source. The changes that the departments intent to make are in my opinion high magnitude. The change affects the whole department, the leaders have no direct control over the change, the source of the change lies outside the departments and the complexity of the change is high because it affects the complete way of working and thinking of the leaders and employees. All these characteristics implicate a high magnitude change.

I can think of five possible explanations for this incoherency:

The first is that there is a positive result on the intended effect, but because the outcome that Rowland and Higgs use in their research, consists of more than only the intended effect, I measured something different than they did and therefore we have different results and conclusions.

For the second explanation I point towards the difference between the results of leaders and employees on effect (see third paragraph of this chapter). Rowland and Higgs measured the effect of the change approaches by asking the leaders that were interviewed about the successfulness of the change. I also asked employees from who we have seen in the results, that they score lower on effect than leaders do.

The third is that I didn't use the appropriate instrument for measuring change approach or intended effects in this context. It could be that a survey is not appropriate for testing the effect or the change approaches or that the questionnaires were not good enough. Or it could be that the data the leaders produced, shows no coherent pattern.

The fourth explanation could be that one of the other theories on change approach is more appropriate for these organisations. Both Jonker and De Witte (2004) and Beer and Nohria (2000) describe that their more emergent approaches, wandering and theory O, are almost impossible to execute. Whereas their travelling approach and theory E are not that effective. Therefore, they recommend the use of a combination of the change approaches they describe. It could be that these ideas or the use of a combination of the change approaches of Rowland and Higgs, fit better on the situation I studied.

The fifth explanation is that also cultural and organisational differences between public and private organisations and between the Netherlands and the United Kingdom could be underlying conditions that explain for the differences between my findings and those of Rowland and Higgs.

## 6.2 Conclusions and discussions on leadership practices

In this paragraph I will conclude and discuss on the questions and hypotheses concerning leadership practices: the third and fourth core questions of my study and the second, third and fourth hypothesis.

Question 3. What leadership behaviours are used by leaders in the blue and the green department?

I found evidence that all five leadership practices are used in both departments. The results give no indications that one leadership practice is used more than the other. The mean scores lie around four on a scale of five, when five is the score which indicates the most leadership. Leaders indicate that they use more leadership than employees seem to notice, according to their scores.

For both the CLP and Shaping behaviour the scores of leaders are significantly higher than those of employees. There are big differences between the means and the effect can be seen as a large effect which accounts for 25% of the variance. In my study I therefore found results that support the second hypothesis:

Hypothesis 2: Leaders have a more positive view of their own behaviour than their employees.

The results indicate that leaders have a more positive view of their own behaviour than their employees have. This could mean that leaders believe they show more behaviour than they actually do, or that employees don't see that much of it. It could also mean that not the actual behaviour of the leaders that is experienced by the employees that is important, but the way a leader sees his own behaviour makes the difference. In the second subparagraph of this paragraph I will elaborate on this further.

The first results of the analysis gave rise to a question if there is also a difference between leaders and employees when it comes to judging effect size. Therefore, I checked if leaders could have a more positive view on the realisation of intended effects than their employees have. The results show a significant difference between the means of leaders and employees on outcome: general effect. This effect is a medium effect of approximately 10% of the total variance. This medium effect is only found for the variable outcome: general effect. For the other two outcomes: working together and district, there is no evidence. My conclusion is that the results support the thesis that leaders have a slightly more positive image of the realisation of intended effects than employees have. This could mean that leaders exaggerate the effects they see or that employees don't see that much of it. Leaders could also have a better overview on the overall effects. Whereas employees only see part of the effects that they encounter.

Question 4. What leadership behaviours are related to the effects that the departments intend?

Although I found no correlations between the four leadership practices on their own, I did find positive correlations of the four leadership practices as a combination named the Changing Leadership Practices (CLP). On basis of the results I can conclude that the four change leadership practices as a combination seem to be related to the intended effects of the departments. This is apparent on general effects of the organisation and also slightly on the improvement of working together, but not on the

specific goals the departments have for area and demand based working. On both datasets I found a strong significant correlation between the outcome: general effects and the CLP. This effect is also found in the results of the regression analysis. There I found a direct medium sized relation between the outcome and the CLP (8.3% of the variance) for the complete dataset and a large effect (23.3%) for the dataset teams. In the correlation results of the complete dataset there was also a strong positive correlation between the outcome: working together and the CLP. In the regression analysis this effect was still there, but it was small (3.5% of the variance). There was no significant correlation between the outcome: working together and the CLP measured on the dataset teams or with the outcome: district. The third hypothesis cannot be rejected:

Hypothesis 3: A combination of the four practices: Attractor, Edge and Tension, Container and Transforming Space will have a positive effect on the intended effects of the change process.

My conclusion is that I found results that support the hypothesis that the combination of the four change leadership practices have a positive effect on parts of the intended effect of the change process.

Rowland and Higgs however, found a large effect of the four change leadership practices on the outcomes of the change processes they researched. According to Rowland and Higgs (2008) a leader can make up to 50% of the variance in the outcome. I didn't find such a high percentage. I found a small to large positive effect of the change leadership practices on the intended effects of the change. On the dataset with the team data it was 23.3%, which I also find substantial. On the complete dataset only 8.3% of the variance could be explained by leadership behaviour. Furthermore, in contrast to the findings of Rowland and Higgs, I find no negative correlation between shaping behaviour and change outcomes. In fact I find a positive correlation which disappears in the regression analysis.

Our differences in findings could be due to the population I studied and the subjects that participated in my research. My study aimed specifically on the public sector. I also used data partly from top management, but mostly from middle management and employees. Furthermore I carried out my research in the Netherlands. The results and conclusions of Rowland and Higgs were mostly based on research in the private sector, in the United Kingdom and on top managers. Although they did some research in the public sector, on other continents and on middle managers, the difference between the complete population that was investigated could explain for the differences in results that I found. I will elaborate a bit more on this in the following subsections.

### *6.2.1 Public sector*

As we have seen in the third chapter the situation or context in which a leader does his work, makes a difference for the way he behave and also for the effect his behaviour will have on the outcomes. The focus on stability in bureaucratic organisations resists change and the nature of public organisations with their embedded practices and jurisdiction doesn't provide the best conditions for change processes (Cinite et al, 2009, Bennebroek Gravenhorst et al, 2003). Formal structures, rules, and procedures in organisations have as a consequence that it is not always possible to choose and decide on the behaviour you want to show (Metselaar, 1997). The public sector has more formal structures, rules, and procedure, so it could be possible that leaders just

have to go with the flow and don't have much influence on their own behaviour in the work situation. Also Rainey (1997) writes about the restrictions of managers in the public sector, which are bigger than those of leaders in the private sector. Warwick (in Rainey, 1997) says that middle managers in the public sector leave the responsibility and authority to the top management, due to these restrictions. Leaders in the public service also have more tasks than only managerial tasks (Rainey, 1997). They are policymakers as well and they also have to act in the political environment. So they seem to also have less time to use on leading their teams. It could be that in some organisational contexts the contribution of leadership to organisational outcomes is limited. This is especially the case in organisations where rules and procedures have to be followed to do the daily job. In these situations leadership is not that essential (Robbins, 2000). This could also be an explanation for the smaller effects that leadership seems to have on change according to the results from my study.

Leadership is not the only thing that influences the outcome of change. Rowland and Higgs find that up to 50% of the variance can be explained by the behaviour of leaders. The other 50% therefore is not explained. Metselaar and Cozijnsen (2005) describe the willingness to change as an important factor that influences change outcomes. Two important influences on this willingness are the previous experiences with change and the time and manpower that is available. In the public sector and especially in Rotterdam there have been a lot of changes this last decade. These had mixed outcomes. There are also a lot of change processes simultaneously going on in the municipality and the financial crisis confronts the municipality with large budget cuts. This means that the resources necessary for the change could not be available or that there is a competition between departments to get the scarce resources. We have seen earlier that Fernandez and Rainey (2003) describe that this competing for resources could be the case when there are more change processes in the same governmental organisation simultaneously. It could be that these factors: the previous experience and the available time and manpower, play a bigger role in public organisations than they do in private ones. The influence of the leader could be smaller due to the large impact of these factors.

These difficulties that public managers face, the situation in which public managers work, and the restrictions of public managers experience, could all contribute to the smaller effect of leadership behaviour on change outcomes that I find in comparison to the possible 50% that Rowland and Higgs (2008) describe.

### *6.2.2 Middle managers and employees*

My study used data from top management, middle management and employees. Metselaar (1997) described the role of middle managers as a double one. They are decision makers and also have to implement the change. This double role could influence the effect of their behaviour on the outcomes of the change. Also the use of data from employees could explain for the differences in outcome that I find in comparison with Rowland and Higgs (2008). The results of my study show me that the way that leaders are seen by their employees, differs from the way they see themselves. This is a common and logical phenomena. The way you think you behave and the intent you have with your own behaviour, are always stronger than the way it is seen by others. A simple reason for that is that you are the focal point of all your actions. Others have their focus on themselves and a lot of things around them. Their leader is only one of those things. Employees also see only the part of the leaders behaviour that they directly encounter. Which is only a small part of all the behaviour a leader displays. This common but interesting phenomena which I have also encountered in this study, should be taken into account when researching behaviour of

leaders and effect of a change process. It could be interesting to do some case studies in which an impartial investigator witnesses behaviour and effects when they take place. Until then I presume that the truth lies somewhere in the middle.

### 6.2.3 Country differences and shaping behaviour

There was one last hypothesis on shaping behaviour which needs some separate attendance. This because I think that the results I found could have something to do with differences between the countries in which the researches were done. The found results are not in line with the results that Rowland and Higgs (2008) found. The hypothesis is as follows:

Hypothesis 4: Shaping leadership behaviour will have a negative effect on the intended effects of the changes process.

In the correlation analysis I found a strong positive significant relation between shaping behaviour and the outcome: general effect in the complete dataset. In the dataset teams there was a small significant correlation. In the regression analysis I found no effects of direct influence of shaping behaviour on one of the outcomes. In the results of this survey I found no evidence to support the hypothesis that shaping behaviour has a negative effect on the intended effects of the change process. It seems that the use of shaping behaviour doesn't have a direct influence on the intended effects. Rowland and Higgs (2008) however, found a negative effect of shaping behaviour.

It is possible that there are differences in the results between that what Rowland and Higgs (2008) found and the results that I found, that can be explained by the cultural differences between the countries in which the researches are done. The effect of behaviour and the behaviour that is seen as normal, could differ. The Dutch are said to be quite direct, which is sometimes also seen as rude by people from other countries. Some of the cultural differences could explain for the fact that shaping seems to have a neutral effect in my study, instead of a negative effect. It could also be that the effective changing leadership practices in the Netherlands are somewhat different from those in the United Kingdom. I do not have specific conclusions on this, because this lies outside the scope of this study, but it is interesting to keep possible cultural differences in mind when assessing the results.

## 6.3 Conclusion and discussions around the main question

Although the first and second paragraph of this chapter already contain both conclusions and discussions on change approach and leadership behaviour, which are also part of the main question. This paragraph will contain the final conclusion and the conclusions and discussions around other interesting results that I found in this study. The main question of my study is as follows:

Main question: What behaviour and change approach of leaders in the green and blue department of the Municipality of Rotterdam is related to the effects the departments intend.

We have seen that the results lead to believe that the four changing leadership practices have a positive direct relationship with the intended effects of the change process in the departments. This effect is smaller than the effect that Rowland and

Higgs (2008) indicate. I have tried to explain this difference by pointing to the differences between the populations that were examined. It could be that the public service setting that I chose, the collecting of data amongst middle managers and employees, and the different cultural setting in the Netherlands, explain the found differences. Leadership behaviour seems to have a more evident impact on the intended effects of the change processes of the departments than change approach seems to have. Although there are strong significant correlations between change approach and intended effects, these are not apparent in the regression analysis.

I found some indications of a relationship between the use of a complex change approach and the five leadership practices. Because I found these correlations, I decided to search for interaction effects. There is a possibility that a combination of one of the change approaches and the change leadership practices would lead to a higher outcome on intended effect than the change leadership practices combined with the other change approach. I used Z-scores in SPSS and a multiplication of the Z-scores on the variable CLP and the change approach variables to search for interaction effects with the method of regression analysis. The dataset teams was usable for this because all the variables in this dataset are represented throughout the cases (leaders filled in the change approach questionnaire).

I didn't find any interaction effects. I do find correlations between the variables which indicate that there could be interaction effects and it could be that I don't find interaction effects because the dataset is relatively small and therefore doesn't show normal distribution. SPSS is limited to do statistical tests on normally distributed datasets. It doesn't have the options to do the robust tests which are needed to handle datasets that don't have normal distribution. Another possible problem with the dataset is that it is relatively small for the amount of predictors I used in my model. When testing for interaction, I used 6 to 9 predictor variables in the model and according to Field (2009, p. 223-223) with that amount of predictors I would have needed at least a sample size of 80 to a 110 cases. The dataset teams consists of 29 cases. The tests that I did on the complete dataset are not affected by the sample size, because with its 289 cases it is large enough for up to 20 predictors (Field, 2009, p. 223).

My conclusion is that although there are indications for a relationship between the change approaches and the intended effects, I cannot conclude that I found evidence for the existence of a relationship between those two.

### *6.3.1 Limitations of the regression model and generalisation of the results*

The results that I found in the regression analysis have their limitations. The sample size of the complete data set is large enough for the regression model to be liable. As mentioned before, for the dataset with the data of the 29 teams this is not the case. It is too small to be sure of its liability. This last remark is especially important when looking at the effects of change approach and interaction between change approach and leadership practices. That is because this is the only set in which both variables have a value for the cases in the dataset. For a regression model to be accurate enough to generalise, we have to know if all the necessary assumptions are met (Field, 2009, p. 220-221). The assumption of predictors being uncorrelated with external variables is not met. We know that there is a correlation between one of the outcomes and the change approach types. Unfortunately, I was not able to include the data on change approaches in the regression analysis done on the complete dataset (because this was only measured amongst leaders) and the dataset for teams is too small to draw conclusions on. We also have seen that there is a correlation between the change

approach types and the leadership practices. This last finding makes that a second assumption is not met. This is the assumption of interdependency. It could be that change approach and leadership styles are dependent on each other. The sample size of the “dataset teams” was too small to conclude that there is no evidence of interaction between the variables. The violation of these two assumptions makes that the results and conclusion cannot be generalised as easy as I hoped.

Although the regression model has its limitations, I do conclude that I have found enough evidence to acknowledge the positive effect of the CLP on the intended effects of the change processes in public organisations. Nevertheless, because of the limitations I will not conclude on the quantification of the effect and on the effect of change approach in change situations.

### *6.3.2 Effects intended with the change process*

The effects from the CLP I found in this survey were mostly concentrated around the outcome: general effect. I find this interesting because that outcome was added by me. I did that to also have some general improvements in the research which are generally important to all organisations. Nevertheless, these effects were not the ones which had the focus of the departments, according to the documentation and the information I got from the interviews with the leaders. I find almost no effect from leadership on the specific effects of area and demand based working. It could be that the questionnaire was not an appropriate measuring tool for measuring these effects. Or that the questions were not enough to measure the whole construct. But it could also be that there was not much effect at all the last year.

There is a reason why I think in specific the change process which should lead to area and demand based working could be not that effective. As described in the first chapter, most public organisations have more than one political master. Managers have to navigate between the wishes of these political masters and also need their support (Fernandez & Rainey, 2006). My observation is, that it is quite difficult to follow the wishes of the politician in the districts and at the same time follow the wishes of the one or more vice majors a department has to work for. These wishes are usually opposite to each other because the several political masters try to reach their own goals as soon as possible. Because of the scarce resources, the departments have to choose which political master they try to serve best. In most cases this is not the district politician because they are less influential and therefore it is less complicated to disappoint them.

### *6.3.3 Effect of control variables*

In the correlation analysis we found several control variables that have a significant relationship with the three outcomes. In the regression analysis five control variables showed a direct relation with one of the three outcomes. Department was one of those which had a direct effect on the outcome: district when measured on the complete dataset. I think this is an interesting outcome for which I will try to find an explanation in this subsection. The outcome: district was more positive for respondents working in the blue department. I think it is possible to explain this outcome by looking at the way both departments receive their budgets. The blue department receives 80% of the budget from the districts and only around 20% from the central municipality. The districts decide which product or service they want to spend their money on. Although the management of the blue department want the employees in the department to work

more area and demand based, there is already a natural incentive to do so: money. The green department doesn't have this kind of incentive. This department gets their budget from the central municipality and although the management wants the employees in the department to work more area and demand based, there is no force to correct the department when this is not happening. In the green department there has to be a shift in thinking to a more governance-like frame. Koppenjan and Klijn (2004) describe the governance or network approach to uncertainty, as a way of thinking in linkages and dependency from public actors to others. This is a complex mind shift when you come from a situation in which you thought you knew the answer to the problems that occur. I think the change to more area and demand based working in the green department therefore will be more complicated, must have more internal drive, and will take more time than in the blue department.

Rowland and Higgs (2008) found an effect of seniority on the behaviour of leaders. In my results I found that both the amount of time that a leader has been in his current position and the duration of the relation between a leader and an employee have a positive effect on the outcomes: working together and district. This effect could have something to do with trust. According to authors such as Metselaar and Cozijnsen (2005) and Duck (2003) trust is an important factor when it comes to the effectiveness of a leader. In a change process, both leaders and employees have to believe and have to trust in the capability of the organisation to handle the change. They have to feel interdependent. Furthermore, to built strong trust takes time (Robbins, 2000). Only people that have seen each other act on several occasions and experience a pattern in each other's behaviour, experience the stronger forms of trust. The more time a leader spends with his employees and team, the more trust will be present between them. This could explain that leaders that have spent more time in their current position or with a specific employee, are able to score higher on the intended effects with their team.

## 6.4 Recommendations

After conclusions and discussions, this last and final paragraph contains recommendations for further research and for the departments.

### 6.4.1 Recommendations for further research

The effects from the CLP I found in this survey, were mostly concentrated around the outcome: general effect. I find almost no effect from leadership on the effects the departments documents or the leaders in their interviews described. I have no good explanation for this. It could be that the other effects I tried to measure take more time to be visible or the way I measured these effects is not appropriate. Therefore it would be interesting to do further research on the realisation of the intended effects and how they are measured best. For this research, I would recommend a qualitative study using group interviews with leaders and employees combined in a group. By using group interviews there will be more discussion about the effects and more points of view, than by using individual interviews. I would recommend to use the statements I extracted from the interviews with the leaders and from the documents, to start group discussions on each of the subjects. Using this technique makes it possible to find more nuances in the effects.

Furthermore is measuring intended effects only a part of measuring the whole outcome of a change process. Before formulating conclusions on the outcome and

successfulness of a change process, it is also necessary to see if the achieved effects are sustainable and irreversible. There are also other aspects that could be interesting such as the amount of effort that was necessary and if the change process leads to better competences to handle change in the future (Rowland & Higgs, 2008, p. 111). These I did not investigate, but it would be interesting to investigate this in the future. I would recommend doing this in about two years time. At that point in time it is easier to conclude on sustainability and irreversibility. A qualitative method using group interviews would also be of use here.

As noticed earlier in this chapter, I researched a possible interaction effect between the change approaches and the leadership behaviour. This is interesting because it could be that the use of a combination of the CLP and for example a complex change approach leads to a higher effect of the change than using CLP in combination with a straightforward approach (or the other way around). Or it could be that, for example, shaping behaviour becomes a negative factor when it's combined with a complex change approach. These findings could lead to recommendations in which a combination of leadership practice and change approach is recommended or discouraged.

I found no significant outcomes when testing for interaction. It is possible that I don't find interaction effects because the data is not normally distributed. Because of the limitations of SPSS to work with other than normally distributed data, it was not possible for me to do further testing on the datasets. I recommend that other statistical tests are used to examine the data from this survey a bit further on interaction effects. Robust regression techniques are needed to explore the data further. Wilcox is one of the authors that describes robust techniques (Field, 2009). The programs that can be used for this are the software R and a program that is called S-Plus (Field, 2009, p. 163). As noticed earlier, the sample size was also an issue. I therefore recommend collecting more data from other departments in change, to be able to generalise the outcomes of the tests for interaction effects.

As mentioned in the third paragraph of this chapter, the limitations of the dataset reduce the possibility of generalising the results and conclusions in a quantitative way. On basis of the results, I can conclude that the CLP has a positive influence on intended effects of the change, but it is not possible to generalise the percentage of variance that the use of CLP causes. Therefore I recommend to collect more data from public organisations in change in the Netherlands. A larger amount of data will make it possible to also generalise the results from the regression analysis.

#### *6.4.2 Recommendations for the departments*

The four change leadership practices for which Rowland and Higgs (2008) found positive effects on change outcomes, also give positive outcomes in my study. I will therefore recommend both departments to invest in raising the four change leadership styles in the leaders in their departments. This can be done by evaluating the presence of the CLP on personal level and raising those by personal coaching or by peer supervision. Although I didn't find conclusive results on shaping behaviour, I will also recommend to work on deleting that leadership style from the departments. It is present at the same level as the other leadership practices and although I didn't find the negative effect that Rowland and Higgs found, I also didn't find a positive effect. Shaping behaviour is at its best behaviour that seems to be of no use and therefore wasted effort. A big downside to shaping behaviour is also that it causes the change

efforts and effects to attach to the leader personally. When this leader leaves the organisation or team, the effects of the change disappear.

Rowland and Higgs themselves (2008), give several practical tools and tips for a better usage of the CLP. Being extremely self aware, being able to work in the moment and in tune with the bigger picture, are the core traits of all the four practices (Rowland & Higgs, 2008. P. 284). These can be learned by practicing and receiving lots of feedback on your behaviour on the moment it occurs. The book of Rowland and Higgs (2008) includes also practical tools such as a list with the negative effects that you can see when one of the leadership practices is overdone or underdone. Furthermore there are interventions listed that combine several practices to get a maximum impact.

Rowland and Higgs (2008) found an effect of seniority on the behaviour of leaders. In the third chapter we have read about this effect. A more senior leader, uses more CLP and less shaping. In my results I found that both the amount of time that a leader has been in his current position, and the duration of the relation between a leader and an employee, have a positive effect on the outcomes working together and district. These outcomes give some input for recommendations. For departments in change or starting a change process, it could be better to invest in the leaders that already work in the department to keep them on their places, rather than to change teams or try to exchange leaders with other departments. A leader that is attached to a team for a longer period, has more trust of the team which works positively on the change outcomes.

There is a difference in the scores of leaders and employees on leadership behaviour and intended effects. Although there are several explanations for this, as a leader I would take this by heart and try to work on this subject. It could have positive effects when leaders are more active in showing their intended behaviour: exaggerate it a bit. This will also give you more feedback on your behaviour and therefore the possibility to adjust it. Furthermore, if you see those positive effects from your team: share those! By sharing the results and effects you see, your team will also feel more positive about the things that they have achieved and the team members will be able to see more positive effects themselves. We don't learn from our mistakes, but we learn from our successes: we know what to repeat! As I've seen in my own experience, it also helps to outline the difficulties of change in public organisations. This gives your team some insights. When they understand these difficulties better, they will be less frustrated when effects of their efforts don't turn up that quickly.

The inconclusive results I found on change approach, give me the input to recommend both departments to work more together in the management team to share the change approach you all use and believe in. Try to come to a shared vision of your departments approach to the change and use these gatherings also to work together and give feedback on the behaviour you want to show your employees.

For the management team in the green department, I specifically recommend to realise themselves that there are no natural incentives for area and demand based working imbedded in the organisational structure. This means hard work. The change to area and demand based working is a change in vision of the way the work should be done, and the position of the department and its employees, in this new way of working. Both vision and position have to change to a governance or network approach, in which actors are seen as depended on each other to do the best for the citizens of the city. Such a change takes time.

For the blue department I also have a specific recommendation. Although the department scores better on the intended effects linked to area based working. There is also work to be done. Employees seem to have a better idea of who their financial bosses are: the district. But the ideas of working together, sharing responsibility and dependency don't seem to be highly present within the organisation. Invest on these by teaching the governance perspective that is essentially the basis for area and demand based working.

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## Appendix 1 Leadership Practices questionnaire

1. In het werken met mijn team pas ik mijn leiderschapsbenadering bewust aan om verschillende doelen te bereiken.
2. In het werken met mijn team ga ik moeilijke gesprekken niet uit de weg.
3. In het werken met mijn team communiceer ik open en direct.
4. In het werken met mijn team maak ik expliciete afspraken met anderen (individuen, teams, etc.) over hun bijdrage aan veranderingen in de organisatie.
5. In het werken met mijn team stel ik moeilijk bereikbare doelen voor mijn team.
6. In het werken met mijn team creëer ik duidelijke grenzen waarbinnen mijn team de vrijheid heeft om te handelen.
7. Aan de hand van patronen en thema's die ik herken, vertel ik mijn team pakkende verhalen over veranderingen in de organisatie.
8. In het werken met mijn team concentreer ik de inspanningen van mijn team op het doorbreken van bestaande gedragspatronen.
9. In het werken met mijn team verzeker ik mezelf ervan dat het voor mijn team helder is wat er moet gebeuren, zodat de medewerkers in het team in staat zijn om veranderdoelen te bereiken.
10. In het werken met mijn team neem ik risico's in de zin van dat ik open ben naar anderen.
11. In het werken met mijn team is mijn veranderbenadering gebaseerd op mijn eigen ervaring met het doorvoeren van veranderingen.
12. In het werken met mijn team maak ik aan de mensen duidelijk wat ik verwacht dat er geleverd wordt.
13. In het werken met mijn team gebruik ik praktische richtlijnen die gebaseerd zijn op mijn eerdere ervaring met veranderingen.
14. In het werken met mijn team blijf ik kalm en zelfverzekerd wanneer ik geconfronteerd word met uitdagende situaties.
15. In het werken met mijn team creëer en communiceer ik een helder inzicht in onze huidige situatie als team.
16. In het werken met mijn team ben ik in staat om mogelijkheden te creëren die anderen de tijd te geven om op een andere wijze te gaan denken.
17. In het werken met mijn team voorzie ik mijn teamleden regelmatig van een heldere en consequente boodschap.

18. In het werken met mijn team ben ik helder over mijn eigen principes die ten grondslag liggen aan mijn benadering van veranderingen.
19. In het werken met mijn team ben ik persoonlijk een drijvende kracht voor veranderingen.
20. In het werken met mijn team werk ik eraan om een omgeving te creëren waarin mensen hun talenten kunnen gebruiken.
21. In het werken met mijn team gebruik ik de doelen en ambities van de organisatie om te helpen bij het creëren van een kernresultaat van veranderingen.
22. In het werken met mijn team leg ik de lat hoog en ik blijf deze steeds hoog leggen.
23. In het werken met mijn team leid ik veranderingen op een manier waarbij al mijn acties het doel van de organisatie versterken.
24. In het werken met mijn team werk ik eraan om een gezamenlijk gevoel van betekenis, identiteit en inhoud te creëren rond veranderingen die ik leid.
25. In het werken met mijn team ben ik bereid om “moeilijke beslissingen” over mensen te nemen.

*The original English questions (Changing Leadership Practices and Behaviours, Leadership Development Feedback, brought out by: Transcend, collaborators in change, May 2010). The questions are translated (see above) to Dutch and used in the survey*

1. Consciously adapt my leadership approach to achieve different purposes
2. Do not avoid difficult conversations
3. Am open and direct in communicating issues to others
4. Explicitly contract with others (individuals, teams etc) around their contribution to the change
5. Set stretching goals for my team
6. Create clear boundaries within which my team has freedom to act
7. Draw from the patterns and themes I sense to develop a compelling story of the change
8. Focus my team's efforts on breaking established patterns of behaviour
9. Ensure that my team are clear about what needs to happen to enable them to achieve the change goals
10. Take risks in terms of being personally open with others

11. My approach to change is based on my own experience of making it happen
12. Make it clear to people what I expect to be delivered
13. Use practical guidelines for change based on my previous experience
14. Remain calm and assured when faced with challenging situations
15. Create and communicate a clear understanding of our current situation as a team
16. Am able to create opportunities that allow time for others to think in different ways
17. Provide my team members with clear and consistent messages on a regular basis
18. Express my own principles which underpin my approach to change clearly
19. Act as a personal catalyst for change
20. Work to create an environment where people can use their talents
21. Use the aims and ambitions of the organisation to help create a core purpose for the change
22. Set the bar high and keep it there
23. Lead change in a way that all of my actions reinforce the purpose of the organisation
24. Work to create a shared sense of purpose, identity and intent in relation to the changes I lead
- 25 Am prepared to make the "tough calls" on people

## Appendix 2 Change Approach questionnaire

1. We moedigen iedereen aan om steeds betekenis te geven aan de veranderingen, soms verandert daardoor de betekenis van waar we mee bezig zijn.
2. De communicatie wordt centraal geregeld, maar het geven van feedback en aanbrengen van veranderingen, is mogelijk.
3. De nadruk ligt op kleine experimenten die de ruimte krijgen om te groeien en zich te verspreiden.
4. De kwaliteit van veranderingen is gewaarborgd doordat er toolkits beschikbaar zijn die mensen zelf op maat kunnen maken.
5. Door de hele organisatie heen zijn er veel verschillende interventies die bijdragen aan het realiseren van veranderingen.
6. De wijze van communiceren over veranderingen is centraal bepaald en wordt vervolgens verspreid over de organisatie.
7. Veranderingen worden gepland en geïmplementeerd volgens een “stap-voor-stap” methode (dit in tegenstelling tot het werken volgens één groot masterplan).
8. Medewerkers krijgen de mogelijkheid om binnen bepaalde kaders te innoveren.
9. Er is tijd geïnvesteerd in het opbouwen van de vaardigheden die we nodig hebben bij het leiden en implementeren van veranderingen.
10. De richting en inhoud van veranderingen wordt bepaald en ontwikkeld door een kleine groep in onze organisatie.
11. Er is een nauwgezette centraal bepaalde richting voor veranderingen en de verantwoordelijkheid voor de implementatie hiervan ligt bij de leiding van de afdelingen/teams.
12. Terwijl de richting wordt bepaald door één centrale groep, wordt de input van medewerkers gebruikt om te bepalen wat er precies moet gebeuren.
13. Om er zeker van te zijn dat we allemaal op hetzelfde spoor zitten, worden het proces en de voortgang nauwgezet gevolgd.
14. We volgen allemaal hetzelfde gestandaardiseerde veranderproces.
15. Het versterken van ieders kracht (binnen bepaalde principes) staat centraal in de veranderingbenadering.
16. De veranderingbenadering is gebaseerd op het verschaffen van een duidelijk kader en tools, zodat de verandering plaatsvindt.
17. De veranderbenadering is gebaseerd op het creëren van een sterk begrip over wat verandermanagement is.

18. De veranderbenadering is gebaseerd op een duidelijk programma en een duidelijke methodiek.
19. Het zelf invullen van veranderingen binnen een aantal basisregels staat centraal in de veranderbenadering.
20. We trainen mensen en geven ze daarna de vrijheid om veranderingen zelf door te voeren.
21. Er is fors geïnvesteerd in training met vrijheid tot handelen daarna.
22. De algemene richting van veranderingen en de “harde regels” zijn duidelijk.
23. Het hoger management concentreert zich op het verschaffen van een strategisch kader voor veranderingen.
24. Het hoger management voorziet de organisatie van de complete op modellen en kaders gebaseerde blauwdruk voor de veranderingen.
25. Organisatieveranderingen starten met een grote campagne door het hoger management, waarna de verdere uitvoering aan het management binnen de afdeling/teams wordt gelaten.
26. Er ligt veel nadruk op de dialoog.
27. Er ligt een veel nadruk op het luisteren naar de zienswijzen van anderen.
28. Informatie over veranderingen wordt verspreid vanuit de top via nauwgezet beheerde boodschappen.
29. Het vertellen van verhalen wordt sterk aangemoedigd binnen de organisatie.
30. De richting en inhoud van veranderingen worden strak gedefinieerd door het hogere management, maar de details worden overgelaten aan het management van de afdeling/teams.
31. Veranderingen worden uitsluitend geleid via een formele programmamanagementstructuur.

*The original English questions (RFLC Change Practices Questionnaire by: Rowland and Higgs, November 2010). The questions are translated (see above) to Dutch and used in the survey.*

1. We are encouraged to continuously “make sense” of the changes as they occurred, sometimes changing the meaning of what we were doing as we went.
2. Communications are centrally managed but enable two way changes and feedback.
3. The emphasis is on small experiments being allowed to grow and spread elsewhere.

4. Capability is built by providing standardized toolkits that people can use and “put together” themselves.
5. There are many interventions across the organisation to help make this change happen.
6. Communication is developed centrally and cascaded down the organisation.
7. Change is planned and implemented in a “step by step”, as opposed to “grand plan” fashion.
8. People are allowed to innovate against certain parameters.
9. Time is invested to build our skills in leading and implementing change.
10. The direction and solution for change is decided and developed by one small group in the organisation.
11. Letting people “do their own thing” is important.
12. Accountability for implementation is with local managers, within a tightly set “central” direction.
13. Whilst direction is from one central group, extensive engagement is used as input to what needs to happen.
14. Both the process and progress are tightly monitored to ensure we all stay on the same track.
15. We all have to follow the same standardized change process.
16. Empowering others within guiding principles is the driver of the approach to this change.
17. The approach to change is based on providing others with a clear framework and tools for making change happen.
18. The approach to this change is based on building a strong understanding of the principles of change management.
19. The approach to change is based on a clear program and method.
20. “Doing your own thing” within a few “big rules” is the driver of the approach to change?
21. We are trained and then given freedom to make change happen.
22. There is a big investment in training with freedom to act afterwards.
23. The general direction of change and “hard rules” are clear.
24. Senior management focus on providing a strategic framework for the change.

25. Senior management provide an overall architecture for the change based on models and frameworks

26. Communication involves a high profile senior level launch with follow up left to local management.

27. There is a strong emphasis on dialogue.

28. There is a strong emphasis on listening to the views of others.

29. Communication about the change is cascaded from the top in tightly managed messages.

30. Storytelling is positively encouraged across the organisation.

31. The direction and content of the change is tightly defined by senior management, but the detail is left to local management

Control of the change is exercised exclusively through a formal program management structure.

## Appendix 3 Outcomes of Change Process questionnaire

1. Mijn team werkt voor de mensen in de stad of in een specifiek gebied.
2. De belangrijkste opdrachtgever van mijn team is de deelgemeente.
3. De deelgemeente heeft de regie als het gaat om het werk in de wijken en gebieden.
4. Meer dan een jaar geleden: is het werk van mijn team gericht op een specifiek gebied in de stad, zoals een deelgemeente of een wijk.
5. Meer dan een jaar geleden: komen medewerkers uit mijn team voor hun werk buiten hun/ons eigen kantoorgebouw.
6. Meer dan een jaar geleden: komen medewerkers uit mijn team met het initiatief om nieuwe producten of diensten te ontwikkelen.
7. Medewerkers uit mijn team werken meer dan een jaar geleden samen met: andere collega's van het team of afdeling.
8. Medewerkers uit mijn team werken meer dan een jaar geleden samen met: collega's van een andere afdeling.
9. Medewerkers uit mijn team werken meer dan een jaar geleden samen met: collega's van een andere dienst.
10. Medewerkers uit mijn team werken meer dan een jaar geleden samen met: collega's van een deelgemeente.
11. Medewerkers uit mijn team werken meer dan een jaar geleden samen met: samenwerkingspartners van buiten de gemeentelijke organisatie.
12. In vergelijking tot een jaar geleden: is de kwaliteit van de producten en diensten die mijn team levert hoger.
13. In vergelijking tot een jaar geleden: zijn onze samenwerkingspartners meer tevreden over mijn team. (zoals de deelgemeenten, andere diensten, gesubsidieerde instellingen)
14. In vergelijking tot een jaar geleden: is de productiviteit van mijn team hoger.
15. In vergelijking tot een jaar geleden: is de efficiëntie van mijn team groter.
16. In vergelijking tot een jaar geleden: levert mijn team producten en/of diensten sneller.

*The outcome questions translated into English for this report*

1. My team works for the people in the city or for a specific area in the city.

2. The most important principal for my team is a district.
3. The district has the control when it comes to working in the neighbourhoods or areas.
4. More often than a year ago the work of my team is focused on a specific area in the city, such as a district or neighbourhood.
5. More often than a year ago my team comes outside their/our own office building to do their work.
6. More than a year ago my team takes the initiative to develop new products or services.
7. More often than a year ago do members from my team work together with other colleagues in the team or division.
8. More often than a year ago do members from my team work together with colleagues from other divisions.
9. More often than a year ago members from my team work together with colleagues from other departments.
10. More often than a year ago members from my team work together with colleagues from the districts.
11. More often than a year ago members from my team work together with partners from outside the municipal organisation.
12. In comparison with a year ago the quality of products and services from my team is higher.
13. In comparison with a year ago the partners we work with are more satisfied with my team. (like districts, other departments, subsidized organisations).
14. In comparison with a year ago the productivity of my team is higher.
15. In comparison with a year ago the efficiency of my team is higher.
16. In comparison with a year ago my team is quicker in supplying products and services.

## Appendix 4 Questionnaire for leaders

## Appendix 5 Questionnaire for employees