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Organizational change within a maintenance department
antecedents and outcome characteristics of willingness to change

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Organizational change within a maintenance department: Antecedents and outcome characteristics of willingness to change

Master Thesis

Youri Meijer

Supervisors:
S. Rispens
P.M Le Blanc
J. Steijvers

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"When we are no longer able to change a situation, we are challenged to change ourselves"

— VICTOR FRANKL

Abstract

Understanding employees reactions to a planned organizational change is an important concern for many organizations. Rapid environmental and technological changes highlight the need for organizations to continually engage in adaptation processes and organizational changes. This study addresses this problem by examining the antecedents and outcome characteristic(s) of willingness to change and by giving recommendations in order to increase the willingness to change and succesfullness of the organizational change. Data was gathered by means of an online questionnaire distributed among 115 mechanics of "onderhoudsbedrijf Maastricht, a subsidiary of NedTrain. The results of the stepwise hierarchical regression showed that self-efficacy and perceived need for change were positively related to adaptability. In addition, adaptability was positively related to willingness to change. Willingness to change did not seem to have an effect on the outcome characteristic productivity. Finally transformational leadership did not moderate the relationship between self-efficacy and adaptability, as well as trust in supervisor did not moderate the relationship between adaptability and willingness to change. In the end, both theoretical and practical implications are given in which contributions to the existing literature are being discussed as well as recommendations for "onderhoudsbedrijf Maastricht" are given in order to increase the sucessfullness of organizational changes they face.

Preface

Before you lies the master thesis: "Organizational change within a maintenance department: Antecedents and outcome characteristics of willingness to change. When I started my Bachelor program Industrial Engineering in 2012, I never would have thought that I would be writing my final document as a student at this very moment. Although the time flew the last five years, I can definitely say that I have learned a lot, but also grew as a person. I am very proud of delivering this master thesis and all the more on graduating from both my Bachelor- and Master's program without any delay. However, I wouldn't have succeeded without the help of the people around me.

I would like to thank both my supervisors from the University of Technology Eindhoven, dr. S. Rispens and dr. PM le Blanc. First of all, Sonja Rispens who guided my through the first phases of the Master thesis, gave me valuable insights and kept me supporting even when I thought I was lost. Thank you for the fun meetings in which you always gave me constructive feedback that really improved my thesis. Another thanks goes out to Pascale le Blanc for flawlessly taking over the supervision of my master thesis. Thank you, for being critical but honest and giving me the feedback I needed to improve my thesis. This kept me motivated to finish my thesis.

I would also like to thank Jos Steijvers, who was my supervisor at NedTrain and gave me the opportunity to perform my master thesis at NedTrain. Thank you for always supporting me during the thesis and giving me the necessary input when needed. In addition I would like to thank all my colleagues at OBM for filling in the survey, without you I wouldn't have been able to perform my thesis.

Finally, I would like to thank my parents and especially my girlfriend Lizanne. Thank you for always supporting me, giving me input and providing feedback on my thesis, even when I was not in the mood to smile. Without your help I wouldn't have succeeded.

I hope you enjoy reading my thesis!

Youri Meijer

Sassenheim, September 20, 2017

Management summary

Introduction

NedTrain is confronted with several changes to improve their maintenance processes in terms of increasing efficiency and reducing costs. Hence, the aim of this study was to describe the responses of mechanics to the changes that come with improving the maintenance processes efficiency and decreasing costs. It aimed at uncovering relationships of willingness to change with other employee- and work characteristics. Furthermore, the consequences of willingness to change were assessed, after which recommendations were given that are aimed at improving the the success of the organizational change process.

Method

Data was collected by means of an online questionnaire. The questionnaire was distributed to a total of 115 mechanics, which is the entire population of mechanics within OBM. With 87 submitted questionnaires,the response rate was 75.65%. 86 (98,85%). IBM SPSS Statistics 24 was used to analyze the data and answer the proposed research questions. all the questions were based on validated scales from which only one item was deleted in order to increase the Cronbach's α to satisfy the threshold of .7. Therefore, the following research questions were formulated:

1. "What is the relationship of employee and adaptability with employees willingness to change during an organizational change? And how can this relationship be influenced so that employees willingness to change will be increased, contributing to a successful implementation of new processes and practices?

2. "What are the consequences of willingness to change for employee job performance

Research model

Based on the research questions,a literature review was conduced and hypotheses were proposed which lead up to a research model. This research model ,with an overview of the significant relations that were found, is shown in Figure <u>1</u>
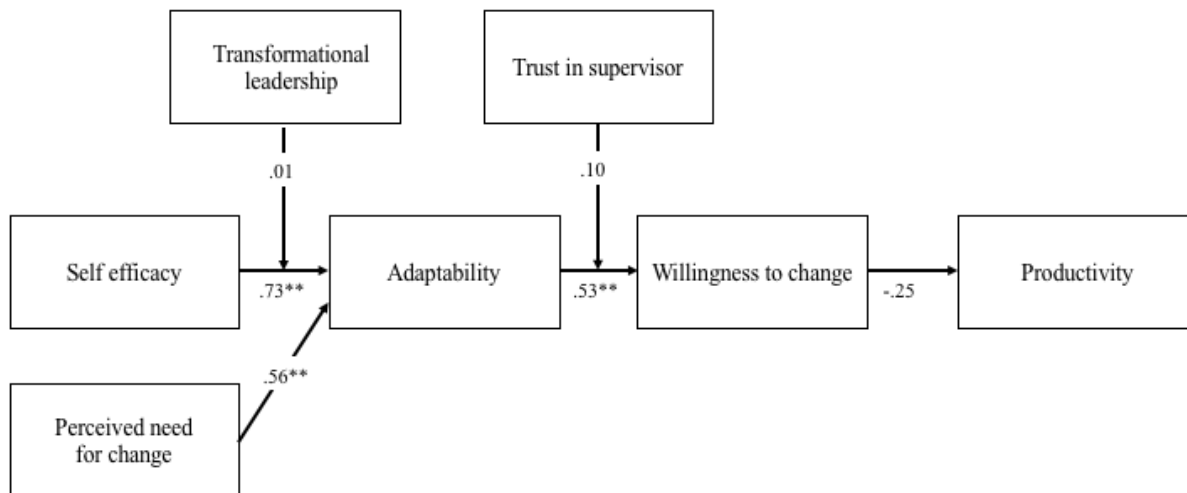
Figure 1: Research Model with found Relationships

Results

Stepwise hierarchical regressions were used to test the proposed relationships between the constructs. In line with the proposed hypotheses, self-efficacy and perceived need for change related positively to adaptability. Employees that were more self-efficacious were also more adaptable, that is: they were better able to fit themselves to new environments or changes in old environments. In addition, employees that perceived the organizational change as needed, will also be more adaptable. When employees perceive a sense of urgency, it is more likely that they will

evaluate the change more positively, since maintaining the status quo is seen as less favorable for their own position or that of their colleagues or the organization. As adaptable individuals take responsibility for adjusting to the situation, employees with a perceived sense of urgency, seem to be more adaptable. Furthermore, results indicated that adaptability was positively related to willingness to change. Highly adaptable individuals seem to perceive more control over workplace uncertainty and feel confident to overcome obstacles, reducing the impact of the negative emotions generated by instability and are thus more willing to change during a organizational change.

Unfortunately, the hypotheses that transformational leadership moderated the relationship between self-efficacy and adaptability and that trust in supervisor moderated the relationship between adaptability and willingness to change, were not supported. Regarding to the outcome characteristic of willingness to change, productivity was not affected by willingness to change and therefore the corresponding hypothesis was also rejected. However, additional analysis seemed to indicate that trust in supervisor is related to productivity, based on which which still recommendations can be made.

Recommendations

An overview of the recommendations is given by using the "CIMO" logic. The CIMO logic can be defined as follows: in this class of problematic Contexts, use this Intervention(s) type to invoke these generative Mechanism(s), to deliver these Outcome(s).

Design Principle 1 - Regular team meetings

For maintenance company such as OBM, in which employees' efficacy is positively related to an employees' adaptability (C), regular team meetings can be used (I) in which task- and situational difficulties will be discussed and performance will be reflected on (M) to increase an employees' self-efficacy.

Design Principle 2 - Team presentations

For maintenance company such as OBM, in which employees' perceived need for change is positively related to an employees' adaptability (C), team presentations before every significant change (I) can be used to educate employees and to obtain insight into underlying feelings and thoughts of employees concerning the change (M) which in turn can be used to increase the employees'

perceived need for change (O).

Design Principle 3 - Team presentations

For maintenance company such as OBM, in which trust in supervisor is related to productivity (C), team presentations can be used (I) to let employees actively participate in the change and to give the adequate information regarding work-related changes and training opportunities (M) which is aimed at increasing the trust between mechanics and supervisor (O)

Design Principle 4 - Including adaptive requirements in hiring policy

For maintenance company such as OBM, in which employees' adaptability is positively related to willingness to change (C), OBM should incorporate and emphasize adaptive requirements in employment announcements and vacancies (I) in order to increase the number of hired employees with a high level of adaptability (M) which eventually will lead to a higher level of adaptability y within the working force (o).

Design Principle 5 - Implementing a job application procedure in regards to promotion

For maintenance company such as OBM, in which managers play an important role within the organizational change (C), OBM should implement a job application procedure in regards to promoting a mechanic to manager (I) in order to decrease the chance of appointing managers that are not suitable for the job which (M) eventually will lead to better performing managers (O).

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Chapter 1

Introduction

Since 1986, the kilometres travelled by train passengers have more than doubled in the Netherlands. No other mode of transport has had such an increase in passengers. For instance, the kilometres travelled per car only increased with half the speed in the same time-frame. The passenger train has made its mark in the recent years and its is expected that the amount of passengers will continue to grow. Every day 1 million trips are made by train, the average distance of the travel by train is slightly below the European average (Ministry of Transport, Public Works and Water Management, 2010). All Dutch public transport is organized in the form of area- or line-based concessions, which are awarded by governmental authorities. The government retains responsibility for the infrastructure. The maintenance of all trains are placed with NedTrain, a public enterprise. The market in which NedTrain operates has changed and is still changing.

Firstly, these changes are necessary since performed maintenance has to be registered and should be demonstrable to the the mother company, the Dutch Railways. If maintenance is not registered, NedTrain will not receive their budget. Unlike in the past, when there was no need for registration of maintenance. Secondly, NedTrain needs to innovate continuously within their maintenance processes in order to keep up with the competition. Lastly, because of this innovative environment, the business processes are dynamic processes, subject to change. To realize such changes successfully, requires the cooperation of employees, since any resistance on their part can hamper the change initiative (Piderit, 2000). Therefore, the maintenance market has become a competitive market, in which maintenance companies must try to optimize their processes in order to deliver high quality maintenance while at the same thing reducing costs. Pinjala et al. (2006) state that quality competitors have more pro-active maintenance policies, and better planning and control systems compared to others. Superior product quality can only be maintained with effective and

efficient equipment.

NedTrain is an organization that is continuously working and improving on its processes to stay ahead of their competitors. Initially the focus of NedTrain was on train maintenance, now also other aspects have gained more importance. The focus shifted from purely maintenance to improving the transparency and efficiency of business processes that are inextricably linked with maintenance processes. Hence, employees of NedTrain are being confronted with these changes within a variety of processes.

According to Oreg, Vakola and Armenakis (2011), these reactions of individuals to organizational change play an important role in understanding the change process and determine the potential success of the change. In addition, Strebel (1996) states that a lot of organizational changes fail to reach their intended goals, because employees' perspective on the change is not carefully taken into account. Thus, in order to successfully implement new processes inside an organization, it is important that employees are motivated and willing to adapt their behaviour to the proposed changes.

Although, willingness to change has been researched extensively the past decades, our current understanding about the relationship between adaptability and willingness to change is limited while more and more employees are confronted with with a changing work environment due to organizational change. This study not only considers direct relationships between variables but also incorporates 2 moderator variables. By including these variables, this study aims to gain more knowledge on the role of personality during the change process and its relative importance in enhancing employees adaptability, which in turn could yield specific insights on how employees willingness to change can be enhanced.

1.1 Report structure

After this introductory chapter, the problem context is described in Chapter **2**. This chapter ends with formulating a relevant research question. Chapter **3** outlines the theoretical background that leads to a research model in which several hypotheses are included that were tested during this thesis project in order to answer the research question. The methodology, consisting of the procedure, measures and strategy of data analysis, is described in Chapter **4**, after which the

results are presented in Chapter **5**. These results are discussed in Chapter **6**, in which theoretical contributions and practical implications are formulated. This chapter ends with study limitations and suggestions for future research, after which the thesis' main conclusion is presented.

Chapter 2

Problem Statement

2.1   Problem Context

This research was performed at Onderhoudsbedrijf Maastricht (OBM), a department of NedTrain. NedTrain is a maintenance company, which delivers the full spectrum of maintenance for its mother company, the Dutch railways. NedTrain has 37 different locations spread across the Netherlands, these locations are indicated in figure **2.1**.

Figure 2.1: Locations Nedtrain

NedTrain emerged after the division of the Dutch Railways, when the department Materieel Werkplaatsen, within the NS-group, became an independent division called NS Materieel. In 1999 this name was changed to NedTrain. NedTrain has approximately 3500 employees spread across the aforementioned locations. Within NedTrain there are 4 departments that solely focus on the maintenance and repair of the trains, these are called Onderhoudsbedrijven. Among these 4 departments, the location of OBM is indicated with the green circle in figure **2.1**. The remaining yellow circles display the other 3 departments. OBM employs circa 250 employees, from which 200 employees are mechanics. The remaining 50 employees are housed in several office buildings with the main task to support and guide the processes in which the mechanics are involved. OBM defines itself as a maintenance company, in which all departments work together on maintaining trains owned by the dutch railways, also known as NS (Nederlands Spoorwegen). Todays maintenance companies are operating in an increasingly complex environment that is characterized by rapid technological change. In order to stay ahead of competitors, by becoming a modern and future-proof organization, they are continuously adopting and implementing new processes and practices. This makes the organization an interesting context for conducting research.

In the next sections the problem context is discussed more in depth. First, the current situation of the change process is described, which reveals the main challenge(s) OBM is facing. After which, based on this problem and the identified gaps in scientific literature,the main research question is formulated in section **2.3**.

2.2 Current situation(As is)

As stated in the previous section, employees of OBM are being confronted with changes in their work. At this moment, OBM has the primary goal to improve the efficiency of the maintenance processes and reduce the cost for their stakeholders, whilst keeping the quality high. In practice, this means there will be several changes in procedures currently used by the operational management as well as the mechanics.

In order to maintain the new trains, employees have to be educated through new training. for example, MOOD is introduced for all maintenance operations, as of 2014. Mood (Modulair Onderhoud) is a maintenance policy which looks at the exact content of every maintenance session to ensure that the train can leave maintenance depot on time. This resulted in so-called clusters,

where a cluster consists of one or several smartly combined tasks (simultaneously instead of successive). For example, tasks which need to be executed at the same place in the train are now within one cluster and thus in one maintenance sessions instead of distributed over several maintenance sessions.. The clustering of job descriptions in a smart way resulted in large time savings and significant efficiency improvements. However, this also required employees to adapt to changing work processes, which are still ongoing.

In addition, the budget OBM yearly receives, depends on the trains travelled kilometres and the amount of trains that have to be maintained. Based on this input, the amount of maintenance operations is determined. To maximize the efficiency of the maintenance processes, they have to be improved and thus are continuously subject to changes. The maintenance that is performed needs to be strictly monitored, since OBM only receives budget for the monitored maintenance. Hence, OBM introduced a new system in which mechanics have to keep track of performed maintenance and record it on their personal iPad. The data retrieved from the iPad is used to calculate the budget that OBM is entitled to. However, the results to date are not satisfactory, since mechanics are not monitoring all their maintenance which the end results in a shortage of budget.

The first meeting with the business controller of the NS-Group, revealed some potential problems regarding the involvement of employees in these changing processes.

First of all, the aging of the working population is a serious problem among the employees of OBM. The average age of the employees in OBM is well above the 55 years, which is significantly higher than all the other NedTrain locations. Morris and Venkatesh (2000) demonstrated that for technology adoption decisions, age, in fact, matters. Compared to older workers, younger workers technology usage decisions were more strongly influenced by their attitude towards using the technology. Given increases in the expected working life of individuals, this finding has important implications for the process by which technology is developed, introduced and managed within organizations.

Secondly, recruiting new employees for the job proves to be harder than initially thought. This especially applies to OBM, since the recruitment for all available jobs takes place in Utrecht. Employees that are recruited in Utrecht, are rarely willing to work in Limburg since they prefer to stay and work in or near the Randstad. In addition, OBM is currently expanding its workplace, since the maintenance of the new train of NS, the Flirt, is partly allocated to OBM, as of June 2015. Simultaneously, OBMs workplace is being expanded to increase its capacity for the Flirt.

One of the biggest changes to date, is the necessity to change maintenance processes to maintain this new train. In general, fleet management determines the type of maintenance that is necessary and the type of knowledge and qualifications employees need to have to maintain a certain type of train. Eventually, this is communicated to OBMs trainings coordinator, who is responsible for coordinating all training courses employees need to follow to be allowed to maintain the different types of trains. A first meeting with the business controller and several mechanics, showed the prevalence of concerns among the employees regarding this organizational shift.

Thirdly, employees are expected to change their working behaviour in order to increase their performance. The management of OBM is currently trying to implement the new processes to the best of its abilities. Despite all efforts, most of the mechanics seem to be struggling with the new style of working and are not convinced that this will improve their performance. The willingness to change among mechanics seems to be too low to successfully implement the new way of working. Willingness to change often accelerates a change process in terms of duration and the involvement of employees within the organization. Employees reactions to change are considered critical for the success of change efforts (Armenakis, Harris, Mossholder, 1993; Piderit, 2000).

In the fourth place, team managers are often appointed by choosing a mechanic that performed well and will fit the job according the management. The management chooses to abstain from a job application procedure, which might result in appointing team managers that are not suitable for this job. This is particularly detrimental for the current situation at NedTrain, as managers have an important role in supporting and helping employees when undergoing a change process. Firstly, high levels of performance are less likely in organizations characterized by weak forms of mutual trust between manager and employee. Moreover, mutual trust may be essential for organizational survival and growth, especially in an organizational change (Barney & Hansen (1994). Secondly, managers can successfully change the status quo in their organizations by displaying the appropriate behaviors at the appropriate stage in the change process thus promoting a culture that encourages team-decision making and behavioral control Manz & Sims, 1991). Furthermore, it is important to note that individuals might react differently on organizational change. That is, some employees might be able to adapt better to new environments or to changes in old environments. In extension of this view, Ployhart and Bliese (2006) coined the term adaptability as an individuals' ability, skill, disposition, willingness, and/or motivation, to change or fit different tasks, social and environmental features.

Finally, the management of OBM is concerned about the degree to which mechanics perceive this organizational change as needed. Since 2012, OBM has lost a lot of money only because mechanics did not track and record their maintenance. However, this could also be the case because they feel that they havent got the requisite knowledge or a certain level of skills needed to operate the new" system. In turn, this could increase their resistance to change and discourage them to actively participate in the change process.

2.3   Envisioned situation (To be)

From the description of the current situation, it is clear that employees find themselves in a long and complex change process. In this change process, individual employees might experience the organizational change in a different way and in doing so they might also differ in their attitudes towards change. As already mentioned, reactions of individuals to organizational change play an important role in the successful implementation of an organizational change. For this reason, the management of OBM needs to take into account differences in personal expectations, experiences and needs in order to enhance employees willingness to change during this change process. The main problem is to implement this organizational change in way that helps employees developing positive attitudes towards the change, such that they are motivated, positive and willing to go through this change process.

To support the change process, OBM is introducing a new meeting structure in which meetings will take place on three different levels, namely: strategical, tactical and operational. At this moment the meeting structure of OBM consists of one management meeting every 3 weeks in which strategical, tactical and operational level employees are involved to discuss key points that need to be improved and in which goals are set in order to improve key performance indicators (KPIs) that are below the defined thresholds. However, a lack of structure and guidelines often makes these meetings unorganized and inefficient, which in turn results in time-consuming meetings with outcomes that are not desirable and are not relevant for reaching and attaining stated goals (e.q. key performance indicators).

On strategical level, the top management will review the performance on KPIs in a 2-weekly meeting. This meeting will mainly focus on KPIs on team level that did not meet the performance targets. Furthermore, a forecast will be made for the discussed KPIs which will be used in the

tactical-level meeting. On a tactical level, middle management will discuss the outcomes and forecasts of the strategical meeting, after which tasks and goals will be set for the operational employees to improve KPIs that are below stated performance criteria. Finally, in the operational level meeting, team managers will be informed about their team level performance and the opportunity will be given to reflect on their teams performance, since not only deviating from the planning will result in missing specified performance targets but also other events can play a major role (e.q. high sickness leave, unplanned maintenance).

The outcomes of this reflection will be communicated back to the top management once more, so that this information can be used in the next meeting. Finally, the operational employees will act on the obtained information in order to increase the performance on the KPIs that are below stated performance criteria, after which the cycle repeats itself. Thus, in this new meeting structure, information will go in a iterative flow between the 3 different levels: from strategical through tactical to operational, from which it will go to the strategical level again. In this manner, OBM is aiming for more efficient and structured meetings in which useful information is obtained and communicated to the right channels in order to increase the performance on the KPIs in a faster and more reliable way and thus, in the end, also should benefit the performance of the company as a whole. In this context, the main challenge that the management is is aiming at facilitating the change processes and tries helping employees in developing positive attitudes towards change, such that they will be motivated and willing to go through the change processes in order to keep satisfying the increasing demands of their customer, the Dutch Railways. In short, OBMs management wants an answer to the following question: How could OBMs management team positively affect employees willingness to change, during a organizational change, in order to increase the succesfulness of organizational change.

2.4 Problem overview

Summarizing the previous information, OBM is confronted with several changes to improve their maintenance processes in terms of increasing efficiency and reducing costs. Changing maintenance processes will particularly affect the operational employees, since they are expected to adapt to these changes without any sacrifices in their job performance. Organizational change towards more efficient and improved processes will have an impact on the work environment, and therefore

affect the daily tasks of employees. In other words, this organizational shift demands employees to work in a different way, which may evoke different reactions among them. A theme that is identified in the preceding paragraphs and can have an impact on the successful implementation of new processes is employees willingness to change. OBMs management believes that enhancing the willingness to change will lead to a faster and more successful implementation of the new maintenance processes and thus can prevent the the organizational change from failing. However besides willingness to change, other variables might influence the success of an organizational change process too.

Hence, this study aims at describing the responses of mechanics to the changes that come with improving the maintenance processes efficiency and decreasing their costs. It aims at uncovering relationships of willingness to change with other employee- and work characteristics. The results will be related to existing scientific knowledge, and suggestions for improvement of employees willingness and thus the change process will be given.

2.5   Research question

Based on the problem context and the gaps in current literature the following research question is formulated:

What is the relationship of employee characteristics and adaptability with employees willingness to change during an organizational change? And how can this relationship be influenced so that employees willingness to change will be increased, contributing to a successful implementation of new processes and practices?

As mentioned in the in the problem statement, the main concepts included in this study are willingness to change, adaptability, self-efficacy, perceived need for change, trust in supervisors and leadership style . The aim of this study is to explore the the processes relating these constructs. To answer the above research question, a research model is drawn up based on the outcomes of the literature review. This research model is based on several hypotheses that will be tested in order to see if they are confirmed by the data.

Furthermore, it is important to consider the outcomes of willingness to change. Therefore, the second goal of this thesis is to indicate how employees willingness to change affects their job

outcomes in terms of performance. This is measured in terms of the key performance indicators (KPI's) drawn up by OBM. Therefore an additional research question is formulated:

What are the consequences of willingness to change for employee job performance (KPIs)?

This study should provide information on the antecedents and the consequences of willingness to change. Based on the results, answers to the question how to increase willingness to change can be provided to ensure a successful organizational change. The next paragraph will explain the theoretical background of this study, after which the research model and related hypotheses are presented. Based on the outcomes of the hypotheses testing, theoretical and practical implications will be formulated aimed at enhancing successful organizational change.

Chapter 3

Theoretical Background

Technological revolutions are the order of the day, and they put innovation and renewal high on the business agenda. Research by the Economist Intelligence Unit (2012) showed that European businesses do not cope with technological alterations as well as they think they do. Understanding employees reactions to a planned organizational change is an important concern for many organizations. Van der Ven (2011) et al. refers to organizational change as the efforts that change agents, mainly managers, exert in order to bring employees to new behaviours that benefit the organization. These changes often invoke fear and uncertainty among employees, which can result in resistance. In particular, resistance manifested through employee dysfunctional attitudes and behaviors can be devastating to effective organizational change (Stanley et al., 2005). Understanding employees reactions to a planned organizational change is an important concern for many organizations. Rapid environmental and technological changes highlight the need for organizations to continually engage in adaptation processes and organizational changes. To realise intended changes, organizations must rely on the cooperation of their employees (Porras & Robertson, 1992).

Resistance to change can severely hamper the change process and has been associated with negative outcomes such as decreased satisfaction, productivity, and psychological well-being, and increased theft, absenteeism, and turnover (Bordia et al. 2004). The majority of the studies link employees reactions to change to characteristics of the change process, such as the extent to which employee participation is enabled (Wanberg & Banas, 2000). Less attention has been given to the daily work context in which changes take place and the skills and knowledge an employee has. However the daily context may be crucial for the success of change efforts because this is ultimately where the implementation of the change takes place. Characteristics, such as leadership style, organizational

climate and employee knowledge and skills, such as adaptability and self-efficacy are likely to affect how change is implemented, and thus how employees cope with the change. Considering the importance of resistance/willingness to change, this review aims to delve deeper in this field through drawing up an theoretical framework.

3.1 Review Method

The research method that is used for searching literature for this review is based upon a systematic review methodology proposed by Galster et al. (2014). This systematic literature review method is a well-defined approach to identify, evaluate and interpret all relevant studies regarding a particular research question, topic area or phenomenon of interest.

3.1.1 Protocol development

An important step is the development of a review protocol to ensure rigor and repeatability. Therefore, the defined protocol specifies the research question. After formulating the research question, a manual search was used as search strategy to define a search scope. After that, inclusion and exclusion criteria was developed and defined the search process. Next, based on the research question, specific data elements were subtracted from each relevant study found in the search.

3.1.2 Search strategy

To enhance the initial search strategy and reduce the effort, different keywords were used to find literature on electronic data sources.

The following electronic databases were used for searching the literature:

Google Scholar	*https://scholar.google.nl/*
FOCUS	*https://www.focus.tue.nl/*
Elsevier Science Direct	*https://sciencedirect.com/*
Web of Science	*https://webofknowledge.com*

In the pilot search, the following keywords were used: (willingness to change OR resistance to change) AND Adaptability OR self-efficacy. Through snowballing, other keywords were found

that seemed to have a potential relationship with willingness- or resistance to change, these were: transformational leadership and trust in management/supervisor.

The search strategy identified around 500 studies, of which 20 were used as primary studies for this literature review. The relevance of the papers is determined by reading the title, keywords, and abstract. However, through following up on references found in these primary studies(snowballing) 72 studies were eventually found to be relevant for this review. Any duplicates from the first and second stage were removed and the results were merged at stage 2. Finally, full copies of the remaining studies were obtained (i.e. the studies left after filtering at each stage).

3.1.3 Data extraction

During this final stage, the 72 studies were read in detail and data was extracted. Recurring themes were being identified and the data from the studies were examined to develop a research model. These findings are outlined in the following sections.

3.2 Literature Review

3.2.1 Willingness to change

In the majority of work on resistance to change, researchers have borrowed a view from physics to metaphorically define resistance as a restraining force moving in the direction of maintaining the status quo (Lewin, 1952). Resistance often decelerates a change process in terms of duration and decreases the involvement of employees within the organization. Employees reactions to change are considered critical for the success of change efforts (Piderit, 2000). As Watson (1982) points out, managers often perceive resistance negatively, since they see employees who resist as disobedient. Even if they only see employees who oppose change as short sighted, managers are tempted to treat their subordinates as obstacles. In addition to that, Lawrence (2000) warns managers to avoid creating resistance in subordinates by assuming that they will always be against change. However, different authors also remind us of a wider range of reasons why employees may be against a proposed organizational change (Lawrence, 2000).

According to Metselaar et al. (2011), introducing changes based on the perspective of resistance

comes down to putting pressure on unwilling employees to accelerate the change. The gap between people, in favour of and against an organisational change increases by emphasizing the negative aspects of the change. This shows the importance of emphasizing the positive aspects. Therefore, Metselaar et al. (2011) explain the positive view of an organizational change with the concept willingness to change.. They define willingness to change as the employees positive behavioural intention towards the implementation of a change in the structure, culture, or working methods of an organisation or department, resulting in an effort from this employee to actively or passively support the change process involved. In addition, Oreg (2006) found that organizational change may affect worker well-being through affective, behavioural, and cognitive responses to anticipated outcomes..Willingness to change is a key factor in the successful implementation of organizational change. As opposed to willingness to change, resistance to change lies on the negative side of the continuum. Lewin (1958) defined resistance as the employees development of counter powers against changes. However, whatever appears to be resistance does not always have to be an opposite force of willingness, but may also originate from different ideas as to how the new organization should take shape. In addition, Hultman (2006) states that willingness to change is not the opposite of resistance, since an absence of resistance doesnt necessarily mean that someone is receptive to change.

Kotter and Schlesinger (2008) state that a key reason why people are less willing to change is that they think they will lose something of value. Whenever a certain change is introduced in an organization, resistance against this change also emerges. In addition to the latter, Garvin and Roberto (2005) mention that employees need to feel that their sacrifices have not been useless and that their accomplishments have been recognized and rewarded. According to Devos et al. (2007), the scale of the consequences of change play a role in willingness to change: they assume that when a change has major consequences for employees and is experienced as being threatening, this will lead to less willingness to change.

3.3 Antecedents of Willingness to Change

Various publications show that there is a great deal more to investigate. For instance, Milgram (1965) and Modigliani and Rochat (1995) indicate that a lower willingness to change might be motivated by individuals desires to act in accordance with their ethical principles. In addition to

that, Graham, (1986) found that some employees resistance to organizational actions is motivated by more than only selfishness. Besides that, a study from Ashford et al. (1998) indicated that employees might try to get top management to pay attention to issues that employees believe must be addressed in order for organizations to maintain performance. These authors also indicate that individuals rarely form resistant attitudes, or express such attitudes in act of protest, without considering potential negative consequences for themselves. Hence, what some may perceive as a disrespectful or unfounded opposition might also be motivated by individuals ethical principles or by their desire to protect the organizations best interests. Furthermore, these authors state that it is worth diverting efforts to take those good intentions more seriously by giving less weight to the aspect of labelling responses to change as resistant. So the question, if and why OBMs employees are resistant to change, should not only be addressed from the negative side of the spectrum but also from the positive side. Possibly, employees are trying to get top management to pay attention to issues that they think should be addressed and are not noticed according them.

Next to that, other authors proposed that employees reactions to organizational change are also influenced by how individuals more generally feel about the concept of change. Many of these studies demonstrated relationships between employees personality and their reactions to change. A phenomenon often included in these studies is the concept of adaptability. Fugate et al. (2004) consider openness to job changes as an important aspect of employee adaptability whilst van Dam (2003) found that openness to job changes was a strong predictor of individuals willingness to participate in required job transitions (e.q. organizational change). Notwithstanding the lack of empirical evidence, it seems that adaptability might influences willingness to change.

3.3.1 Adaptability

Adaptability is characterized by being able to fit to new environments or to changes in old environments (Savickas, 1997). In extension of this view, Ployhart and Bliese (2006) define adaptability according their I-adapt theory as an individuals ability, skill, disposition, willingness, and/or motivation, to change or fit different tasks,social, and environmental features.

Pulakos et al. (2000) developed a taxonomy for adaptability. This model has eight dimensions: handling emergencies or crisis situations, handling work stress, solving problems creatively, dealing with uncertain and unpredictable work situations, learning work tasks, technologies and procedures, demonstrating interpersonal adaptability, demonstrating cultural adaptability and demon-

strating physically oriented adaptability. Adaptable employees are prepared (and willing) to adjust and change their behavior so it fits to procedures. Furthermore, employees with higher adaptability are expected to have a better job performance, especially in workplaces constantly undergoing changes (Heslin et al., 2009), since adaptable employees are better at assessing new situations and choosing the right approach, suitable for this new environment (Lovett & Schunn, 1999). This will help them to change their behavior in line with the new goals they need to achieve.

Hesketh and Neal (1999) found that having adaptable employees, has become important largely as a result of the rapid pace of technological advancement and an increasing emphasis on continual learning in organizations. Todays workers are increasingly faced with technical innovation that is forcing them to learn new ways to perform their jobs. According to Ployhart And Bliese (2006), adaptable individuals take responsibility for adjusting to the situation. In the case of using new technology, this would include learning the skills necessary to operate the new equipment efficiently. Second, Ployhart and Bliese (2006) proposed that individual adaptability is a relatively stable individual difference that influences how employees interpret and respond to a situation. The study of Wessel et al. (2008) provides further support for the proposal that individual differences in adaptability influence individuals appraisals of situations, they found that although adaptable students were not more likely to fit with their college major; adaptable students perceived higher levels of fit with their major than less adaptable students. Further, Wang et al. (2011) demonstrated that employees assessment of their compatibility with their organization mediated the relationship between individual adaptability and workplace outcomes.

Finally, if we look at the job stress literature, it is commonly held that stress is negatively related to performance (Sanders, 1983). Adaptable individuals are more likely to perceive situations in a positive light (e.g., as challenging rather than stressful) and are more sensitive to environmental cues, which increases their ability to notice and appreciate even small supportive actions by their organization (Ployhart and Bliese, 2006). A recent study of Fiori et al. (2015) also found that individuals with strong adaptability resources consider the characteristics of their jobs in a more positive light, by evaluating its career challenges as opportunities, rather than threats, leading to the development of additional skills which increase positive emotions and lead to higher job satisfaction. Similarly, highly adaptable individuals seem to perceive more control over workplace uncertainty and feel confident to overcome obstacles, reducing the impact of the negative emotions generated by instability and experiencing overall lower work stress.

In sum, adaptable individuals will take responsibility for adjusting to the situation including learning new skills or processes to keep operating efficiently within a changing environment. Adaptability should be positively related to willingness to change such that employees high in adaptability will be more willing to change than employees who are low in adaptability. Therefore, the following is hypothesized:

Hypothesis 1 : *Adaptability is positively related to willingness to change.*

However the publication of Nansubuga and Munene (2015) shows that there is more to investigate. According to these authors, there is a need for reflection to address challenges caused by the unforeseen changes within the work environment. The reflection approach involves continuous assessment and identification of underlying assumptions of ones past behavior to determine action that led to success in a complex work situation (Marsick & Watkins,2001). Reflection helps individuals to learn new approaches of deciding actions suitable for their jobs regardless of work challenges. Their study demonstrated that adaptability can systematically be elicited by reflection and has proved that reflection is a useful and necessary approach that enables managers but also employees to adapt to dynamic work environments.

Runhaar et al. (2010) did research among secondary school teachers and found a positive relationship between transformational leadership and reflection. Their study showed that transformational leaders can stimulate people to reflect on their practice and ask each other for feedback in order to examine their assumptions. Reflection can be regarded as risky, because one can be confronted with information that can impair his or her self-image. However, on this point a transformational leader can provide an external support to encourage people to engage in such risky behaviours. Since they found a positive relationship between transformational leadership and reflection, and adaptability can be elicited by reflection, there also seems to be a relationship between adaptability and transformational leadership. Hence, transformational leadership will be discussed more extensively in the section **3.5.2**.

3.4 Antecedents of Adaptability

As mentioned in section **3.3.1**, being adaptable has become important largely as result of the rapid pace of technological advancement and an increasing emphasis on continuous learning in

organizations. However, not only adaptability is important for rapid environmental change, but also ones self efficacy. This is defined as individuals beliefs about their capabilities to produce designated levels of performance (Bandura, 1994). Self-efficacy is an important component of self-regulation, in that it is one of the main determinants of effort allocation intentions (Bandura, 1997) . Self-regulation refers to processes, that enable an individual to guide his/her goal-directed activities over time and across changing circumstances, (Karoly, 1993, p. 25). Therefore, self-efficacy also seems to influence adaptability. However, there is a lack of research available that focuses on the direct relationship between self efficacy and adaptability.

3.4.1 Self-efficacy

Organizational change can be successfully implemented when the employees are sure that they have requisite knowledge and degree of skills required to make the efforts successful. However, if they do not have the required competencies then they might resist such interventions and will not be encouraged to have active participation in the change process (Madsen, 2005). The more an employee is confident on his knowledge and skills, the greater are the chances that the change can be handled more effectively. If the employees do not support the new interventions, it will create anxiety amongst the individuals which ultimately affect their productivity level. Self-efficacy is not only related with having sufficient knowledge and skills about the job; it is also concerned to an extent of which the employee is proficient in handling the situations in a changing environment. Employees with low self efficacy will be likely to have a lower willingness to change because they are not confident in their own abilities to manage the change. In addition, employees with high self efficacy tend to have the perception that rewards are depending on individual behavior, while employees with low self efficacy tend to have the feeling that rewards are controlled by outside factors. Furthermore, Individuals with low self-efficacy tend to regard challenging tasks as threatening and are more likely to reduce their efforts and give up quickly (Carter, 2008). Hence, employees with high self efficacy, are likely to adapt their behavior more easily in order to make their efforts more successful by exerting efforts to overcome the difficulties that come with organizational change.

In sum, self-efficacy, above studies seem to reveal a positive relation between self-efficacy and employees adjustment to the organization and to organizational change, which also can be referred to as adaptability. Furthermore, adaptable employees are prepared and willing to adjust their

behavior to change or fit different tasks, social, and environmental features. This in line with people that have high self-efficacy, since they are less likely to regard challenging tasks as threatening and more likely to treat these situations as opportunities.

Hence, Self-efficacy should be positively related to adaptability such that employees high in self-efficacy will be more adaptable. Therefore, the following is hypothesized:

Hypothesis 2a: : *self-efficacy is positively related to adaptability*

3.4.2 Perceived need for change

The second variable that is expected to influence adaptability is the employees perceived need for change. The employees perception of the necessity of an organizational change has been conceptualized in various ways. However, the most complete definition is stated by Armenakis et al. (1993). They labeled it as the belief that a change is needed, i.e. as the perceived discrepancy between a present state and a desired end-state. They noted that communication concerning the change is the primary mechanism for creating willingness to change. But even if top management feels a sense of urgency about initiating an organizational change, this does not necessarily mean that individual employees are aware of, understand, and/or agree with this sense of urgency.

It is often hard for managers to get reasons for organizational change across to employees, because reasons to motivate complex organizational change are not always accepted, understood, or received in the way managers intend, even if the organizational change is for the benefit of employees (Rousseau & Tijoriwala, 1999). In addition to that, it is interesting to note that well performing organizations are particularly challenged to keep up with a changing environment, because successful organizations are often characterized by inertia (Miller, 1993). An explanation for this inertia is that successful organizations discard practices, people, and structures regarded as peripheral to success and grow more inattentive to signals that suggest the need for change (Weick Quinn, 1999, p. 369). When employees perceive a sense of urgency, it is more likely that they will evaluate the change more positively, since maintaining the status quo is seen as less favorable for their own position or that of their colleagues or the organization. As adaptable individuals take responsibility for adjusting to the situation, employees with a perceived sense of urgency, seem to be more adaptable. If maintaining status quo is seen as less favorable, adaptable employees seem to be more prepared and willing to adjust and change their behavior to fit to the new

procedures. In addition, Jimmieson et al. (2004) found that change information was positively related to adjustment in terms of well-being, job satisfaction, and client engagement. Timely and detailed information seems a critical element of change effort and increases the perceived need for change. Ashford (1988) found that this is due to the anxiety and uncertainty reducing effect that information about the organizational change has on employees.

Therefore, communication in regards to the need for change (change information), which results in a higher perceived need for change, is expected to facilitate adaptive behavior such that employees high in perceived need for change will be more adaptable. Therefore, the following is hypothesized:

Hypothesis 2b: : *Perceived need for change is positevely related to adaptability*

3.5   Moderators

3.5.1   Trust in Supervisors

Trust has become increasingly recognized as a central mechanism in the coordination of expectations, interactions, and behaviors. Without trust, it is difficult for the organization to have a cohesive culture, and it is less likely that its members engage in cooperation and information sharing (Peterson et al., 2009). Critical situations, such as major organizational changes, are particularly important for the development of trusting relationships between employees and organizational authorities. It is not only the outcome of change that influences these relationships, but also the authorities intentions when promoting change. Trust develops through time as a result of the interactions and social exchanges between the parties involved. The relational history between the truster and the trustee is a central element in the creation of trust, and the increase of the interaction frequency between two parties may promote an enhancement of trust (McAllister,1995). The consistency of trust in a given relationship is temporary and especially because of situations such as major change initiatives, which can create tension and feelings of imbalance.

Fox (1974) stresses that trust between management and employees finds equilibrium based on reciprocity in the exchange between the two parties. If the reciprocity is weakened, the mutual trust will be challenged. Consequently, when change initiatives create uncertainty and make employees vulnerable, change becomes a challenge to the trust equilibrium (Morgan Zeffane, 2003).

Supervisors are particularly important for employees knowledge of the organizational change goals, mainly for two reasons. Firstly, they are important for a smooth implementation and general acceptance of the change initiative, because they are in close contact with employees. Simultaneously, employees also perceive supervisors as representatives of the organization (Eisenberger et al. 2002). Secondly, because supervisors represent the organization, trusting relationships between them and employees are of vital importance for the organization. Trust in the supervisor has consistently been treated as an indicator of the quality of the social exchange relationship (Camerman, Cropanzano & Vandenberghe, 2007).

Trust helps to reduce the uncertainty surrounding a managers behavior, making it more likely that employees will cooperate with their managers decisions (Tyler & Degoey, 1996). When employees trust their manager, they confidently accept what their manager will do, and are less likely to take steps to protect themselves from uncertain leader behavior (Dirks & Ferrin, 2001). Trust makes it more likely that employees will accept and cooperate with authority, something which is of great importance during organizational change. In addition, employees will have greater confidence in their leader when they trust him or her, they believe that what he or she is saying is true and that his or her modeling of values is genuine. Thus, there are few doubts about whether the values a leader transmits are genuine and the degree to which these values are the correct values worthy of acceptance. Because these leaders are trusted, employees are more willing to accept their values. Accepting a leaders value messages, is a way the elicit employee contributions that otherwise would not be forthcoming. The more an employee trusts its supervisor, the more they feel confident to overcome job obstacles inherent to organizational change.

We suggest that when employees have high trust in supervisors, the effectiveness of adaptability on enhancing employees willingness to change will be increased. Employees are more willing to change when they their trust in supervisor is high, since they are more confident that they are being able to adapt to this new environment by accepting the managers value in regards to the organizational change. Trust in supervisors increases the employees acceptance of the change initiative, which in turn motivates them to change their behavior in such a way that it is in line with the organizational goals. Besides, if the trust in supervisors is low, and in turn the acceptance for the change is low, employees might show adaptable behavior but only because they were told to change. However, their willingness to change will probably still be low since they dont support the change. Therefore, the following is hypothesized:

Hypothesis 3 : *Trust in supervisors moderates the relationship between adaptability and willingness to change such that the the positive relationship between adaptability and willingness to change is stronger when trust in supervisors is high compared to when trust in supervisors is low*

3.5.2 Leadership style: Transformational Leadership

One of the defining challenges for leaders is to take their organizations into the future by implementing planned organizational changes that are intended to modify organizational functioning toward more favorable outcomes (Lippit et al. 1958). The study of Battilana et al. (2010) shows the importance of the role of different leadership competencies in different activities involved in planning a organizational change. Devos et al.(2002) stress that successful major changes need a powerful guiding coalition. This powerful coalition goes beyond the support of top management. Organizational transformation often implies a change in tasks of managers, their personal leadership style and their social relations with subordinates. Managers have an important role in supporting and helping employees when undergoing a change process. According to Devos et al. (2002), employees willingness to change partly stems from their manager. Given the change literatures emphasis on the importance of the leader in enacting change, the next paragraphs will discuss a leadership theory that is tied to change: transformational leadership.

To mitigate the tensions and facilitate effective performance, managers must exhibit appropriate leadership behaviors (Bass Riggio, 2006; Burke et al., 2007). Among various leadership perspectives, transformational leadership is often linked with managerial effectiveness during organizational change (Bass Riggio, 2006). Transformational leadership can be explained according the transactional-transformational leadership paradigm (Bass, 1997). According the transactional-transformational paradigm, transactional leadership develops from the exchange process between leaders and subordinates wherein the leader provides rewards in exchange for subordinates performance. On the contrary, transformational leadership behaviors go beyond transactional leadership by motivating followers to identify with the leaders vision and sacrifice their self-interest for that of the group or the organization (Bass, 1985).

Transformational, charismatic, and visionary leaders can successfully change the status quo in their organizations by displaying the appropriate behaviors at the appropriate stage in the transformation process. A transformational leader could be a good facilitator of this process by promoting the creation of a culture that encourages team-decision making and behavioral control (Manz Sims,

1991). As managers strive to operationalize change, employees react to change in both intended and unintended ways. For example, managers might have varying ideas on how to accomplish change that could be equally instrumental for invoking supportive change reactions. If employees misinterpret managers ideas for implementing change (Sonenshein, 2010), they might experience uncertainty about particular behaviors needed to achieve desired change objectives. These experiences can emotionally charge change contexts (Fugate et al. 2008) and reduce employees confidence in effectively adjusting to change. Under these conditions, transformational leaders must convince employees that they can depend on them for guidance and support. According to Liu and Batt (2010), relational ties with employees should grow as transformational leaders devote more time to coaching and guidance. As such, employees who are involved in high-quality relationships with their managers should perform at higher levels and go the extra mile to help their managers and peers (Cropanzano Mitchell, 2005).

A leader must work at getting large numbers of people in the organization involved in the transformation process. Otherwise, it is likely employees will resist the change, which most definitely will result in failure. Brown and Eisenhardt (1997) indicates that a successful leader creates a culture which embraces change. According to Lowe et al. (1996), charisma is a component of transformational leadership. In addition, Nohe et al (2013) found that followers who perceive leaders as charismatic will feel more committed to proposed changes. Perceiving a leader as charismatic implies that followers have linked their beliefs to the mission expressed by the leader. Thereby, efforts and goals that are part of the leaders mission increase in meaning and intrinsic motivational behaviour (Bono Judge, 2003). As a result, followers are more likely to identify with the change goals, thereby increasing their motivation and willingness to support the goal and commit to the change.

In sum, above studies seem to reveal the positive influence transformational leadership has on creating a culture that embraces change. We suggest that transformational leadership increases the effect of self-efficacy on adaptability. Under conditions of organizational change, transformational leadership acts as a change antecedent that facilitates the formation of higher quality relationships between managers and their employees. Through these high quality relationships, managers can motivate employees in such a way that their confidence level on their own knowledge and skills needed for organizational change, increases. In addition to that, employees are also more likely to be better prepared and more willing to adjust their behavior through this mechanism. Therefore the following is hypothesized:

Hypothesis 4 : *Transformational Leadership moderates the positive relationship between self-efficacy and adaptability such that the relationshp between self-efficacy and adaptability is stronger when perceived transformational leadership is high compared to when it is low*

3.5.3 Outcome characteristics willingness to change

After deriving relationships that show how antecedents can influence willingness to change, it is also important to consider the outcome variable(s) of willingness to change. The budget OBM yearly receives depends on the trains' travelled kilometres and the amount of trains that have to maintained. Based on this information the amount of maintenance annually will be determined, after which the total workload per year will be determined by combining the yearly maintenance with the derived standard times for maintenance. In addition, the price per mechanic per hour is derived from this calculation. However, this analysis is purely used as a pre-calculation, the post analysis will show how many hours the mechanics actually worked (direct hours) to maintain the trains. For instance, suppose that in 2016, 75000 direct hours are pre-calculated to perform all the necessary maintenance but the post analysis shows that there are only 65000 direct hours registered, this could be the consequence of working inefficiently or not registering properly. Regardless of the reason, a lower budget will be paid to OBM. In addition, higher costs could occur since external workers are needed to perform all maintenance that is required by the the dutch railways. The asset management program MAXIMO is used to keep track of the data mentioned above. Table **3.1** shows the KPI's that can be retrieved from MAXIMO and thus can be used in the analysis.

Table 3.1: Explanation KPI's

Outcome variables (KPI's)	Explanation
KPI presence	Presence in hours per month
KPI percentage total hours registrated	(Registered hours per month divided by precence in hours per month) * 100
KPI direct hours	Registered direct hours per month
KPI indiret hours	Registered indirect hours per month
KPI DUPP	Forecast registered direct hours per year
KPI productivity	Productivity equals direct hours per month divided by total precense in hours per month

To keep track of all the data, each mechanic has an iPad in which the daily production planning

per person is stored. The mechanics have to keep track of every hour they are present, both for hours they actually work (direct hours) and for hours they are not performing maintenance (indirect hours). In addition, their total hours registered (direct + indirect hours) should be 7.45 hours every day and should be equal to their presence. Since the direct hours a mechanic works determines the budget OMB receives from the Dutch Railways and the KPI productivity is measured by dividing the direct hours by the mechanic's presence in hours, this KPI will be regarded as the most important KPI and thus chosen as outcome variable of willingness to change.

Herscovitch and Meyer (2002) indicated that when willingness to change is high, organizational members will exhibit more pro-social, change-related behavior–that is, actions supporting the change effort that exceed job requirements or role expectations. In addition they found that members whose commitment to change was based on "want to" rather than "need to", exhibited not only more cooperative behavior but also championing behavior. That is, promoting the change to others. Since one of the main drivers of the organizational change is to increase the performance (eq. efficiency and productivity), individuals with a higher willingness to change are more cooperative in terms of increasing their performance. Therefore, the following is hypothesized:

Hypothesis 5 : *willingness to change is positively related to performance in terms of productivity.*

3.5.4 Conceptual model

In this section, the model that emerged from literature will be presented together with possible implications arising from this model. We set out to find out if and to what extent adaptability is a driver behind willingness to change and how a personal trait such as self-efficacy influences this driver. Furthermore, this conceptual model aims to uncover the potential effect of the moderating variables: transformational leadership and trust in management on the relationship between self-efficacy and adaptability and the relationship between adaptability and willingness to change, respectively. The model is shown in figure **3.1**.

Organizational change is a major challenge; the literature is full of contributions outlining the complexity of organizational change efforts. It is widely acknowledged that planned organizational change is not fully possible, since organizations are continually subject to change, planned as well as unplanned. However, outcomes of this study could give us a new perspective on how willingness to change is influenced (indirectly) aswell as the consequenses of willingness to change
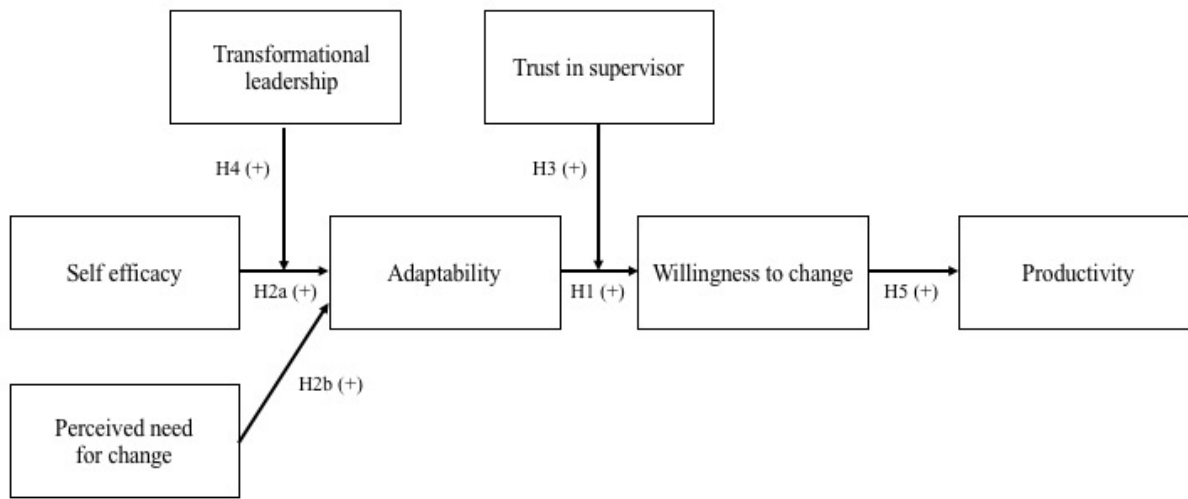
Figure 3.1: Research Model

for job performance.. In addition, moderating effects could explain how these relationships are influenced. Based on these outcomes, theoretical and practical implications can be formulated.

Chapter 4

Method

This chapter explains the research method of the research, followed by the research design. Finally, an explanation of how the data analyses have been conducted is given.

4.1   Research method

In order to gain insight into obtain the investigated problem, the research began with a qualitative method by means of several informal interviews with the business controller. Through these interviews, a complete view of the organizational change was obtained as well as of the present state of affairs. In addition, several of the constructs that could be included in the research model were identified. For example, self-efficacy, which is pointed out in the literature as important, was also emphasized as important by the business controller, especially in the context of OBM. In order to examine the relationships between the constructs of the research model, a quantitative research method has been used. Data were collected by means of a cross-sectional survey research, which is explained in more detail in the next section.

4.2   Research design

In this research, a cross-sectional design is used, which is a type of observational study that analyzes data collected from a population at a specific point in time. Based on the insights that were gathered, both in the interview with the business controller and the literature review, an online survey was developed, with measurement scales based on validated scales. This survey has

been used to test the relationships between the constructs in the research model and to test whether the derived hypotheses were correct. Because all respondents work in the same hierarchical level, every respondent received an survey in order to get the highest possible sample size and increase the confidence in the model estimates. Finally, this resulted in in a sample size of 87 which is a response rate of 76%.

4.3   Procedure

Data was collected by means of a questionnaire. To distribute the questionnaire, my internal supervisor was consulted to check which way of distributing the questionnaire would yield the highest response. Since all mechanics have an iPad, and a paper questionnaire seemed to yield less response due to time restrictions, an online questionnaire was chosen. The several team supervisors as well as the mechanics were informed about the research, the questionnaire and the purpose of the research. In order to enhance the efficiency of filling out the questionnaire and avoiding employees forgetting the instructions, the instructions were also included on the first page of the online questionnaires. Furthermore, the respondents were clearly informed that the outcomes of the questionnaire were processed anonymously and would be exclusively used for internal scientific research. During the period that the online survey was open, my internal supervisor send an email to all participants to encourage them to fill in the survey in interest of the research. In addition, employees were asked to participate and fill in the survey truthfully and independent by emphasizing that the outcome of this research would be valuable for helping successful organizational change within OBM. Also, a deadline was given in which the employees had to fill in the online survey to make sure that the results were received on time. After the deadline had passed and increase the response, a reminder was send to the employees who didnt fill in the survey within the deadline, to give them another opportunity. The online link that the respondents received, referred them to an online survey, that was created by using Google Forms. This survey consisted of 42 items in which they were asked to what extent they agreed or disagreed on different items and scales.

4.4   Participants

The questionnaire was distributed to a total of 115 mechanics, which is the entire population of mechanics within OBM. With 87 submitted questionnaires,the response rate was 75.65%. 86 (98,85%) of these submitted questionnaires were complete. Of the not-completed questionnaire, only the respondent's name and age was not filled in. The sample of 87 questionnaires included 86 (97.85%) men and 1 (1.15%) woman. The age of the respondents in the final sample ranged from 18 to 65, with most of the respondents being in the age range of 56-65 years (32.2%). the respondents' duration of employment ranged from 1 to 40, with most of the respondents being in the range of 11-20 years (37.9%). Descriptive statistics about the final sample can be found in Appendix **.1**.

4.5   Measures

As described in the literature review, the research model contains five constructs, from which two serve as moderating variables. All measures of the present study were derived from validated scales.

Willingness to change

To measure willingness to change, six items were used, derived from a scale developed by Van Beek (2011) (unpublished). This six-item scale is based on a scale developed by Metselaar and Cozijnsen (1997). Metselaar and Cozijnsen (1997) measured the willingness to change and the behaviourial outcome component as one construct, whereas Van Beek (2011) seperated these into two constructs of which only the willingness to change construct is used for this survey. An example of an item is "I am committed to overcome my resistance to the organizational change my company is facing". All of these items were responded to on a five-point scale with anchors ranging from totally disagree (1) to strongly agree (5).

Self-efficacy

To measure self-efficacy, ten items were used, derived from a scale developed by Schwarzer and Jerusalem (1995). This scale measures employees generalized self-efficacy. An example of an item is "It is easy for me to stick to my aims and accomplish my goals". All of the items were responded

to on a seven-point scale with anchors ranging from totally disagree (1) to strongly agree (5).

Adaptability

To measure adaptability, eight items were used, derived from a scale developed by Ployhard and Bliese (2006). This scale measures employees adaptability on 8 different sub-dimensions. For this questionnaire, only the sub-dimension "uncertainty" is used, since this dimension fits the problem context. An example of an item is "I take responsibility for acquiring new skills". All of these items were responded to on a five-point scale with anchors ranging from totally disagree (1) to strongly agree (5).

Transformational leadership

To measure transformational leadership, ten items were used, derived from the CLIO (Charismatic Leadership in Organizations) questionnaire developed by De Hoogh, Den Hartog and Koopman (2004). An example of an item is "My manager has a vision and image of the future." All of the items were responded to on a five-point scale, with anchors ranging from totally disagree (1) to totally agree (5).

Trust in supervisors

To measure trust in supervisors, four items were used, derived from a scale developed by Schoorman et al. (2006). For the present study, the items were slightly altered to reflect a focus on the direct supervisor. An example of an item is "If I had my way, I wouldnt let my supervisor have any influence over issues that are important for me." All of the items were responded to on a five-point scale, with anchors ranging from totally disagree (1) to totally agree (5).

Perceived need for change

To measure Perceived need for change, four items were used, derived from a scale developed by van den Heuvel et al. (2015). An example of an item is "I believe this organizational change is needed". All of the items were responded to on a five point scale, with anchors ranging from strongly disagree (1) to strongly agree (5). Because the second item was phrased negatively, it is reverse coded.

Productivity

The mechanics have to keep track of every hour they are present, both for hours they actually work (direct hours) and for hours they are not performing maintenance (indirect hours). In addition their total presence in hours is measured, which should be equal to 7.45 hours. As a result,

productivity is a percentage that is calculated by dividing the direct hours by total presence in hours and by multiplying this by 100. This data is retrieved from the asset management program MAXIMO.

4.5.1 Construct reliability

In order to make sure that the scale items measured the construct in a reliable way, the Cronbach's α coefficient for each construct was computed. George and Mallery (2003) p. 231) provide the following rules of thumb:

Table 4.1: Cronbach's α Rules of Thumb

Cronbach's α	Internal consistency
$\geq .9$	Excellent
$\geq .8$	Good
$\geq .7$	Acceptable
$\geq .6$	Questionable
$\geq .5$	Poor
$< .5$	Unacceptable

While increasing the value of alpha is partially dependent upon the number of items in the construct, it should be noted that this has diminishing returns. In addition, a minimal level of the cronbach's α of .7 is regarded as acceptable which implies a acceptable internal consistency of the items that compromise a construct.

In table **4.2**, all constructs with corresponding Cronbach's α are shown. As seen in the table, only one construct didn't meet the the aforementioned treshold (Cronbach's α = .65). However, after deleting one item in this scale (*"I get frustrated when things are unpredictable"*), the Cronbach's α increased to .7 which resulted in a scale that has an acceptable internal consistency. The other constructs already have a Cronbach's α higher than .9, which means that the internal consistency of these constructs is excellent without having to delete an item.

Table 4.2: Cronbach's α Constructs

Construct	Cronbach's α	Cronbach's α after deleting one item
Self-efficacy	**.91**	not applicable
Perceived need for change	**.92**	not applicable
Transformational leadership	**.98**	not applicable
Adaptability	.65	**.70**
Trust in supervisor	**.94**	not applicable
Willingness to change	**.90**	not applicable

4.6 Analysis

IBM SPSS Statistics 24 is used to analyze the data and answer the proposed research questions. all the questions were used except for one item in the construct adaptability, since this item was deleted in order to increase the Cronbach's α to satisfy the threshold of .7.

The analyze the model, a hierarchical regression is used in order to control for the effects of certain predictors independent of the influence of others. The answers to the stated hypotheses will contribute to answering the main research question, which will be made explicit in the conclusion and discussion section.

4.6.1 Control variable

Despite the the predictors that can influence willingness to change and performance outcomes, factors that are outside the scope of the model might be present and could also have an influence on the constructs used in the research model.

An important control variable which should be included in the analyses, is the employees' organizational tenure. Employees who have been working in the company for a longer period, may have a lower willingness to change than employees who are working in the company for a shorter period. A reason could be that they are afraid of changing their status quo because this could seem as less favorable for their own position, a position in which they have felt comfortable for several years. The remaining control variables that could be incorporated were age and gender. However, age wouldn't yield any significant results, because there is only one woman working as mechanic and age is highly correlated with organizational tenure. Therefore, only organizational tenure is included as control variable in this study.

Chapter 5

Results

5.1 Descriptive statistics and correlations

Table **5.1** shows the ranges, means, standard deviations as well as the correlations of the constructs. Apart from the constructs of the research model, the control variables are also included in the table (indicated with control variable in front of the variable). From the table can be seen that the respondents scored relatively high on the different constructs. The mechanics perceived the need for change, of the organizational change within NedTrain, to be 3.50, on a scale from 1 to 5. This suggests that mechanics are well aware of the reason for organizational change and therefore also perceive a certain need to participate in this organizational change. In addition, the willingness to change scored also relatively high with a score of 3.73, on a scale from 1 to 5. Hence, mechanics do not only perceive a need but are also willing to participate in the organizational change. The means for transformational leadership and trust in supervisor were both also relatively high, respectively 3.50 and 3.70. This suggests that mechanics perceive the behaviour of their supervisor as one of a transformational leader as well as having a high level of trust in their supervisor. Finally, the mean of the mechanic's productivity is 41.63%, this is quite low seeing that the target has been set at 65 %. This suggests that there is enough room for improvement in terms of performance.

Table 5.1: Descriptives and Correlation Matrix

Construct	Range	M	SD	1	2	3	4	5	6	7	8	9
1. Self-efficacy	1-5	3.88	.57	(.91)								
2. Perceived need for change	1-5	3.50	.77	.48**	(.92)							
3. Transformational leadership	1-5	3.50	1.07	.21	.36**	(.98)						
4. Adaptability	1-5	3.67	.49	.72**	.56**	.32**	(.70)					
5 Trust in supervisor	1-5	3.70	1.05	.22*	.30**	.92**	.31**	(.94)				
6. Willingness to change	1-5	3.73	.65	.46**	.58**	.29**	.53**	.30**	(.90)			
7. Productivity (percentage)	0-100	41.63	22.99	-.20	-.29*	-.01	-.22	-.05	-.24			
8. Control variable: age	18-65	48.16	12.40	-.08	.1	-.004	.02	.1	-.001	-.13		
9. Control variable: gender	1-2	-	-	.18	.21	-.06	.1	-.05	.1	-.074	-.27	
10. Control variable: duration of employment	1-40	18.19	12.55	-.1	.005	-.04	.009	.04	-.11	-.24*	.74**	-.15

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).
Cronbach's α is shown between()

First the antecedents self-efficacy and perceived need for change are positively related to adaptability (respectively r = .72, p = *<.01*; r = .56, p = *<.01*), which are in line with the the proposed hypotheses 2a and 2b. Second, adaptability is positively related to willingness to change (respectively r = .53, p = *<.01*), which is in line with hypothesis 1. Third, willingness to change has a non significant negative relationship with productivity, which is not in line with hypothesis 5.

The test of the hypothesized moderating effects (H3 & H4) will be discussed in the next section.

5.2 Regression analyses

To test all hypotheses, a stepwise hierarchical regression analysis was used. Variables are entered in blocks, with each independent variable being assessed in terms of what it adds to the prediction of the dependent variable, after the previous variables have been controlled for. The overall model is assessed in terms of its ability to predict the dependent variable. In addition, this section describes the regression analyses which are used for testing if the constructs transformational leadership and trust in supervisor, moderate the relationship between self-efficacy and adaptability and between adaptability and willingness to change, respectively.

In Table **5.2**, the results of the regression analyses of the relationships between both self-efficacy and adaptability (model 1) and perceived need for change and adaptability (model 2) are presented after the effect of organizational tenure has been controlled for. In addition to table **5.2**, table **5.3**, shows the results of the regression analysis in which self-efficacy and perceived need for change are entered in one model simultaneously.

5.2.1 Self-efficacy and adaptability

The stepwise hierarchical regression (table **5.2**) revealed that at step 1, the control variables didn't contribute significantly to the regression model, $F(4,81) = .01$, p>.05 and accounted for 0% (rounded) of the variation in adaptability. Introducing self-efficacy explained an additional 52% of the variation in adaptability and this change in R^2 was significant, $F(2,84) = 46.33$, p<.01. Both the correlation matrix and the stepwise hierarchical regression showed support for hypothesis 2a (r = .72, p<.01; $\beta = .73, p$<.01). Hence, employees high in self-efficacy will indeed be more adaptable. In addition, the analysis showed that organizational tenure didn't have a significant

effect on adaptability.

5.2.2 Perceived need for change and adaptability

The stepwise hierarchical regression (table **5.2**) revealed that at step 1, the control variables didn't contribute significantly to the regression model, $F_{(1,85)} = .01$, p>.05 and accounted for 0% (rounded) of the variation in adaptability. Introducing perceived need for change explained an additional 31% of the variation in adaptability and this change in R^2 was significant, $F_{(2,84)} = 19.25$, p<.01. Both the correlation matrix and the stepwise hierarchical regression showed support for hypothesis 2b (r = .56, p<.01; $\beta = .56, p<.01$). Hence, employees high in perceived need for change will indeed be more adaptable. In addition, the analysis showed that organizational tenure didn't have a significant effect on adaptability.

Table 5.2: Results of Regression Analysis H2a - H2b, Standardized Beta Coefficients

	Adaptability (H2a)		Adaptability (H2b)	
Construct	**Step 1**	**Step 2**	**Step 1**	**Step 2**
Control variable				
Organizational tenure	.01	.01	.01	.01
Main effects				
self-efficacy		.73**		
Perceived need for change				.56**
R^2	0	.53	0	.31
Adjusted R^2	-.01	.51	-.01	.30
R^2 **change**	0	.52**	0	.31**
F	.01	46.33**	.01	19.25**

*=p <.05
**=p <.01
note: two-tailed effects, N=87

5.2.3 Self-efficacy, perceived need for change and adaptability

The control variables didn't contribute significantly to the regression model shown in **5.3** , self explanatory with the same parameters already mentioned in the previous section. Introducing both self-efficacy and perceived need for change simultaneously, explained an additional 58% of the variation in adaptability and this change in R^2 was significant, $F_{(3,83)} = 38.65$, p<.01. So even when both independent variables are entered simultaneously, the stepwise hierarchical regression showed

support for hypothesis 2a and 2b (respectively, $\beta = .59, p{<}.01; \beta = .28, p{<}.01$). Hence, employees high in both self-efficacy and perceived need for change will be more adaptable. In addition, the analysis showed that the control variable didn't have a significant effect on adaptability.

Table 5.3: Results of regression analysis H2a - H2b combined in One Model, Standardized Beta Coefficients

	Adaptability (H2a and H2b)	
Construct	**Step 1**	**Step 2**
Control variable		
Organizational tenure	.01	.1
Main effects		
Self-efficacy		.59**
Perceived need for change		.28**
R^2	0	.58
Adjusted R^2	-.01	.57
R^2change	0	.58**
F	.01	38.65**

*=p <.05
**=p <.01
note: two-tailed effects, N=87

5.2.4 Adaptability and willingness to change

The stepwise hierarchical regression (table **5.4**) revealed that at step 1, the control variables didn't contribute significantly to the regression model, $F(1,85) = 1.06$, p>.05 and accounted for 1% of the variation in willingness to change. Introducing perceived need for change explained an additional 28% of the variation in willingness to change and this change in R^2 was significant, $F(2,84) = 17.27$, p<.01. Both the correlation matrix and the stepwise hierarchical regression showed support for hypothesis 2b (r = .53, p<.01; $\beta = .53, p{<}.01$). Hence, employees high in adaptability will indeed be more willing to change. In addition, the analysis showed that the control variable didn't have a significant effect on adaptability.

Table 5.4: Results of Regression Analysis H1, Standardized Beta Coefficients

	Willingness to change (H1)	
Construct	**Step 1**	**Step 2**
Control variable		
Organizational tenure	-.11	-.12
Main effects		
Adaptability		.53**
R^2	.01	.29
Adjusted R^2	0	.27
R^{2}change	.01	.28**
F	1.06	17.27**

*=p
**=p
note: two-tailed effects, N=87

5.2.5 Willingness to change and productivity

The stepwise hierarchical regression (table **5.5**) revealed that at step 1, the control variable did contribute significantly to the regression model, $F_{(1,74)} = .2.64$, $p > .05$ and accounted for 1.1% of the variation in productivity. Introducing willingness to change explained an additional 7% of the variation in willingness to change and this change in R^2 was not significant, $F_{(2,73)} = 3.17$, $p > .05$. Both the correlation matrix and the stepwise hierarchical regression showed no support for hypothesis 5 (r = -.24, p>.05; $\beta = -.25, p > .05$).Hence, a high willingness to change is not related to increased productivity. However, the analysis shows that the control variable has an significant effect on productivity ($\beta = -.26, p < .05$) ,which means that the longer people are working in this company, the lower their productivity is.

Table 5.5: Results of Regression Analysis H5,Standardized Beta Coefficients

	Productivity (H5)	
Construct	Step 1	Step 2
Control variable		
Organizational tenure	-.24*	-.26*
Main effects		
Willingness to change		-.25
R^2	.06	.12
Adjusted R^2	.05	.1
R^{2}change	.06	.06
F	2.64	3.17

*=p
**=p
note: two-tailed effects, N=76

5.2.6 Moderating effect transformational leadership on the relationship between self-efficacy and adaptability

Table 5.6: Results of regression analysis H4, potential moderating effect

	Moderating Effect of Transformational Leadership (H4)		
Construct	Step 1	Step 2	Step 3
Control variable			
Organizational tenure	.01	.09	.08
Main effects			
Self-efficacy		.34**	.34**
Transformational leadership		.09*	.09*
Interaction (SE x TL)			.01
R^2	0	.56	.56
Adjusted R^2	-.01	.54	.53
R^{2}change	0	.56**	0
F	.01	34.46**	25.57**

*=p
**=p
note: two-tailed effects, N=87

The stepwise hierarchical regression (table **5.6**) was used to determine whether the relationship between self-efficacy and adaptability depended on the level of perceived transformational leadership. In the table, the unstandardized beta coefficients are shown since all the continuous variables are standardized before performing the analysis in order to reduce multicollinearity

and the associated problems that are caused by these higher-order terms. Hypothesis 4 stated that transformational leadership moderates the relationship between self-efficacy and adaptability such that the relationship between self-efficacy and adaptability is stronger when perceived transformational leadership is high compared to when it is low. Results indicated that both higher self-efficacy and higher transformational leadership was associated with higher adaptability, respectively ($\beta = .34, p<.01, \beta = .09, p<..05$).However the regression analysis showed no support for the proposed moderating effect ($\beta = .01, p>.05$). Hypothesis 4 was therefore rejected.

5.2.7 Moderating effect trust in supervisor on the relationship between adaptability and willingness to change

Table 5.7: Results of Regression Analysis H3, Potential Moderating Effect, Unstandardized Beta Coefficients

	Moderating Effect of Transformational Trust in Supervisor (H3)		
Construct	**Step 1**	**Step 2**	**Step 3**
Control variable			
Organizational tenure	-.11	-.12	-.12
Main effects			
Adaptability		.31**	.33**
Trust in supervisor		.10	.10
Interaction (AD x TIL)			.10
$\mathbf{R^2}$	.01	.31	.34
Adjusted $\mathbf{R^2}$	0	.29	.31
$\mathbf{R^2}$**change**	.01	.30**	.02
$\boldsymbol{F}$	1.06	12.66**	10.43**

*=p
**=p
note: two-tailed effects, N=87

The stepwise hierarchical regression (table **5.7**) was used to determine whether the relationship between adaptability and willingness is moderated by the level of trust in supervisor. In the table, the unstandardized beta coefficients are shown since all the continuous variables are standardized before performing the analysis in order to reduce multicollinearity and the associated problems that are caused by these higher-order terms. Hypotheses 3 stated that trust in supervisor moderates the relationship between adaptability and willingness to change such that the relationship between adaptability and willingness to change is stronger when trust in supervisor is high compared to when it is low. Results indicated that higher adaptability was associated with higher willingness

to change ($\beta = .33, p{<}.01$).However the regression analysis showed no support for the proposed moderating effect ($\beta = .10, p{>}.05$). Hypothesis 3 was therefore rejected. Figure **5.1** shows an overview of the significant relations that were found.
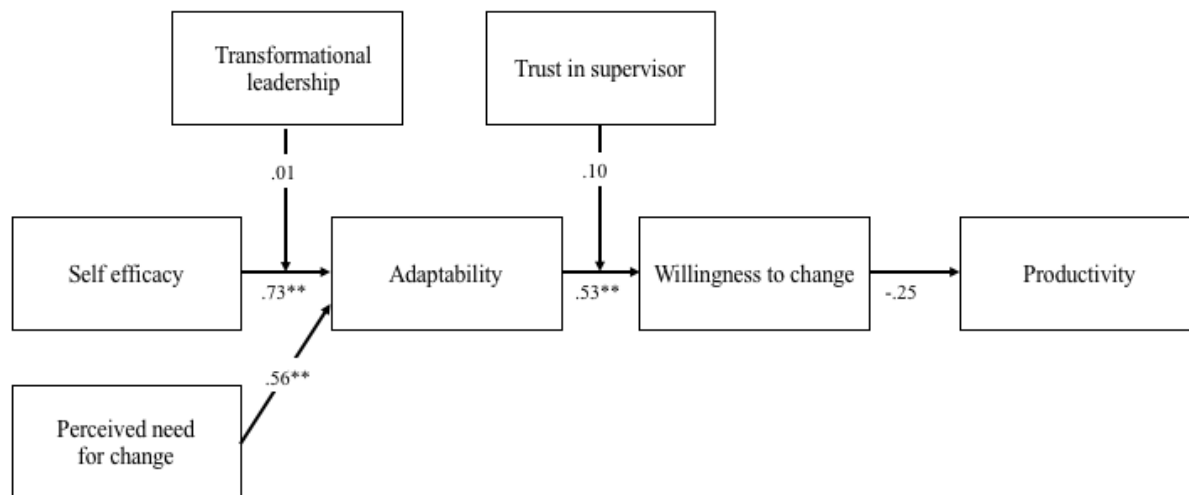

Figure 5.1: Research Model with found Relationships

5.3 Additional analyses

On the individual-level, the relationship between willingness to change and productivity was rejected ($\beta = -.27, p>.05$). However, since the mechanics work in five teams each with its own supervisor, it also might be interesting to check this relationship on the team-level. Therefore, a second correlation table is drawn up in which the variables were aggregated into team-level variables. These variables are calculated by taking the mean of the summed scores of the mechanics per team, resulting in score per construct per team. The range, mean and standard deviation are already discussed in section **5.1** and will therefore not be discussed anymore in this section. Apart from the correlation coefficients, the only output that is different are the standard deviations because the original variables have been aggregated. In addition, table **5.8** shows the descriptive matrix of the constructs per team.

Table 5.8: Descriptives per team

Construct (mean)	Team 1	Team 2	Team 3	Team 4	Team 5
Self-efficacy	3.83	3.76	3.85	3.93	4.03
Perceived need for change	3.76	3.50	3.55	3.37	3.33
Transformational leadership	4.16	4.31	2.30	4.20	3.03
Adaptability	3.74	3.58	3.61	3.76	3.70
Trust in supervisor	4.39	4.44	2.65	4.00	3.16
Willingness to change	3.67	3.66	3.77	3.80	3.67
Productivity (percentage)	49	47	35	42	37

Table 5.9: Descriptives and Correlation Matrix, Constructs on team-level

Construct (on team-level)	Range	M	SD	1	2	3	4	5	6	7	8
1. Self-efficacy	1-5	3.88	.10	(.91)							
2. Perceived need for change	1-5	3.50	.22	-.57	(.92)						
3. Transformational leadership	1-5	3.50	.89	-.37	.21	(.98)					
4. Adaptability	1-5	3.67	.08	.53	.08	.32	(.70)				
5 Trust in supervisor	1-5	3.70	.80	-.37	.24	.97**	.30	(.94)			
6. Willingness to change	1-5	3.73	.06	-.04	.32	-.01	.54	-.07	(.90)		
7. Productivity (percentage)	0-100	41.63	5.11	-.68	.60	.87	.05	.89*	-.24		
8. Control variable: age	18-65	48.16	2.54	-.46	.58	-.03	.02	-.01	.88*	-.13	
9. Control variable: duration of employment	1-40	18.19	3.70	-.30	.73	.01	.38	-.02	.87	.19	.93*

*Correlation is significant at the 0.01 level (2-tailed)
*Correlation is significant at the 0.05 level (2-tailed)
Cronbach's α is shown between()
note: N=5

As shown in table **5.9**) , there is also no significant correlation between willingness to change and productivity on team-level (r = -.24, $p = <.05$). However, there is one other variable on-team level construct related with productivity; trust in supervisor is positively related to productivity (r = .88, $p = .05$), which can have important implications for increasing productivity.

Table 5.10: Result of Regression analysis, Trust in Supervisor and Productivity

	Productivity	
Construct	**Step 1**	**Step 2**
Control variables		
Organizational tenure	.134	-.126
Main Effect		
Trust in supervisor		.95*
R	.116	.996
Adjusted R	-.769	.982
R change	.116	.880**
F	.131	75.369**

*=p<.05
**=p<.01

Following up on the the positive correlation between trust in supervisors and productivity, a stepwise hierarchical regression was performed to check if this proposition would still hold.The stepwise hierarchical regression (table **5.10**) revealed that at step 1, the control variables didn't contribute significantly to the regression model, F(2,2) = .131, p>.05 and accounted for 11.6% of the variation in productivity. Introducing trust in supervisor explained an additional 88% of the variation in productivity and this change in R^2 was significant, F(3,1) = 75,369, p<.05. Both the correlation matrix and the stepwise hierarchical regression showed support for a significant positive relationship between trust in supervisor and productivity (r = .89, p<.05; $\beta = .95, p<.05$). However, this regression analysis is constrained to a small sample size (N=5), since the variables are aggregated into team-level variables. Hence, the statistical power of this analysis is low, results are less reliable and conclusions should therefore be interpreted with caution. Nonetheless, descriptive research can still be used to give valuable insights and can help an organization better define and measure the significance of constructs measured in the current study. Table **5.8** reinforces the finding of the regression analysis. The descriptive statistics per team shows that teams that score lower on trust in supervisor, in most of the cases also score lower on productivity and vice versa. For instance, team 3 which has the lowest trust in supervisor also has the lowest score onf productivity. On the other hand, team 1 and 2, which have the highest and almost equal score on

trust in supervisor, also have a higher productivity.

Chapter 6

Discussion and Conclusions

6.1 Theoretical implications

Understanding employees reactions to a planned organizational change is an important concern for many organizations. Rapid environmental and technological changes highlight the need for organizations to continually engage in adaptation processes and organizational changes. To realise intended changes, organizations must rely on the cooperation of their employees (Porras & Robertson, 1992). However, prior research mainly focussed on reducing employees' resistance to change (Stanley et al., 2005; Bordia et al., 2004; Piderit, 2000; Kotter & Schlesinger, 2008) rather than increasing their willingness to change. Hence, this study aimed at uncovering relationships of willingness to change with employee- and work characteristics. Furthermore, the second goal of this study was to study the relationship of willingness to change with performance.

Organizational change can be successfully implemented when the employees are sure that they have requisite knowledge and degree of skills required to make the efforts successful. Both Madsen (2005) and Carter (2008) found that self-efficacy is positively related to handling organizational change. In accordance they state that individuals with low self-efficacy tend to regard tasks as challenging and thus are likely to reduce their efforts and give up quickly. However, a behavioural outcome of self-efficacy has not been examined in these studies while this study found a strong positive relationship between self-efficacy and adaptability, something that hasn't been studied before. Employees with high self-efficacy are likely to adapt their behavior more easily in order to make their efforts more successful by exerting efforts to overcome the difficulties that come with organizational change and because they are less likely to regard challenging tasks as threatening

and are more likely to treat these situations as opportunities.

It is often hard for managers to get the reason for organizational change across employees, because reasons to motivate complex organizational change are not always accepted, understood, or perceived in the way managers intended, even if the organizational change is for the benefit of the employees (Rousseau & Tijoriwala, 1999). Armenakis et al. (1993) noted that the belief that a change is needed, serves as a primary mechanism for creating willingness to change. In addition, Ashford (1988) found that timely and detailed information sees a critical element of change effort and increases the perceived need for change, this study confirms confirms these findings indirecty. In addition to previous research, this study reveals that perceived need for change has an positive effect on a employees adaptability which in turn has a positive effect on willingness to change. The relationship between perceived need for change and adaptability has not been studies before, most of the studies on adaptability show both cognitive and personal abilities as antecedents to adaptability (Wang et al., 2011). Ployhart and Bliese (2006) proposed that adaptability is a relatively stable individual difference that influences how employees interpret and respond to a situation as well as Wessel et al who provided further support the notion of adaptability being a "stable" individual difference.However, this study expands upon this literature by showing that an organization can certainly have a positive influence on employees' adaptability by increasing an employees' perceived need for change. That is, giving timely and detailed information about the change seems to be a critical element of the change effort and is likely to increase the perceived need for change.

Not much research has been done on the subject adaptability, especially in regards to willingness to change. Both heslin (2009) and Lovett and Schunn (1999) found that employees with higher adaptability are expected to have a better job performance, especially in workplaces constantly undergoing changes. Other research mainly focused on the relationship between adaptability and an individual's appraisal of the situation. However, adaptability hasn't been linked to willingness to change in previous research. In line with our expectations, adaptability contributed to higher levels of willingness to change. Adaptable individuals are more likely to perceive situations in a positive light which increases their adaptability to notice and appreciate even small supportive actions by their organization (Ployhart and Bliese, 2006). Adaptable individuals will take responsibility for adjusting to the situation including learning new skills or processes to keep operating efficiently within a changing environment and will therefore have a higher willingness to change. Since openness to job changes is considered as an important aspect of adaptability, the result of

this study is in line with that of van Dam (2003), who found that openness to job changes was a strong predictor of individuals' willingness to participate in required job transitions.

Weakliem and Frenkel (2006) found that despite managerial efforts at monitoring and supervision, nearly all employees retain some control over how hard and effectively they work. Hence, workers values, attitudes, or beliefs potentially affect their productivity. As an outcome characteristic, job performance was included in the research model and was expected to have a positive relationship with productivity. Unfortunately, results of this study revealed that willingness to change was not related to performance in terms of productivity. This finding can be explained by the definition of willingness to change: "An employees positive behavioural intention towards the implementation of a change in the structure, culture, or working methods of an organization or department, resulting in an effort from this employee to actively or passively support the change process involved." Hence, a high level of willingness to change might not always have to result in a high productivity, since productivity might not be perceived as important during the organizational change. Employees might be so busy with coping with the organizational change, that they tend to temporarily forget their main goal, in case of OBM: productivity. Hence this this may indicate that there is temporarily no relationship between willingness to change and productivity when being in an organizational change. Secondly, productivity measurements are not complete and accurate, which makes drawing up relationships between antecedents and productivity more difficult. Another reason could be that when employees perceive their productivity as high, they don't see any reason to change resulting in a lower willingness to change.

Additional analysis on the team-level showed that trust in supervisor had a positive influence on productivity, such that teams with a high level of trust in their supervisor, have a higher productivity. This can be explained by reflecting on the study of Tyler and Degoey (1996), who found that trust helps to reduce the uncertainty surrounding a manager's behavior, making it more likely that employees will cooperate with their manager's decisions. Trust makes it more likely that employees will accept and cooperate with authority. Because these leaders are trusted, employees are more willing to accept their values. Accepting a leader's value message is a way to elicit employee contributions that otherwise would not be forthcoming and thus might explain the positive relationship between trust and productivity. However, this finding should be interpreted with caution because these outcomes are based on variable scores that have been aggregated from individual-level scores to team-level scores.

Finally, this study tested 2 moderators of the relationship between self-efficacy and adaptability and the relationship between adaptability and willingness to change. These moderators were (1) transformational leadership; Under conditions of organizational change, transformational leadership acts as a change antecedent that facilitates the formation of higher quality relationships between managers and their employees. Through these high quality relationships, managers can motivate employees in such a way that their confidence in their own knowledge and skills needed for organizational change, increases. (2) Trust in supervisor: Trust in supervisors increases the employees' acceptance of a change initiative, which in turn motivates them to change their behavior in such a way that it is in line with the organizational goals. Unfortunately, both variables in this study showed no evidence for the formulated moderating relationships.

For the first (1) moderating relationship, an explanation might be that the mechanics' do not see their supervisor as a transformational leader but as an transactional leader, that only focuses on the performance instead of motivating them to identify with the leaders vision and sacrifice their self-interest for that of the group of the organization (Bass, 1985). In a maintenance company, it's quite common to act as an transactional leader, since performing maintenance is the main goal of the company. In addition, high quality relationships through which employees could be motivated, might be missing. It seems that mechanics and their supervisor are mainly focused on performance rather than creating an culture in which quality relationships play a big role. Another explanation could be that transformational plays a different role within the model. The significant correlation between transformational leadership and perceived need for change and between transformational leadership and adaptability can indicate that perceived need for change mediates the relation between transformational leadership and adaptability. This is in line with Bass (1985), who stated that a transformational leader could be a good facilitator of the change process by identifying employees with the leaders vision. Hence, it is likely that a transformational leader increases the perceived need for change, which in turn increases adaptability.

For the second (2) moderating relationship, an explanation might be that, although trust in the supervisor is high, this will not lead to a higher willingness to change, because the supervisor doesn't model the values that are important for, and in line with the organizational change. An assumption for this relationship was that supervisors supported the change initiative and tried to convince mechanics to accept and cooperate with this change. However, if supervisors don't support the change, it's most likely that mechanicss agree with this view, since trust makes it more likely that employees will accept and cooperate with authority (Tyler Degoey, 1996). In

addition, when an employee trusts his or her supervisor, he or she will have greater confidence and will believe what what is being said is true and that these modeling values are genuine (Dirks Ferrin, 2001). Hence, when a supervisor doesn't support the change while employees still trust this supervisor, this could result in employees also being opposed to the organizational change.

6.2 Practical implications

Finally, practical implications result from this study, which are relevant for professionals undergoing organizational change.

First of all, this study indicated the importance of a individual's self-efficacy: organizations should focus on increasing an employee's self-efficacy in order to increase their adaptability when undergoing a organizational change. Individuals with high self-efficacy tend to regard challenging tasks as less threatening and are more likely to increase their efforts to fulfill a task. Furthermore, an employer is advised to give their employees the opportunity to generate their own structured, continual feedback in order to increase their self-efficacy (beattie, 2006). By talking to direct colleagues, reflecting on performance and discussing task-related situations, employees will become more confident on their knowledge and skills, which in turn will increase their adaptability.

According to Bandura (1981), the founder of the self-efficacy theory, the most effective way of creating a strong sense of efficacy is through mastery experiences. Successes build a robust belief in one's personal efficacy. Failures undermine it, especially if failures occur before a sense of efficacy is firmly established. If people experience only easy successes they come to expect quick results and are easily discouraged by failure. A resilient sense of efficacy requires experience in overcoming obstacles through perseverant effort. Some setbacks and difficulties in human pursuits serve a useful purpose in teaching that success usually requires sustained effort. After people become convinced they have what it takes to succeed, they persevere in the face of difficulties and quickly rebound from setbacks. By sticking it out through tough times, they emerge stronger from adversity.

One way to reduce feelings of uncertainty regarding task-related situations can be a participative strategy such as implementing team meetings (Bordia et al., 2004). These team meetings could consist of the mechanics together with their supervisor and the trainer who provides the education

that is needed for maintaining the trains. In this meeting, the supervisor is advised reflect on the performance of the team and should indicate what went well but should also put forward points of improvement. Furthermore, the supervisor may motivate and facilitate mechanics' performance by emphasizing the importance of their performance. In addition, mechanics should be given the opportunity to ask task- and situation related questions to overcome difficulties they might have. Both the supervisor and the trainer should be engaged in this discussion and should try to resolve these difficulties by reflecting on these questions and giving recommendations for improvement.

This study also underlined the importance of the perceived need for change during an organizational change. Proper information about the change, helps create a sense of urgency among employees which makes them in turn more likely to evaluate the change more positively. One of the most common ways to increase willingness to change is to educate employees about it beforehand (Jimmieson et al., 2004). Kotter and Schlesinger (2008) stated that communication of a proposed change helps employees see the need for and the logic of a change, this education process can involve one-on-one discussions, presentations to groups or reports. An education and communication program can be ideal when low level of adaptability is based on inadequate or inaccurate information, especially if the management needs the employees' help in implementing the change, which is obviously the case in OBM's scenario. Hence, I would recommend the management of OBM to use team presentations, before every significant change, with the purpose of educating mechanics and increasing their perceived need for change. These presentations should include what the changes are, how these changes are effecting employees and how these changes are going to be implemented. In addition, these presentations can be used by the management to obtain insight into underlying feelings and thoughts of employees about the change.

Another implication of this study is that adaptability is shown to be an antecedent predicting willingness to change. Besides using the standard procedure to recruit new mechanics, OBM may consider recruiting adaptive employees. Encouraging adaptive behavior in the workforce starts at the point of recruitment. Those employees who are more comfortable and familiar with the task of adapting can be selected for positions requiring such behavior, as the case for the position of mechanic. Firms may be able to increase the number of new employees hired with a high level of adaptability using certain selection techniques. Managers should emphasize the adaptive requirements of the job in the employment announcements and in vacancies to cause less adaptable applicants to self-select out of the application process. Work simulations that allow observation of applicant flexibility and adaptability could also be used to screen potential employees and also

encourage those who are not comfortable in such roles to select out of the process (Schneider and Bowen 1995).

Finally, the additional analyses stressed the importance of the trust employees have in their supervisor on team-level. Supervisors are advised to be aware of the influence trust has on productivity. Developing and maintaining of trust among managers and employees might should be a priority during change initiatives. These findings strengthen the assumption that it is important for supervisors to discover how to manage trust effectively in order to successfully manage current and future changes within organizations. OBM may consider formulating practices that promote open and honest communication, and they should create opportunities for employees to participate in decision-making processes that might affect their work. Supervisors should focus on responding to employees' requests for communication and listening to them actively and effectively. OBM is suggested to embrace a climate in which trust is a main pillar through involvement of employees in problem-solving processes and by letting them participate in important decisions. Ertrk (2008) shows that if employees are given the opportunity to participate in the implementation of change, and when they rely on the management, they will take on a more positive attitude towards change.

Therefore, OBM is recommended to focus on increasing the employees' trust in their supervisors throughout the organization. A way to achieve a high level of trust between managers and employees is for managers not to ignore employees and reply to their question regarding their work and career changes. When a change initiative is launched within OBM, mechanics might have serious concerns regarding their future. Therefore, their supervisors should give adequate information to their mechanics regarding their future careers and training opportunities. This could incorporated in the presentations mentioned in the paragraph above. In this way, this presentation would have multiple purposes: first of all, these presentations can be used by the management to obtain insight into underlying feelings and thoughts of employees about the change and in turn to try to increase their perceived need for change. Second, these presentations can serve as a tool to increase the trust between supervisor and team members by letting them actively participate in the change and by giving them realistic information regarding work-related changes, training opportunities and future careers.

Managers that are hired from outside the company have to apply via a job application procedure. However, as already mentioned, team managers within OBM are often appointed by choosing a mechanic that performed well and fits the job according the management. The management

chooses to abstain from a job application procedure, which might result in appointing team managers that are not suitable for this job. However, this study stresses the importance of the trust in a manager but also shows significant correlations between transformational leadership, adaptability and willingness to change. Therefore, I would recommend OBM to also implement a job application procedure regarding the promotion of a mechanic to manager. This job application procedure should decrease the chance of appointing managers that are less suitable for the job. Phelan and Lin (2001) extend this view by stating that promoting the best performers may help organizational performance, however there is a trade off; The newly promoted may actually suffer from poorer performance in their new positions due to outdated memories and knowledge building processes of the new job. OBM could adopt the same job application procedure for promoting mechanics as the procedure they currently use to hire managers externally.

In conclusion an overview of the above implications will be given by using the CIMO logic. The CIMO logic can be defined as follows: in this class of problematic Contexts, use this Intervention(s) type to invoke these generative Mechanism(s), to deliver these Outcome(s).

Design Principle 1 - Regular team meetings

For maintenance company such as OBM, in which employees' efficacy is positively related to an employees' adaptability (C), regular team meetings can be used (I) in which task- and situational difficulties will be discussed and performance will be reflected on (M) to increase an employees' self-efficacy.

Design Principle 2 - Team presentations

For maintenance company such as OBM, in which employees' perceived need for change is positively related to an employees' adaptability (C), team presentations before every significant change (I) can be used to educate employees and to obtain insight into underlying feelings and thoughts of employees concerning the change (M) which in turn can be used to increase the employees' perceived need for change (O).

Design Principle 3 - Including adaptive requirements in hiring policy

For maintenance company such as OBM, in which employees' adaptability is positively related to willingness to change (C), OBM should incorporate and emphasize adaptive requirements in employment announcements and vacancies (I) in order to increase the number of hired employees with a high level of adaptability (M) which eventually will lead to a higher level of adaptability within the working force (o).

Design Principle 4 - Implementing a job application procedure in regards to promotion

For maintenance company such as OBM, in which managers play an important role within the organizational change (C), OBM should implement a job application procedure in regards to promoting a mechanic to manager (I) in order to decrease the chance of appointing managers that are not suitable for the job which (M) eventually wil lead to better performing managers (O).

6.3 Conclusion and discussion

6.3.1 Limitation

Notwithstanding the strengths of this study, there are also several limitations that should be taken into account when interpreting the results. First of all, due to time restrictions a cross-sectional design was used instead of a longitudinal design. It is important to be aware of the predictive limitations of cross-sectional studies. The primary limitation of a cross-sectional design is that data is measured at a specific point in time which doesn't allow for determining causal relationships between significant variables. Willingness to change might change over time and antecedents predicting willingness to change could have a different influence, depending on which stage the organizational change is in (Steel, 2006) . Besides that, the setting of this research limits the generalizability of the findings of this study. NedTrain differs from other companies within the meaning of being a cost centre, which means that it is a department which does not produce directly but incurs costs to the business. That is, OBM is not accountable for its profitability and investment decisions but they are responsible for some of the costs of the Dutch Railways. Therefore it is possible that the findings of this study are only applicable in the sector in which NedTrain operates. More research in different organizations within different sectors may increase the generalizability of the findings.

Furthermore, data was gathered by means of an online survey. This can result in a response bias (Paulhus, 1991), which is a general term for a wide range of cognitive biases that influence the responses of participants away from an accurate or truthful response. This especially applies in studies that involve participants' self-reports, such as an online survey. First of all, the respondents might have answered in a way that makes them look more favorable to the researcher and the company. Secondly, respondents might not have answered the surveys individually. That is, in the

situation of OBM, there is a chance that respondents filled out the survey together with colleagues since they are working in close cooperation within the different teams. This might have led to biased results.

Finally, willingness to change didn't correlate significantly with productivity, which was not in line with the proposed hypothesis. However, a reason could be the lack of accuracy within the measurement of productivity. Productivity data was retrieved from the asset management program MAXIMO, which depends on the input provided. Hence, if employees don't accurately keep track of the maintenance they perform, their productivity measure will be inaccurate as well. Having more accurate measurements of productivity could have resulted in more significant relationships, based on which additional implications could have been made.

6.4 Future research

First of all, future research could examine if these findings can be generalized by performing this study in other companies, preferably in other sectors. In addition, it is interesting for future research to conduct a longitudinal study in regards to willingness to change, which allows for indicating causal relationships. Willingness to change as well as its antecedents should be measured before and after the organizational change after which implications could be drawn on how different constructs influence each other over a certain period of time. This could give insight in how willingness to change, changes over time and in turn how the influence of different antecedents might change depending on the stage of the organizational change. Moreover, a study over a longer period of time would also yield more accurate findings.

Secondly, the current study investigated the relationship between willingness to change and performance outcomes in terms of productivity. However future research could examine other other variables, which might be influenced by willingness to change. Examples of outcome variables that could be used are turnover intention, motivation to learn and organizational learning culture (Egan et al., 2004) which in turn might influence performance.These variables are in particular interesting because of the fast-changing evolution of technology and innovation requires the employee to keep learning and developing. As knowledge increasingly becomes a key factor for productivity, it has also become a currency for competitive success. By examining these relationships, and finding how they are related, research could draw conclusions and give implications in order to manage

and improve willingness to change and find a more accurate way to predict performance. Finally, both transformational leadership and trust in supervisor were measured as the interpretation of the mechanics, without involving their supervisors. However, by including supervisors/managers in future research differences between the perception of managers/supervisors and employees in regards to these variables could be examined. If there are differences, this could result in additional implications in regards to decreasing this misfit and subsequently increasing the willingness to change and preferably the outcome characteristics.

Bibliography

Armenakis, A. A., Harris, S. G. & Mossholder, K. W. (1993). Creating Readiness for Organizational Change. *Human Relations*, *46*(6), 681–703. doi:10.1177/001872679304600601. arXiv: 0803973233

Ashford, S. J., Rothbard, N. P., Piderit, S. K. & Dutton, J. E. (1998). Out on a limb: The role of context and impression management in selling gender-equity issues. *Administrative Science Quarterly*, *43*(1), 23–57. doi:10.2307/2393590

Bandura, A. (1997). Self-efficacy: The Exercise of Control. *Encyclopedia of human behavior*, *4*, 71–81. doi:10.1002/9780470479216.corpsy0836. arXiv: 82/3702-0122 [0003-066X]

Bandura, A. [Albert]. (1994). Bandura Self-efficacy defined. In *Encyclopedia of human behavior* (pp. 71–81). Retrieved from http://www.uky.edu/%7B~%7Deushe2/Bandura/BanEncy.html

Bass, B. M. [Bernard M.]. (1997). Does the transactional-transformational leadership paradigm transcend organizational and national boundaries? *American Psychologist*, *52*(2), 130–139. doi:10.1037/0003-066X.52.2.130

Bass, B. M. [Bernard M] & Riggio, R. E. (2006). Transformational leadership (2nd ed.). doi:10.1002/1521-3773(20010316)40:6⟨9823::AID-ANIE9823⟩3.3.CO;2-C. arXiv: arXiv:1011.1669v3

Battilana, J., Gilmartin, M., Sengul, M., Pache, A. C. & Alexander, J. A. (2010). Leadership competencies for implementing planned organizational change. *Leadership Quarterly*, *21*(3), 422–438. doi:10.1016/j.leaqua.2010.03.007

Bono, J. E. & Judge, T. A. (2003). Self-concordance at work: Toward understanding the motivational effects of transformational leaders. *Academy of Management Journal*, *46*(5), 554–571. doi:10.2307/30040649

Bordia, P., Hunt, E., Paulsen, N., Tourish, D. & DiFonzo, N. (2004). Uncertainty during organizational change: Is it all about control? *European Journal of Work and Organizational Psychology*, *13*(August), 345–365. doi:10.1080/13594320444000128

Brown, S. L. & Eisenhardt, K. M. (1997). The art of continuous change. *Administrative Science Quarterly*, *42*(1), 1–34. doi:10.2307/2393807

Burke, C. S., Sims, D. E., Lazzara, E. H. & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *Leadership Quarterly*, *18*(6), 606–632. doi:10.1016/j.leaqua.2007.09.006

Camerman, J., Cropanzano, R. & Vandenberghe, C. (2007). The benefits of justice for temporary workers. *Group & Organization Management*, *32*(2), 176–207. doi:10.1177/1059601102287112

Carter, E. (2008). Successful Change Management Requires More Than Change Management. *The Journal for Quality and Participation*, *31*(1), 20–23. Retrieved from http://ezproxy.library. capella.edu/login?url=http://search.ebscohost.com.library.capella.edu/login.aspx?direct= true%7B%5C&%7Ddb=aph%7B%5C&%7DAN=32541207%7B%5C&%7Dsite=ehost-live%7B%5C&%7Dscope=site

Cropanzano, R. & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, *31*(6), 874–900. doi:10.1177/0149206305279602

Devos, G. [G.], Vanderheyden, K. & Broek van den, H. (2002). A framework for assessing commitment to change: Process and context variables of organizational change. *Leuven: Vlerick Leuven Gent Management School*.

Devos, G. [Geert], Buelens, M. & Bouckenooghe, D. (2007). Contribution of Content, Context, and Process to Understanding Openness to Organizational Change: Two Experimental Simulation Studies. *The Journal of Social Psychology*, *147*(6), 607–630. doi:10.3200/SOCP.147. 6.607-630

Dirks, K. T. & Ferrin, D. L. (2001). The Role of Trust in Organizational Settings. *Organization Science*, *12*(4), 450–467. doi:10.1287/orsc.12.4.450.10640. arXiv: arXiv:1011.1669v3

Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L. & Rhoades, L. (2002). Perceived supervisor support: contributions to perceived organizational support and employee retention. *The Journal of applied psychology*, *87*(3), 565–573. doi:10.1037/0021-9010.87.3.565

Ertürk, A. (2008). A trustfffdfffdfffdbased approach to promote employees' openness to organizational change in Turkey. *International Journal of Manpower*, *29*(5), 462–483. doi:10.1108/ 01437720810888580. arXiv: arXiv:1011.1669v3

Fiori, M., Bollmann, G. & Rossier, J. (2015). Exploring the path through which career adaptability increases job satisfaction and lowers job stress: The role of affect. *Journal of Vocational Behavior*, *91*, 113–121. doi:10.1016/j.jvb.2015.08.010

Fox, A. (1974). Beyond Contract: Work, Power and Trust Relationships.

Fugate, M., Kinicki, A. J. & Prussia, G. E. (2008). Employee coping with organizational change: An examination of alternative theoretical perspectives and models. *Personnel Psychology*, *61*(1), 1–36. doi:10.1111/j.1744-6570.2008.00104.x

Galster, M., Weyns, D., Tofan, D., Michalik, B. & Avgeriou, P. (2014). Variability in Software Systems: A Systematic Literature Review. *Software Engineering, IEEE Transactions on Software Engineering*, *40*(3), 282–306. doi:10.1109/TSE.2013.56

Garvin, D. A. & Roberto, M. A. (2005). Change through persuasion. doi:10.1093/eurpub/ckr065. arXiv: 00178012

George, D. & Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference, 11.0 Update*. doi:10.1177/1073191112446654

Graham, J. W. (1986). Principled organizational dissent: A theoretical essay. *Research in organizational behavior*, *8*, 1–52.

Hesketh, B. & Neal, A. (1999). Technology and performance, The changing nature of performance: Implications for staffing, motivation, and development. -, 21–25.

Heslin, P., Carson, J. & Vandewalle, D. (2009). Practical applications of goal-setting theory to performance management. *Performance management: Putting research into action*, 704.

Hultman, K. (2006). *Values-Driven Change: Strategies and Tools for Long-Term Success* (1th). iUniverse.

Jimmieson, N. L., Terry, D. J. & Callan, V. J. (2004). A longitudinal study of employee adaptation to organizational change: the role of change-related information and change-related self-efficacy. *Journal of occupational health psychology*, *9*(1), 11–27. doi:10.1037/1076-8998.9.1.11

Karoly, P. (1993). Mechanisms of self-regulation: A systems view. *Annual review of psychology*, *44*(JANUARY 1993), 23–52. doi:10.1146/annurev.psych.44.1.23

Lawrence, P. R. (2000). How to deal with resistance to change. *Journal of Occupational and Environmental Medicine*, *12*(5), 191. doi:10.1097/00043764-197005000-00027

Lewin, K. (1958). Group decision and social change. *Social Psychology.*

Lippit, R. J. & Watson & Wesley, B. (1958). The dynamics of planned change; a comparative study of principles and techniques.

Liu, X. & Batt, R. (2010). How supervisors influence performance: A multilevel study of coaching and group management in technology-mediated services. *Personnel Psychology*, *63*(2), 265–298. doi:10.1111/j.1744-6570.2010.01170.x

Lovett, M. C. & Schunn, C. D. (1999). Task representations, strategy variability, and base-rate neglect. *Journal of Experimental Psychology: General*, *128*(2), 107–130. doi:10.1037/0096-3445.128.2.107

Lowe, K. B., Kroeck, K. G. & Sivasubramaniam, N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the mlq literature. *Leadership Quarterly*, *7*(3), 385–425. doi:10.1016/S1048-9843(96)90027-2

Madsen, S. R., Madsen, S. R., Miller, D., Miller, D., John, C. R. & John, C. R. (2005). Readiness for Organizational Change: Do Organizational Commitment and Social Relationships in the Workplace Make a Difference. *Human Resource Development Quarterly*, *16*(2), 213–233. doi:10.1002/hrdq.1134

Manz, C. C. & Sims, H. P. (1991). SuperLeadership: Beyond the myth of heroic leadership. *Organizational Dynamics*, *19*(4), 18–35. doi:10.1016/0090-2616(91)90051-A

Marsick, V. J. & Watkins, K. E. (2001). Informal and Incidental Learning. *New Directions for Adult and Continuing Education*, *2001*(89), 25. doi:10.1002/ace.5

McAllister, D. J. (1995). Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of management journal*, *38*(1), 24–59. doi:10.2307/256727

Metselaar, E., Cozijnsen, A. & Van Delft, P. (2011). *Van weerstand naar veranderingsbereidheid.* Heemstede: Holland Business Publications.

Milgram, S. (1965). Some conditions of obedience and disobedience to authority. *Human Relations*, *18*(1), 57–76. doi:10.1177/001872676501800105. arXiv: 0803973233

Modigliani, A. & Rochat, F. (1995). The role of interaction sequences and the timing of resistance in shaping obedience and defiance to authority. *Journal of Social Issues VO - 51*, *51*, 107. doi:10.1111/j.1540-4560.1995.tb01337.x

Morgan, D. E. & Zeffane, E. (2003). Employee involvement, organizational change and trust in management. *International Journal of Human Resource Management*, *14*(1), 55–76. doi:10.1080/09585190210158510

Nansubuga, F. & Munene, J. C. (2013). Adaptability to the turbulent work environment through reflection. *The Psychologist-Manager Journal*, *16*(3), 160–175. doi:10.1037/h0094959

Nohe, C., Michaelis, B., Menges, J. I., Zhang, Z. & Sonntag, K. (2013). Charisma and organizational change: A multilevel study of perceived charisma, commitment to change, and team performance. *Leadership Quarterly*, *24*(2), 378–389. doi:10.1016/j.leaqua.2013.02.001

Oreg, S. (2006). Personality, context, and resistance to organizational change. *European Journal of Work and Organizational Psychology*, *15*(January), 73–101. doi:10.1080/13594320500451247

Paulhus, D. L. (1991). Measurement and Control of Response Bias. In *Measures of personality and social psychological attitudes* (pp. 17–59). doi:10.1016/B978-0-12-590241-0.50006-X

Peterson, R. S. & Harvey, S. (2009). Leadership and conflict: Using power to manage conflict in groups for better rather than worse. *Power and Interdependence in Organizations*.

Piderit, S. K. (2000). Rethinking resistance and recongizing ambivalence: A multidimensonal view orf attitudes toward an organizational change. *The Academy of Management Review*, *25*(4), 783. doi:10.2307/259206

Ployhart, R. E. & Bliese, P. D. (2006). Individual Adaptability (I-ADAPT) Theory: Conceptualizing the Antecedents, Consequences, and Measurement of Individual Differences in Adaptability. doi:10.1016/S1479-3601(05)06001-7

Porras, J. I. & Robertson, P. J. (1992). Organizational Development: THeory, Practice, and Research. In *Handbook of industrial and organizational psychology* (pp. 719–822). doi:10.1680/udap.2010.163

Pulakos, E. D., Arad, S., Donovan, M. a. & Plamondon, K. E. (2000). Adaptability in the workplace: development of a taxonomy of adaptive performance. *The Journal of applied psychology*, *85*(4), 612–624. doi:10.1037/0021-9010.85.4.612. arXiv: arXiv:1011.1669v3

Rousseau, D. M. & Tijoriwala, S. A. (1999). What's a good reason to change? Motivated reasoning and social accounts in promoting organizational change. *Journal of Applied Psychology*, *84*(4), 514–528. doi:10.1037/0021-9010.84.4.514

Sanders, A. F. (1983). Towards a model of stress and human performance. *Acta Psychologica*, *53*(1), 61–97. doi:10.1016/0001-6918(83)90016-1

Savickas, M. L. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *The Career Development Quarterly*, *45*(3), 247–259. doi:10.1002/j.2161-0045.1997.tb00469.x

Sonenshein, S. (2010). We're changing-or are we? Untangling the role of progressive, regressive, and stability narratives during strategic change implementation. *Academy of Management Journal*, *53*(3), 477–512. doi:10.5465/amj.2010.51467638. arXiv: arXiv:1011.1669v3

Stanley, D. J., Meyer, J. P. & Topolnytsky, L. (2005). Employee cynicism and resistance to organizational change. *Journal of Business and Psychology*, *19*(4), 429–459. doi:10.1007/s10869-005-4518-2

Steele, D. (2011). Appendix D: Six Stages of Client Readiness for Change. In *From therapist to coach* (pp. 187–192). doi:10.1002/9781118089965.app4

Tyler, T., Degoey, P. & Smith, H. (1996). Understanding why the justice of group procedures matters: A test of the psychological dynamics of the group-value model. *Journal of Personality and Social Psychology*, *70*(5), 913–930. doi:10.1037/0022-3514.70.5.913

Van der Ven, N. (2011). The shame of reason in organizational change: A levinassian perspective. *Issues in Business Ethics*, *32*.

Wanberg, C. & Banas, J. (2000). Predictors and outcomes of openness to changes in a reorganizing workplace. *Journal of Applied Psychology*, *85*, 132–142.

Wang, M., Zhan, Y., Mccune, E. & Truxillo, D. (2011). Understanding newcomers'adaptability and work-related outcomes: Testing the mediating roles of perceived P-E fit variables. *Personnel Psychology*, (64), 163–189. doi:10.1111/j.1744-6570.2010.01205.x.

WATSON, T. J. (1982). GROUP IDEOLOGIES AND ORGANIZATIONAL CHANGE. *Journal of Management Studies*, *19*(3), 259–275. doi:10.1111/j.1467-6486.1982.tb00108.x

Weakliem, D. L. (2006). Morale and Workplace Performance. doi:10.1177/0730888406290054

Weick, K., Weick, K., Quinn, R. & Quinn, R. (1999). Organizational change and development. *Annual Review of Psychology*, *50*, 361–86. doi:10.1146/annurev.psych.50.1.361

Wessel, J. L., Ryan, A. M. & Oswald, F. L. (2008). The relationship between objective and perceived fit with academic major, adaptability, and major-related outcomes. *Journal of Vocational Behavior*, *72*(3), 363–376. doi:10.1016/j.jvb.2007.11.003

.1 Appendix A: Descriptive statistics

Table 1: Descriptive statistics

	Frequency	Percentage(%)
Total sample size	115	100
Complete Questionnaires	87	75.65
Gender:		
Male	86	98.85
Female	1	1.15
Age (in years):		
18-25	4	4.6
26-35	12	13.8
36-45	17	19.5
46-55	24	27.6
56-65	28	32.2
≥ 66	1	1.1
Duration of employment:		
$\leq 1 year$	5	5.7
2-5 years	11	12.6
6-10 years	13	14.9
11-20 years	33	37.9
$\geq 21 year$	25	28.7
Team:		
1	15	17.2
2	16	18.4
3	22	25.3
4	17	19.5
5	17	19.5