# The New Way of Working

**A PRACTICE ORIENTED RESEARCH TO IDENTIFY THE COMPETENCIES THAT ARE NEEDED FOR A SUCCESSFUL NEW WAY OF WORKING AT ALLIANDER**



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Annemiek te Lintelo

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## A PRACTICE ORIENTED RESEARCH TO IDENTIFY THE COMPETENCIES THAT ARE NEEDED FOR A SUCCESSFUL NEW WAY OF WORKING AT ALLIANDER

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# MANAGEMENT SUMMARY

'The new way of working' (NWoW) is a concept which is often used nowadays. Organizations like Interpolis, Microsoft, Rabobank and KPN already implemented the concept of NWoW. The top management of Alliander believes in the concept of NWoW and therefore hired a program manager. Furthermore, the top management decided to rebuild several office buildings as a preparation for NWoW. In order to successfully implement NWoW, it is imperative to create a desired concept of NWoW. This research will contribute to the concept of NWoW for Alliander because it examined the competencies that are needed to meet the performance goals of NWoW in order to give an advice about the extent of NWoW within Alliander. A survey was carried out among five departments of Alliander and four departments of UMC Utrecht. This summary will mainly be about NWoW at Alliander.

The literature suggested that NWoW has four core aspects: time and place independent working, managing results, access and connectivity to knowledge, and flexible employment relationships. The extent of use of these four aspects determines the intensity of NWoW within an organization. Employees and managers within Alliander have to deal with mental changes, just like the ability to perform with NWoW. Especially the competencies that are necessary to perform successfully with NWoW. Performing successfully with NWoW can be defined as meeting the performance goals. These performance goals are work-life balance, overall productivity and commitment. The theory suggested that several employee and managerial competencies influence the relation between the intensity of NWoW and the performance goals. Employees are assumed to have competencies like empowerment, knowledge sharing among employees, and employees acceptance of IT. According to the theory the managerial competencies are individualized consideration, trust, empowerment impact, supporting employees' acceptance of IT, supporting knowledge sharing among employees, and output control.

In order to support Alliander in assessing employees and managers in their competencies regarding NWoW a survey is developed to analyze the extent of NWoW within the organization. This also means the current extent to which competencies of employees and managers are present to meet the performance goals to implement successful NWoW within Alliander. The reliability and validity of the survey is assessed by performing several statistical tests. Next, the survey is spread out among five departments of Alliander and four departments of UMC Utrecht. The reason for aggregating the data was the low sample size for managers within Alliander. The data from the survey for employees were aggregated as well. All together, the sample for this research was adequate to perform statistical tests. Unfortunately, due to a low amount of respondents of managers it was not possible to draw any statistical conclusions. The amount of respondents of employees was suitable. After statistical tests, the three competencies of employees appeared to be antecedent variables instead of moderator variables. Which means that the competencies are influencing the intensity of NWoW as well as the performance goals, in the form of an interaction effect. The interaction effect was tested for the three competencies of employees and it appeared that empowerment and knowledge sharing among employees were significant. This means that empowerment and knowledge sharing among employees positively contribute to the relation between the intensity of NWoW and the performance goals of NWoW. The results from Alliander on these two competencies are good, this means that the results are acceptable in order to start working with NWoW. Regarding the intensity of NWoW, Alliander scores rather high for both managers and employees. The dimension access and connectivity to knowledge show a notably lower result. Alliander can increase this dimension by making more IT recourses available and remove the blockades on internet to increase the use of social media.

In conclusion, there is evidence that the competencies empowerment and knowledge sharing among employees positively contribute to successfully implement NWoW within Alliander. Therefore, these two competencies need to be added into the competence profile of Alliander before the implementation of the concept of NWoW. Furthermore, Alliander must provide training to successfully inflow these two competencies. The other assumed competencies should not be forgotten because the theory indicates that the competencies are of great value regarding successful NWoW. For this reason, Alliander should anticipate by paying attention to the development of these competencies that will be in line with the concept of NWoW. Keeping in mind that the concept has not yet been implemented, the assumed competencies can play a role before, during, and after the implementation of NWoW within Alliander. Moreover, it is important that there is

clear and regular communication towards employees about NWoW. It is also essential to make use of organizational learning as a strategy to create a high quality concept of NWoW for Alliander. Organizational learning can be done in the outline of a brainstorm group.

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# PREFACE

This thesis is the last objective in my studies of Business Administration. The realization of my assignment and research project was not possible without the help and the participation of a lot of people. First of all I would like to thank Alliander and my supervisors for giving me the opportunity as well as their support. Furthermore I want to thank the people that facilitated me in my research, in particular Mardeli Monte & Petra Roza for redirecting my Alliander e-mail and their support during my internship within Alliander.

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This leaves me with nothing more to say than that I hope you will enjoy reading my thesis!

Kind regards,
Annemiek te Lintelo

# 1   INTRODUCTION

'The new way of working' (NWoW) appears to be a popular term on the workplace nowadays, just not so much in scientific literature. What is the definition of NWoW? And what role does it take within an organization? These questions will be answered in this research.  This research is performed for Alliander N.V., and is about NWoW. First the organization will be described. This introduction encloses background information and is meant to give an impression of the organization. Second, the initiative of NWoW will be given with corresponding popular literature. Third, the problem definition will be clarified with the reason for the start of this research.  After this, the research objectives, research questions and finally the research design will be considered.

## 1.1     BACKGROUND OF ALLIANDER N.V.

Alliander N.V. is a network company, located in Arnhem within the Netherlands.  Alliander N.V. is the heir of the former energy company N.V. Nuon. On June 29th, 2009 N.V. Nuon separated the commercial activities (Nuon Energy) from the network activities (Alliander). The unbundling was achieved by the transfer of all the shares of N.V. Nuon Energy from N.V. Nuon to the shareholders of N.V. Nuon. Since then, N.V. Nuon and Nuon Energy have been self-regulated companies, owned by the same shareholders. On June 30th, 2009 Alliander N.V. fused into N.V. Nuon and was renamed into Alliander N.V. The shareholders over N.V Nuon Energy sold 100% of their shares to Vattenfall AB[1]. All this together implies that Alliander is a new company but with a history of more than 100 years.

Alliander N.V. (Alliander) consists of the business units Liander, Endinet, Liandon and Alliander AG.  The total revenues of the business units for 2009 were about € 1.6 billion. An explanation of the three business units is given. The core of the group is Liander, accounting for about 85% of revenues and takes care of the gas and electricity networks in its service area. Furthermore, Liandon designs, realises and maintains the infrastructure of energy for clients. Endinet B.V. is accountable for the process, maintenance and design of the electricity and gas network in the regions of Eindhoven, Helmond en Haarlemmermeer. Alliander AG is located in Germany and involves network management and the design and maintenance of public lightning in Berlin. In appendix one, an overview of the corporate profile of Alliander is given.

## 1.2    INITIATIVE OF NWOW

In 1996 Interpolis began with an internal campaign after a huge reorganization project in 1994/1995. This campaign needed to improve Interpolis' image and make it work more customer oriented. The formation of a new, revolutionary headquarters in Tilburg was the foundation for NWoW (Bijl, 2009). Nearly every organization that is considering NWoW in the Netherlands is inspired and informed by Interpolis. Secondly, Microsoft introduced this term with Bill Gates' whitepaper (2005). The whitepaper has been the trigger for many organizations to get involved in NWoW. NWoW unfolds in a virtual organization that supports place and time unbound working and has room for flexibility and employee creativity. According to Bijl (2009), the definition of NWoW is a vision to work effectively and efficiently. Furthermore work needs to be enjoyable for the organization as well as for the employee. The vision can be realized when the employee is free to decide how he works, where he works, when he works and with whom he works (within certain limits).

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1 http://www.alliander.com/en/alliander/investors/corporate-profile/index.htm

Most of the time, the method that is used to implement NWoW is derived from the model designed by Erik Veldhoen (2005). This model consists of three major components (Bijl, 2009; Van de Haterd 2010; Veldhoen 2005):

- Technological: ICT is important in NWoW, because this technology always captures a huge element in the work process;
- Physical: Veldhoen (2005) stated that the workplace is becoming a workspace which entails a new vision on the design of space to work;
- Mental: Encloses the organization and the employee. They both need to adapt to the changes that come along with NWoW.

The virtual, physical, and mental components are inseparable from each other in the model of Veldhoen (2005). The three components are part of an integral approach where the employee is in the centre (Bijl, 2009). This research puts the focus on the mental environment because exertion of the whole model is too extensive for research. Moreover, the employee is crucial in this model and the other components support the employee to perform at their best.

This was a brief introduction of some of the popular literature regarding NWoW. Chapter two will elaborate on this introduction by defining a typology of NWoW as a result of the popular literature. The typology is necessary for the clarification of NWoW in this research because NWoW is not empirically tested in a scientific method.

## 1.3    PROBLEM DEFINITION

Alliander is in the initial phase regarding NWoW. The board of directors agreed to a long-range program. According to Alliander NWoW is a modern technology that makes it possible for knowledge workers to work independently from time and place. The office becomes a meeting place with different rooms for meetings, collaborations, assembles or to work in silence. Working arrangements can be made based on results. Alliander finds it important to start with NWoW because the society around them changes. Furthermore, Alliander desires to create a pleasant and inspiring place to work. For example, to meet each other and collaborate automatically. Alliander hired a consultancy firm to investigate the needs for employees to work with NWoW. Furthermore, Alliander believes that a new work environment is needed to implement NWoW successfully. The results of the research of the consultancy firm were the foundation for this new work environment concept that optimality supports NWoW. The concept of the new work environment encloses rebuildings of several housings. This research is being used as the starting point for the implementation of NWoW but there is not a clear vision about the interpretation of NWoW within the organization. This means that the changes that come along with NWoW have not yet been figured out. The mental component from the model from Velhoen (2005) stated that organizations and employees need to adapt to the changes that come along with NWoW. Before an organization can start with NWoW these changes need to be clarified because the changes enclose the strategy, structure and culture of an organization (Nieuwenhuis, 2003-2008). For most employees, these changes will mean a different way in working and thereby a different way in thinking how to organize work related activities. Management recognizes those differences and acknowledges that most employees need a certain extent of guidance. Pointing out employees in the right direction should improve overall efficiency and effectiveness.

The starting point of this research implies that organizations are dealing with changes (e.g. mental and skills) before, during, and after the implementation of NWoW. Employees within an organization have to deal with mental changes even as the ability to perform with NWoW. At which the ability can be described as a competence that an employee needs to perform properly in NWoW. In the literature, competencies are being widely discussed, therefore a definition is needed to understand the reason behind the phrase competence. For this research, a competence stands for knowledge, skills and abilities of an individual. [2] The competence makes it possible for an individual to successfully perform tasks.

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2  http://www.f-ektief.nl/index.php?option=com_content&view=article&id=147:talenten-en-competenties&catid=37&Itemid=74

## 1.4    RESEARCH OBJECTIVES

This study is part of an internship at Alliander. Therefore the objectives are two-sided. From the academic perspective the master thesis research needs to include scientific literature in a methodical manner and build results on those findings. Furthermore, Alliander needs a practical solution that fits within the organization. In order to accomplish both perspectives, theory is used to build a framework on which the conceptual model will be developed that support organizations in assessing employees in their competencies regarding NWoW.

It will give Alliander the opportunity to test whether the employees and managers are prepared for NWoW. The purpose of this study is the identification of the competencies that employees and managers require to meet NWoW. A questionnaire will be developed that can support organizations in maturing employees and managers in their competencies to make NWoW successful. Alliander will be used as pilot organization to obtain understanding in and need for such a questionnaire. Although such questionnaires exist, none of them are scientifically designed.  The results of this study can be used to support the long-range program of Alliander because the company can anticipate regarding the competencies of the manager and employee. The research that is performed for Alliander is also performed for UMC Utrecht, this is done by a fellow classmate. UMC Utrecht is one of the largest public healthcare centres in the Netherlands. Approximately 10,000 employees (November, 2010) strive to ensure good healthcare at all-time using keynotes like knowledge and people.

The results of this report and the outcomes of the questionnaire within Alliander and UMC Utrecht can be used as an example for organizations that want to implement NWoW. Based on the description above, the following research objectives can be formulated:

- Relate popular literature to NWoW to create a typology applicable on Dutch organizations;
- Create a theoretical framework that includes scientific and popular literature and covers the major differences between the traditional and NWoW, competencies of employees and managers within the context of NWoW;
- Develop a questionnaire that assesses employees and managers in their tasks regarding NWoW;
- Provide an analysis containing the current extent to which competencies of employees and managers are ready for NWoW in terms of strong and weak points;
- Provide management an analysis with recommendations for improving manager and employee competencies towards NWoW for Alliander.

## 1.5    RESEARCH QUESTIONS

Based on the problem definition and research objectives, the following research question can be formulated:

***Which competencies do employees and managers at Alliander need to meet the performance goals of NWoW?***

Several sub questions can be formulated to provide a complete focus:

1. What is the difference between the old way of working (OWoW) and NWoW?

2. Which competencies do employees need to meet the performance goals of NWoW?

3. Which competencies do managers need to meet the performance goals of NWoW?

4. Which steps can be taken at Alliander to (further) enhance the competencies of the employees and managers to improve the outcome of the performance goals of NWoW?

The first sub question is going to clarify the difference between the OWoW and NWoW, in order to find out whether what NWoW stands for. After this question is answered the competencies that employees and

managers need to meet the performance goals for NWoW are being defined. The last sub question encloses an advice for Alliander.

## 1.6    RESEARCH DESIGN

This research is set up from an explorative perspective. NWoW is a new and unknown area for many researchers and therefore seeks explanations. From this exploratory view, a quantitative survey is developed that investigates the relationship between the most important aspects of NWoW. This survey is the first step to scientifically explain NWoW.

In order to comprehend the survey, theory is needed on the subject of NWoW. This theory provides a conceptual research model.  The model is used for the visualization of the constructs and will be extended during the literature review.

# 2  THEORETICAL FRAMEWORK

The literature on NWoW is widespread nowadays. Unfortunately, none of this literature has a scientific foundation. First the difference between the OWoW and NWoW will be explained. This explanation is necessary for the creation of a typology of NWoW with its characteristics. The typology consists of some scientific literature that comprises elements of NWoW that are in accordance with the popular literature. All this together consolidates the term NWoW. Thirdly, the sub questions regarding employees and managerial competencies will be answered. Finally, the research model will be presented.

## 2.1  ORGANIZATIONAL DESIGN: EVOLUTION OF WORK

Answering the question '*What is the difference between the OWoW and NWoW*?'

Before the elements of both ways of working are being discussed, the history of 'work' needs to be explained. First of all work has a lot of translations, a broad view of the definition is the performance of activities that are useful for the ones that accomplish work for his or hers environment and the society (Mok, 1994). This means that everybody who wants to live needs to work. According to f (2003), work stands for carrying out tasks that offer the possibility for humans to earn money within the social and economic context in which they are established. This is a definition that is more aimed at the social environment than the definition from Mok (1994). A complicated definition is given by De Sitter (1981), according to him work is a process that is built by a range of human activities which are involved in the social environment. This definition is complicated because the explanation of work is not given. A lot of activities could be clustered underneath this definition.  A more restricted meaning of work is given by Gorz (1987), he stated that an activity that is being paid for is on the account of a third. There is more than work that is being paid for so this definition is not complete. For this paper the definition of Watson (2003) is chosen because of the similarities compared to NWoW. The focus in this definition is on the human as is the focus within NWoW, as stated in the introduction where the employee is in the centre of the approach within NWoW (Bijl, 2009). Moreover, the definition of work is necessary for the discussion about workflows later on.

Organization design and management practices have varied over time, in response to changes in the society. In the 19th century, Frederick Winslow Taylor (1911) introduced the so called 'classical management perspective' also known as scientific management. Taylor explains how a company should implement job design to make the organization successful. To use this job design, managers must simplify each task, reduce conflicts, cooperate, increase output, and develop people to their highest capabilities. Taylor believed that the organization would most benefit when employees would do their job in "one best way" (Kanigel, 1997). Furthermore, Taylorism led to enormous gains in productivity and according to Taylor (1911), this was essential for a successful organization. The foundation for modern management was formed by Henri Fayol. He defined fourteen principles of management (Wren, Bedeian & Breeze, 2002). For example, "Unity of Command'', the purpose of this principal is that every subordinate obtains orders from only one boss. Another is example is "Unity of direction", the meaning of this principle is that comparable job activities should be done in groups under one superior. The system of Fayol was a closed system management perspective that focussed on the whole organization and could only be developed from the insight of specialists. While, scientific management concentrated mainly on jobs performed on the shop floor, administrative principles covering the design and functioning of the organizations as a whole. Both approaches gave organizations basic ideas for a high productivity and in the end, a successful organization. Moreover, the principles from Fayol were a contribution to the progress of bureaucratic organizations. According to Weber (1947), bureaucracy is the most efficient system of organizing because organizations function more efficient in business and government settings. Mintzberg (1979) suggested a typology of five basic organizations structures, under which three bureaucratic configurations. For example the machine bureaucracy, this configuration was very successful in mass production based organizations. All these approaches were successful, especially during the Industrial Revolution. The hierarchy of authority and precise rules and procedures provided an effective way to prevent abuse of authority.  However, all the approaches mentioned before in this chapter failed to comply with the aspects of the human needs. Although Weber (1947) stated that bureaucracy is a threat to personal independence, the system had many advantages.

A major breakthrough took place during a series of experiments, known as the Hawthorne Studies (Roethlisberger & Dickson, 1939). These experiments led to the conclusion that positive treatment of employees improved their motivation and productivity. The results of these experiments were publications of the findings and became the foundation for further research on the studies of human relations and behavioural approaches. However, the bureaucratic approaches and hierarchal systems that were developed during the Industrial Revolution remained as approaches during the 20th century (Daft, 2007). For most organizations these ways of working worked until the end of the 20th century. Environmental challenges in combination with advances in technology, globalization, rapid social and economic changes, and the internet demand more flexible approaches to organizational design and new management perspectives (Daft, 2007). That is where Information Technology (IT) comes along. IT has become important because the world is rapidly changing and the machine bureaucracy is not working for organizations to face the challenges anymore. Global competition and uncertain environments makes working with increased formalization, hierarchy of authority and professional staff ratios difficult. Furthermore, IT has had a major change effect on the coordination of group tasks, functions, or the extent to which people have to physically meet. In former times the physical meetings were demanded from the organization for the coordination or production. The aspects of information technology can be defined as "*computers, communications, video conferencing, artificial intelligence, virtual reality, fax, cellular and wireless phones and pagers and so on*" (Lucas & Baroudi, 1994, p. 13). These aspects cannot be neglected in organization design nowadays and the consequence of these developments is that the structure of organizations needs to be changed. For example the fact that many people work in virtual teams that exceed distance, time zones, and organizational boundaries (Lipnack & Stamps, 1997). Virtual teams can be relative stable relationships or project teams changing on a regular basis within organizations, or an inter-organizational cooperation between multiple organizations. Employees within virtual teams operate either from close distance or geography dispersed at the same or a different time (Kimble, 2011). Due to the growth in information sharing capabilities and communication technologies a virtual world was created that shifted face to face collaboration to technology based collaboration. Most definitions stated that the virtual team is a kind of team relying on its technology instead of face to face collaboration to accomplish tasks. Technology is here seen as a substitute for and complementary to face to face interaction. The focus of researchers therefore shifted away from defining virtual teams as the opposite to traditional or conventional face to face teams to "virtualness" as a characteristic of teams in general. This extent of "virtualness" is influenced by the nature of the tasks, technological resources and workers' skills and capabilities (Martins, Gilson, & Maynard, 2004).

As stated before, work stands for carrying out tasks that offer the possibility for humans to earn money within the social and economic context in which they are established (Watson, 2003). To accomplish a set of tasks, coordination is needed to incorporate or connecting together different parts of an organization (Van de Ven, Delbecq, & Koenig, 1976). Build upon typologies of long-linked, intensive, and mediating technologies that characterize the workflow process (Thompson, 1967), Van de Ven et al., (1976) describe task interdependence along four different kind of workflows, starting with the most independent and ending with the most interdependent. The first one is called pooled, because tasks are performed on an individual basis and then combined into a finished product. Sequential means that output for one team member is input for another. The reciprocal workflow is categorized trough the mutual flowing of tasks between team members. The final and most interdependent type is the intensive workflow, this means that team members must diagnose, solve problems and collaborate as a team to accomplish tasks. Besides the workflows, team task requirements are distinct through task environment, external and internal coupling. These characteristics together conceptualize task complexity along a continuum ranging from low to high complexity. Less complex tasks require little collaboration, information sharing among members, and are loosely coupled to the external context. These tasks are typically defined as pooled or sequential. On the other hand, more complex tasks are tightly coupled, with synchronous collaboration and a high extent of information sharing. These tasks are typically defined as reciprocal of intensive.

The combination of characteristics that comprise workflows set constraints on the competencies of employees and managers. Furthermore, Bijl (2009) stated that not every task can be performed place and time independent. The plumber for instance still needs to fix the leak at the specific location. On the other hand, the financial administration of the same plumber can be done time and place independent.

In answer to the question 'What is the difference between the OWoW and NWoW', there are many different forms of organizational design developed through time. The major change has occurred through the introduction of IT and its possibilities. The virtual organization is the most on IT-depended form. Later on, it became clear that the difference between virtual teams and traditional teams is very vague and could be identified though the extent of virtualness (Martins et al., 2004). From our point of view, this way of reasoning makes the answer to the sub question brief. The difference between the OWoW and NWoW can be stated as the extent to which virtualness is used within an organization. A high extent of virtualness is a high extent of NWoW in the organization. So, a low extent of virtualness complies with the OWoW. It is difficult to conclude where the OWoW stops and NWoW begins. This is mostly determined by the nature of the tasks, technological capabilities and competencies of employees and managers.

## 2.2    TYPOLOGY OF NWOW

As mentioned in the introduction, this chapter will explain the typology of NWoW. During their research, Baane, Houtkamp, & Knotter (2010) examined the core aspects of NWoW. They have found four working principles that characterize NWoW when applied collectively and to a full extent. These working principles are:

1    Time and place independent working;
2    Managing results (change in management skills);
3    Access and connectivity to knowledge;
4    Flexible employment relationships.

**Time and place independent working**
Reports on flexibility, globalization, digitalization, and e-commerce are widely discussed in media nowadays. Resources are small, fast, and therefore mobile, which make time and place a relevant issue to be considered. Under these conditions, managers and employees should be able to perform their work at home, at a client's office or underway, just as well as the 'home' office. These alternatives make place no issue anymore (Vos & Van der Voordt, 2001). According to Gibson (2003) time and locational flexibility allows employees to choose the time and place that best fits their work. This dimension of flexibility offers an ideal work-life balance for employees who want to optimally fit their personal environment and work related activities (Gibson, 2003). Although time and place are no issue anymore, this does not mean that employees can't work from 9 to 5 anymore. Employees can work at the time and in the place that bests fit the situation, whether it is between 9 and 5 somewhere around the office or on a Saturday night at home (Bijl, 2009). Employees for example can schedule appointments with clients at a time where delays due to traffic jams are reduced to a minimum (Baane et al., 2010). Furthermore, the disappearance of static workplaces and the appearance of a dynamic office environment can reduce costs on housing between 30% and 40%. This automatically enhances cost savings in the reduced needed cooling capacity and heating consumption. Another important aspect within cost savings is the reduction in travel expenses and travel times by working place independent. (Bijl, 2009) Employees of KPN for example reduced the carbon dioxide emission of its cars by 29% (Van de Haterd, 2010).

The highly fluctuating and changing markets require flexible employees for the organization to maintain a competitive position.  Although home working is just as much flexible working as working somewhere in the home office, this was treated as a different issue. The research of Felstead, Jewson, & Walters (2004) showed that a loss in visibility and presence of employees had forced managers to compensate this with trust. The reciprocal moral responsibility between manager and employee should cover the absence of visibility and physical presence (Felstead, et al., 2004). Besides this, employees want to individually determine in what way they contextually perform their work. Therefore managers need to steer on output rather than on presence (Baane et al., 2010).

**Managing results**
Employees who are managed on output have more space and freedom to perform their work, because they can determine where and how the work is done. To manage these employees, a different kind of control is needed. This control shifts from a presence-oriented to an output-oriented form of control (Vos & Van der

Voordt, 2001)and requires a situational form of anticipation in which employees being granted a more personal form of guidance to the necessary extent (Baane et al., 2010). This same freedom leads to more employee satisfaction and ultimately results in better customer satisfaction, which at the end results in more employee productivity. According to Bijl (2009), a satisfied employee will treat his customers in a better way. Bijl (2009) proves his reasoning with examples from Interpolis and Microsoft. Employee satisfaction is significantly improved, respectively from a 6,1 in 1996 to an 8,4 in 2009 in case of Interpolis and from a 5,5 in 2005 to an 8,3 in 2009 in case of Microsoft. As said before, time spent on certain work related activities is no real concern anymore, what matters is the result. This requires a vision of managers in which they manage at a distance and inspire and coach on quality and on result (Baane et al., 2010). Bijl (2009) adds that an employee should be able to function optimally, thus being more effective and therefore being granted enough freedom, challenge, and responsibility. An important effect of additional freedom and responsibility is an increase in organizational commitment (Bijl, 2009). Depending on the situation this requires that the manager acts as a coach, mentor, or even a service provider.

Looking back in history the leadership skills of managers can be linked to the theory Y of McGregor (1960). McGregor (1960) stated that in theory Y it's assumed that workers are ambitious and self-motivated. When given the right conditions, workers like to do well at work. This satisfaction of doing a good job is a strong motivation. Baane et al. (2010) suggests that more employee autonomy will lead to better insight and more professionalism. Employees therefore will be more productive, because their involvement in the decision-making process is enhanced. Furthermore, autonomy increases employee interaction and flattens the organization. This involves making better use of knowledge in the organization (Baane et al., 2010).

**Access and connectivity to knowledge**
Knowledge can be distinct in two aspects: explicit and tacit. Explicit describes the knowledge that is easily transmittable in a formal, systematic way whereas tacit knowledge is characterized trough the skills, attitudes and experience of an individual. Tacit knowledge therefore is more difficult to write down and can be shared through extensive communication resulting in mutual understanding (Nonaka, 1994). Baane et al. (2010) supports this way of thinking and stated that (virtual) collaboration, brainstorming and co-creation as a part of knowledge sharing is required to stimulate creativity. Creativity and innovation as well are developed through autonomous genesis of (informal) networks and collaboratively oriented partnerships (Baane et al., 2010). Access means being able to gain knowledge anywhere and anytime. Hardcopy knowledge is a source that has its limitations in accessibility and needs to be physically stored. Digital knowledge on the other hand has availability and therefore allows employees to connect anywhere and anytime. Furthermore, employees can work faster, more efficient, and more effective (Bijl, 2007) which results in cost savings, because more can be achieved with less employees (Baane et al., 2010).

To realize this access and connectivity Web 2.0 applications like social media (LinkedIn, YouTube, Twitter, & Facebook) function as an important enabler for NWoW. A precursor of LinkedIn is Philips' Yellow page system that allows employees to find individuals with specific knowledge, projects and résumés. These technologies are the major driver in enhancing collaboration and knowledge sharing (Baane et al., 2010).

**Flexible employment relationships**
NWoW expects a mature relationship between employee and employer in which mutual agreement and understanding feeds collaboration. The "traditional" working conditions are not natural anymore. Working conditions are to be flexibly applied to fit a personally desired work-life balance (Baane, 2010). Furthermore, young workers choose their employer based on flexible working arrangements. Companies therefore need to invest in order to be attractive to the future workforce (Deusen, James, Gill, & McKechnie, 2008), but also for today's young worker (Bijl, 2009). Flexible working arrangements thus shift from a preference to a necessity (Deusen, et al, 2008). Most exposed organizations in the research of Baane et al. (2010) allow employees to choose their package of working conditions and fit it more or less to their personal preferences.

ABN Amro for example developed an online application that allows employees to spend the total value of their working conditions in the way that best fits their preferences. These preferences can be, among others, educationally oriented (education and seminars), days off, (parental leave, child day-care, and flexible working

times), and special rewards (profit-sharing plans and share plans). Employees can change these preferences on a daily basis and observe real-time the financial effects of these alterations. Besides attractiveness to employees this also cuts administrative costs (Baane et al., 2010).

The four working principles that characterize NWoW will be further mentioned as the intensity of NWoW. This means to which extent the concept of NWoW is being applied. When an organization collectively and to a full extent applies NWoW, this will lead to increase of various performance goals.

## 2.3 PERFORMANCE GOALS NWOW

The performance goals as defined in the typology will be further explained in this section.

**Work-life balance**
Hill, Ferris & Märtinson (2003) investigated the effects of work-life balance on virtual, traditional, and home offices. The outcome showed that virtual workers were significantly less work-life balanced than home or traditional office workers. A possible reason is the lack of physical boundaries. Virtual workers may encounter difficulties distinguishing whether they are at work or at home. Furthermore, the best working hours are not always between 9 and 5. For instance, a strategic idea might pop-up in the weekend and an important report could be better written in the evening rather than during working hours accompanied with all its interruptions. Similarly, personal/family hours don't have to occur outside normal working hours. Scheduling work at the best time, regardless of the hour, could create a better work-life balance (Hill et al., 2003). From the typology NWoW it becomes clear that work-life balance is seen as an important performance goal in which employees are granted freedom and flexibility to fit their ideal situation. Two important aspects here are work and family. Conflicts between these two can be seen from a family and a work related perspective. This interference occurs when (a) time dedicated, (b) strain from participation, and (c) specific behaviours to the requirements of family makes it difficult to fulfil needs of work and vice versa (Baltes & Heydens-Gahir, 2003). In their research, Baltes & Heydens-Gadir (2003) found that there is a relation between behaviours specified by a life management strategy entitled selection, optimization, and compensation (SOC) and work–family conflict. Their results suggest that the use of SOC behaviours in work as well as family domain reduces family and work stressors and subsequently reduces work-family conflicts.

According to Clutterbuck (2003) work-life balance is the condition of an individual in which he or she manages potential conflicts regarding time and energy in order to obtain self-fulfilment otherwise seen as the absence of unacceptable levels of conflict between work and live demands (Greenblatt, 2002). From a reciprocity perspective, exchange theory states that individuals will return what they have or perceived to have received. A greater work-life conflict implies a feeling that the organization is treating not well enough, which results in less commitment (Siegel et al., 2005).

**Overall productivity**
In the human capital theory, people have knowledge, skills and abilities (KSAs) that are a value to an organization. Because of this value, the KSAs need to be increased by means of investing, for example through HRM. These investments involve direct and indirect opportunities and costs and are only justified if future returns will be produced in the form of increased worker productivity and overall organizational performance (De Winne & Sels, 2003). As stated in the typology, employee productivity is an indicator whether NWoW is effective. Therefore, productivity has been chosen as a performance goal for NWoW. According to Neufeld & Fang (2005) individual productivity is the effectiveness which an employee applies his or her talents and skills to perform work, using available materials within a specific time. Furthermore, the individual productivity has been identified as an important individual outcome for example telecommuters (Neufeld & Fang, 2005). Neufeld & Fang (2005) also stated that some researchers have reported that increased productivity may occur due to reduced work interruptions and use of optimally efficient hours, which is in line with NWoW. In this research, employee productivity is defined as an employees' belief about its effectiveness, self-efficacy and work quality (Staples, Hulland & Higgins, 1998).

**Commitment**

Commitment is the psychological status that relates an individual to an organization (Van Vuuren, 2006). It is seen as the relative strength to which an individual identifies him or herself with and is involved within an organization (Mowday, Steers, & Porter, 1979). Van Vuuren (2006) clarifies this description by adding that there is a distinction in focus of commitment. Employees can be committed to an organization or to a profession. When employees are committed to a profession, the organization is not important as long as the work complies with the desired profession. This distinction complies with the Bergman et al. (2000)'s distinction between profession commitment and organizational commitment. Commitment can be split into affective and normative commitment. Affective commitment is stated as the connection with and dedication of an individual to an organization (Van Vuuren, 2006), thus an affective link between individual and organization (Pratt, 1998). The effect of affective commitment is an employee's desire to participate in realizing organizational goals and thus acting in the best interest of the organization (De Ridder, 2004). Normative commitment represents the obligation to maintain active in a specific organization (Meyer, Stanley, Herscovitch, & Tolponytski, 2002). An employee can for instance feel obligated to repay an internal education by maintaining within the organization or be influenced by family norms outside the organization. According to Meyer & Allen (1991), commitment can be split up into affective, continuance, and normative commitment, which together represents Allen and Meyer's three component model. This third form of commitment states that employees stay because leaving would cost more than it gains. Liability and relevance of this form of commitment is doubtable (Van Vuuren, 2006). Continuance commitment doesn't relate individuals with an organization and therefore is placed outside of this research's scope.

To provide a clear overview of the characteristics of NWoW in relation to the performance goals, as explained in this chapter, a schematic reproduction is presented below (figure 1).



Intensity of NWoW:

- Time and place independent working
- Managing results
- Access and connectivity to knowledge
- Flexible employment relationship

Leads to

Performance goals:

- Work-life balance
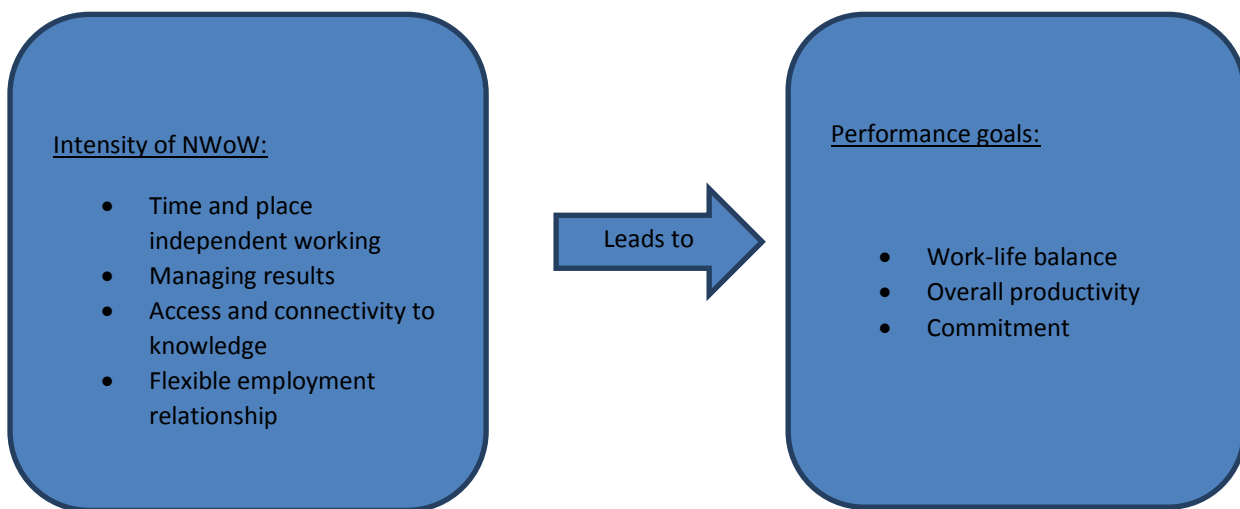- Overall productivity
- Commitment

FIGURE 1: PERFORMANCE GOALS OF NWOW

## 2.4    DETERMINING EMPLOYEES' COMPETENCIES

This section answers the sub question: *Which competencies do employees need to meet the performance goals of NWoW?*

Many organizations have responded to the competitive pressure by downsizing, restructuring, and transformation (Bergmann, Lester, De Meuse, & Grahn, 2000). Thus, security of employee loyalty through job security guarantees is history. Many employees therefore feel victimized through broken promises. Modern organizations therefore face the challenge of committing employees in the current business environment. In today's working environment employees encounter more uncertainty in their daily activities, and with no on-going employment assurance, employees raise their expectations in other fields. Among others, this includes pleasant working conditions, training and development opportunities, and balance between work and employees' commitment outside the workplace (Bergmann et al., 2000). Section 2.1 described the performance goals of NWoW. The next section will elaborate on these findings by examining the competencies required to meet those performance goals. To repeat once more, the performance goals are: work-life balance, commitment, and overall productivity.

The exchange theory, built upon the reciprocity principle, states that individuals will give what they perceive to have been granted, positively as well as negatively. A major work-life conflict will result in a major perceived feeling that the organization doesn't treat its employees well (Siegel, Brockner, Fishman, Post, & Garden, 2005). As a result, employees become less committed to their employers which manifests – among others - in increased absenteeism, and reduced effort and performance (Mowday, Porter, & Steers, 1982).

According to Bass & Avolio (1994) and Avolio (1999), organizational commitment is influenced by encouraging employees to think using new approaches, involvement in the decision-making processes, inspiring loyalty, and recognizing and appreciating the variety of needs to develop personal potential. Within the transformational leadership theory the role of empowerment is emphasized as a core utility of building to the organization's objectives (Avolio, 1999; Bass, 1999). Groves & Crooker (1995) stated in their research that employers who are offered benefits that are family responsive, seem more committed to the organization and have less interest in looking for a new job regardless whether those benefits will be used or not. Similarly, Thompson, Beauvais, & Lyness (1999) stated that having benefits available is related to lower work-life conflict, less intention to abandon the organization, and a higher extent of affective commitment.

An organization's ability to integrate and apply knowledge of organizational members is important to create and sustain competitive advantage. The challenge of knowledge management is rather emphasized on capture and integration than on creation. Thus, knowledge has few organizational value when it is not shared (Grant, 1996). Furthermore, the use of knowledge of employees to enable other employees to make use of it results in more work effectiveness and productivity. The information technology present in organizations nowadays has expanded a lot (Venkatesh, Morris, Davis, & Davis, 2003). Following the knowledge sharing needs of NWoW, employees have to comprehend access and connectivity to knowledge by using Web 2.0 applications. For technologies to increase productivity it is important that they are accepted by employees (Venkatesh et al., 2003).

Three competencies can now be distinguished: empowerment, knowledge sharing and employee acceptance of IT. These competencies will be explained in the next section.

### 2.4.1    COMPETENCIES OF EMPLOYEES

**Empowerment**
Empowerment is a concept that consists of four dimensions: meaning, competence, self-determination and impact (Spreitzer, 1995). Impact will be explained within the managerial practises; therefore the focus will be on meaning, competence, and self-determination. Meaning can be defined as the value of a work goal or principle in relation to the ideas or standards from an individual (Thomas & Velthouse, 1990). Besides this, meaning entails a fit between the requirements of a work role and beliefs, values, and behaviours (Brief &

Nord, 1990; Hackman & Oldham, 1980). Previous research also linked empowerment meaning to work satisfaction (Hackman & Oldham, 1980; Spreitzer et al., 1997). When work is more meaningful to an employee it will show an increase in employee satisfaction, which results in a higher extent of commitment. The empowerment competence is often directed to as sell-efficacy, which means the degree to which the employee beliefs he or she can competently perform tasks or activities when he or she tries (Thomas & Velthouse, 1990). The employees who feel competent about their work will be more satisfied with the work and this directs to positive employee satisfaction. Bijl (2009) stated that employee satisfaction will result in enhanced employee productivity. Self-determination refers to skilfulness of behaviour, the sense of an individual who has a choice in initiating and regulating actions (Deci, Connell & Ryan, 1989). The reflection of self-determination is the autonomy in the initiation and continuation of work behaviour and processes. Examples are decision-making about work methods and effort (Bell & Staw, 1989; Spector; 1986). Thompson & Prottas (2005) stated that employees with a higher amount of autonomy, defined as the way in which the job will be performed, are better able to manage their work-family balance. In NWoW employees need to be empowered through job autonomy. Spreitzer (1995) refers to this as self-determination. The following hypotheses are formulated.

*Hypothesis 1a: Empowerment positively influences the relation between the intensity of NWoW and commitment.*

*Hypothesis 1b: Empowerment positively influences the between the intensity of NWoW and overall productivity.*

*Hypothesis 1c: Empowerment positively influences the relation between the intensity of NWoW and work-life balance.*

**Knowledge sharing among employees**
Knowledge sharing is achieved through the process of acquiring, organizing, and communicating knowledge. The purpose is for employees to share knowledge to enable other employees to make use of this knowledge and be more productive and effective in their work (Alavi & Leidner, 1999). Knowledge is not a commodity to be passed freely. To learn from each other, thus to share knowledge, it is needed to reconstruct knowledge. In other words, it takes knowledge to acquire knowledge and therefore to share knowledge. The process of knowledge sharing is made up from two sub processes: externalization and internalization. The process of externalization occurs where those that possess knowledge share with others. Those others represent the process of internalization. The process of internalization occurs by those that seek to acquire knowledge (Hendriks, 1999).

Knowledge management (KM) systems are a type of information systems used to support the process of knowledge creation, storage, transfer, and application (Alavi & Leidner, 2001). Two models of KM systems can be distinguished: The repository model and the network model. The repository model, which corresponds with the codification approach from Hanssen, Nohria, & Tierney (1999), which emphasizes codification and storage of explicit knowledge to enable reuse. Second, the network model, corresponding with Hanssen et al. (1999) personalization approach, emphasizes the linkage among individuals enabling tacit knowledge sharing. An important technological component is a directory with the location of expertise. Thus, knowing which person possesses certain knowledge (Kankanhalli, Tan, & Wei, 2005). From NWoW perspective this means that, with digitalized knowledge employees have access to explicit knowledge anywhere and anytime. Furthermore, yellow page systems allow employees to gather tacit knowledge from other employees or supervisors. In NWoW employees need to share knowledge excessively in order to meet the standards of the access and connectivity to knowledge (Baane, 2010). Therefore we hypothesize that sharing knowledge among employees positively contributes to the relation between the intensity of NWoW and the performance goals of NWoW.

*Hypothesis 2: Knowledge sharing among employees positively influences the relation between the intensity of NWoW and overall productivity.*

**Employee acceptance of IT**

Today's workplace is becoming more flexible and virtual. The need for face to face collaboration between managers and subordinates can be conducted by means of IT (Bailey & Kurland, 2002; Garrett & Danziger, 2007; Belanger & Allport, 2008). The definition of technology is given in chapter 2.1. Moreover, as stated before, the structure of organizations needs to be changed in order to anticipate on the aspects of technology. For example, the lack of user acceptance when new information systems are implemented. The goal of new IT is to improve the job performance but if employees within an organization do not accept the IT there will not be an increase in job performance (Davis, 1993). Davis (1993) distinguished perceived usefulness and perceived ease of use. Perceived ease of use is the extent to which employees believe that using a certain system enhances their productivity. Perceived ease of use on the other hand defines the extent to which employees are able to easily adopt the new technology without a lot of effort. In NWoW employees need to accept new IT resources in order to improve job performance. Therefore we hypothesize that employee acceptance of IT positively contributes to the relation between the intensity of NWoW and the performance goals of NWoW.

*Hypothesis 3: Employee acceptance of IT positively influences the relation between the intensity of NWoW and overall productivity.*

In answer to the question "*Which competencies do employees need to meet the performance goals of NWoW?*" it can be stated that the competencies empowerment, knowledge sharing, and user acceptance of IT should be present among employees to cope with the performance goals of NWoW. These three competencies are needed to a certain extent for organizations to better handle with the challenges of NWoW. Furthermore, it is expected that all competencies positively influence the relation between the intensity of NWoW and the performance goals of NWoW as stated in chapter 2.3.

## 2.5    DETERMINING COMPETENCIES OF MANAGERS

In this section the sub question '*Which competencies do managers need to meet the performance goals of NWoW*?*' will be answered.

The nature of work in nowadays organizations is changing. The corporate activities from organizations are more global, increase more competition and there is a change from production to knowledge-based work environments (Townsend, DeMarie, & Hendrickson, 1998). Furthermore, Drucker (2000) stated that the major earning of management in the 20$^{th}$ century is the improvement in productivity of labour workers. The challenge for the 21st century is the same improvement in productivity for knowledge workers.

In response to these changes, organizational design, structures and processes need to become more flexible and adaptive (Bell & Kozlowski, 2002). This also means that the role of leadership needs to adapt to these changes because leadership is widely recognized as a critical success factor for the development of new services (Bass & Avolio, 1994; Howell & Avolio, 1992, Yukl, 2002). According to Yukl (2002) leaders have a strong influence on employees' work behaviours.

Leadership is extensively discussed in the literature and has many definitions. Most definitions of leadership describe that it involves a process whereby intended influence is applied to one person over other people to lead, structure and facilitate activities and relationships in a group or organization. Moreover, definitions vary whether leadership is primarily descriptive or normative in nature as well as in their relative emphasis on behavioural styles (Den Hartog & Koopman, 2001). Table one presents several definitions of leadership.

| *Defining leadership: definitions of leadership* |
| --- |
| Leadership is the influential increment over and above mechanical compliance with the routine directives of the organization (Katz & Kahn, 1978). |
| Leadership is the process of influencing the activities of an organized group toward goal achievement (Rauch & Behling, 1984). |
| Leadership is defined as the process of influencing others to understand and agree about what needs to be done and how it can be done effectively. Furthermore, the process of facilitating individual and collective efforts to achieve the shared objectives (Yukl, 2002). |
| Leadership is defined in terms of a process of social influence whereby a leader steers members of a group towards a goal (Bryman, 1992). |
| Leadership is the ability of an individual to motivate others to forego self-interest in the interest of a collective vision, and to contribute to the attainment of that vision and to the collective by making significant personal self-sacrifices over and above the call of duty, willingly (Shamir, House & Arthur, 1993). |

TABLE 1: DEFINING LEADERSHIP (DEN HARTOG & KOOPMAN, 2001)

As stated before, leadership is widely regarded in the literature. There appears to be a discussion about what comprises good leadership. Furthermore, Tichy & Devanna (1986) and Kotter (1990) illustrate that there is a difference between leadership and management. According to these authors, management is concerned with maintaining the existing organization by setting goals, organizing and monitoring while leadership is more concerned with change by developing a vision and communicating it to co-workers/employees. In addition according to Bennis & Nanus (1985) management is about doing the things right and leadership is about doing the right things. It can be stated that leading and managing are distinct processes but it cannot be assumed that leaders and managers are different people (Bass, 1990; Kotter, 1988, Mintzberg, 1973). In the end, leadership and management are related to behaviour that could improve or reduce the behaviour of employees. For this paper, it is important that the competencies are being recognized that managers need for NWoW. To avoid confusion, we consistently speak of leadership and leaders but it includes managerial practices as well.

According to Kotter (1990), managers are in the best position to provide the leadership that is required to ensure their work to be successful.

## 2.5.1   LEADERSHIP STYLES

Early work on leadership suggested that some styles were superior to others (Hayes, 2010). Lewin, Lippitt, & White (1939) did research about the effect of leadership styles in classroom situations and concluded that democratic leadership was more effective than autocratic leadership. Years later, Fleishman, Harris, & Burtt (1955) stated that there are two dimensions of leader behaviour that seems to influence the performance. The study was focused on the extent to which supervisors had relationships that were described by mutual trust, respect for subordinates, and their selflessness about their feelings. As well as to which extent the leader is intending to define the work for the subordinate.  The findings of this study suggested that effective leadership is high when leaders focus on selflessness and structure. Research of Blake & Mouton (1964) concluded that team management is the most effective leadership style.

There were four main trends in leadership theory and research throughout the years.  A historical overview with the main trends is described in table 2. The different trends of leadership do not imply that another trend is completely deserted, rather a shift in emphasis occurred (Bryman, 1992).

| Trends in leadership theory | |
|---|---|
| Up to late 1940s | Leaders are born; leadership as an innate ability |
| Late 1940s to late 1960 | What do they do; effectiveness has to do with how the leader behaves |
| Late 1960s to early 1980s | It all depends; effectiveness of leadership is affected by the situation/context |
| Nowadays | Leaders convince through vision and inspire loyalty and emotional attachment |

TABLE 2: TRENDS IN LEADERSHIP THEORY (ADAPTED FROM BRYMAN, 1992)

The emphasis of this study is on NWoW so that is why the new leadership approach is chosen. This approach, is the trend 'nowadays', as stated in table 2. In the next section, the new leadership approach will be explained in order to give a complete view of the competencies that are needed to successfully perform tasks.

## 2.5.2   NEW LEADERSHIP APPROACH

Based on the work from Bass (1985) and Burns (1978), Bryman (1992) distinguished a more traditional theory of leadership and the new-genre leadership theory. According to Bryman (1992) the new leadership approach involves developing and articulating an exciting vision of future opportunities. Terms to describe this approach are charismatic, transforming, inspirational, visionary and value-based leadership. Together, these theories try to explain how certain leaders are able to accomplish extraordinary levels of subordinate performance. Davis (2003) stated that the term new leadership implies movement, leading the organization or some part of it in a new direction, solving problems, being creative, initiating new programs, building organizational structures, and improving quality. Den Hartog & Koopman (2001) also stated that regardless of the broad terms that are used, there seem to be more similarities than differences between the views of leadership. In literature the terms transformational and charismatic are the most often used terms referring to this type of leadership (Hunt, 1999). An important distinction has to be made between transactional and transformational leadership. Transactional leadership mostly referred to traditional leadership that focuses on goal setting, direction, support, reinforcement and relatively less on the performance outcome (Bryman, 1992). While, charismatic and transformational leadership are positively related with e.g. job satisfaction, motivation, self-confidence and performance (Avolio, Walumbwa & Weber, 2009). According to Bass (1997) there are four dimensions within transformational leadership (1) charisma (2) inspirational motivation (3) intellectual stimulation and (4) individualized consideration. Charismatic leadership is build up from transformational leadership (Burns, 1978), especially the ability to motivate and empower others. According to Avolio et al. (2009) charismatic leadership emphasizes charismatic symbolic leader behaviour, visionary inspiring, emotional feelings, ideological and more values, individualized attention and intellectual stimulation. Bolden (2004) points out that the popularity of charismatic leadership is a result of a solution for the demoralizing effects of organizational restructuring, competition and redundancies. The charismatic leader can be seen as someone who can rebuild morale and

offer a positive vision of the future. Together, the literature about the new leadership approach attempts to explain how certain leaders are able to achieve extraordinary levels of subordinate's performance. Furthermore, to be effective, leaders must be able to motivate and direct subordinates towards performance goals, mission or vision and be able to maintain stability and group harmony (Yukl, 2002).

### 2.5.3    PERFORMANCE GOALS VS MANAGERIAL COMPETENCIES

As stated before, the aim of this paper is to find competencies that are needed to meet the performance goals of NWoW. To recapitulate, the performance goals of NWoW are work-life balance, commitment and productivity.

Based on the ideas of the new leadership approach, Bryman, Stephens & à Campo (1996) derived several behavioural dimensions. According to Bryman et al. (1996) these dimensions are typically new leadership findings. Bass (1997) confirms four of the dimensions within the transformational leadership theory. One of these dimensions is individualized consideration, which means understanding and sharing others' concerns and developmental needs and treating each individual uniquely. For example, linking individual needs to the organization's mission. While, congruence between an individual and organizational needs is crucial to the transformational leader's success (Avolio & Bass, 2004). Furthermore, organizational commitment is influenced by encouraging employees to think about using new approaches, involvement in the decision-making processes, inspiring loyalty, and recognizing and appreciating the variety of needs to develop personal potential (Avolio, 1999; Bass, 1999).

Within the transformational leadership theory the role of empowerment is emphasized as a core utility of building commitment to the organization's objectives.  The significance of empowerment can be determined to the fact that the New Leadership approach is associated with empowerment of subordinates rather than power retention on the part of the leader (Bryman, 1992, p. 111). For example empowerment impact is positively related to the effectiveness of a subordinate. Another important enabler for effective leadership is trust (Kouzes & Posner, 1993). Since trust is a component of the creditability of a manager. Bennis & Nanus (1985) argue that trust 'is the emotional glue that binds followers and leaders together' (1985, p. 153). When leaders trust their followers, followers trust their leaders. Yukl (1989b) stated that followers feel trust and respect towards the leader, and that they are motivated to go beyond the expectations.

In chapter 2.4 an explanation is given for the competencies knowledge sharing and employee acceptance of IT. These two competencies are not only for the employee but also for the manager, in the way of supporting the employees in optimal use of knowledge sharing and IT, given that managers support their subordinates towards a goal (Bryman, 1992; Rauch & Behling, 1984).  As stated in the typology, the research of Felstead et al. (2004) showed that a loss in visibility and presence of employees had forced managers to compensate this with trust. Moreover, the type of control needs fit with the loss in visibility and presence, so a more output-oriented form of control is needed (Vos & Van der Voordt, 2001). For employees this form of control is necessary in NWoW since the fact that they can decide where, whenever and however the work is performed. This dimension of flexibility offers an ideal work-life balance for employees who want to optimally fit their personal environment and work related activities (Gibson, 2003).

In the next section the six competencies will be explained with hypotheses regarding the relations between the competencies and the relation between the intensity of NWoW and the performance goals of NWoW. These hypotheses are based on theoretical findings by others researchers.

### 2.5.4    MANAGERIAL COMPETENCIES

**Individualized consideration**
Individualized consideration refers to leaders who deal with their subordinates as individuals, consider their individual desires, abilities and aspirations, listen carefully, improve their development, advice, teach and coach (Bass, 1997). A less precise definition of individualized consideration is given by Judge & Piccolo (2004).

According to them, individualized consideration is the degree to which the leader attends to the needs of their subordinates, act like a mentor or coach and listen to the concerns of their subordinates. Bryman et al. (1996) declare that a leader should deal with their subordinates as individuals. It can be stated that individualized consideration focuses on personal growth and recognition of their subordinates. Individualized consideration is one of the four dimensions within transformational leadership (Bass, 1997). Only this dimension is chosen because of the fact that the focus is on the subordinate and achieving their fullest potential (Yammario & Bass, 1990b). In NWoW the employees are in the centre of the organization (Bijl, 2009) and the manager can significantly contribute on the development of their employees. Therefore we hypothesize that managers who have individualized consideration contribute to the relation between the intensity of NWoW and commitment.

*Hypothesis 4 - Individualized consideration positively influences the relation between the intensity of NWoW and commitment*

**Trust**
Trust can be seen as the extent to which an individual is willing to have good intentions and a confidence in words and actions of other people (Cook & Wall, 1980). According to Bryman et al. (1996) creating trust means that the leader should consistently seeks to create a climate of trust that is the social knot between a trustor and trustee (Mayer, Davis, & Schoorman, 1995). These relations are often referring to the attitude of the trustor towards the trustee. Furthermore, trust is a predictor of job satisfaction. Driscoll (1978) found that trust in decision makers increased job satisfaction. In another study, Lagace (1991) found that reciprocal trust increased the job satisfaction. Rich (1997) studied the relationship between trust, job satisfaction and performance and concluded that trust in the manager is positive related to performance and job satisfaction of the subordinates. In NWoW, the managers need to trust their subordinates because of the time and place independent working. Felstead et al. (2004) stated that managers need to trust their subordinates in order to compensate the loss in visibility and presence. Therefore we hypothesize that managers who have trust in their subordinates contribute to the relation between the intensity of NWoW and overall productivity.

*Hypothesis 5 - Trust positively influences the relation between the intensity of NWoW and overall productivity*

**Empowerment impact**
Since the eighties empowerment is widely conversed in the literature of Human Resource Management. There are many definitions of empowerment. For example, according to Bryman et al. (1996), empowerment is the strategy of a leader that is regarded to provide subordinates with power to perform their work completely.

Empowerment is a concept that consists of four dimensions: meaning, competence, self-determination and impact (Spreitzer, 1995). The first three dimensions are assigned to competencies of employees (see chapter 2.4.1). Empowerment impact is the degree to which an individual can have control over the strategic, administrative or operating results at work (Ashforth, 1989). This dimension of empowerment is positively related to effectiveness. Managers who perceive can make an impact in the organization with their work will be more likely to work harder. Roueche, Baker & Rose (1989) found that leaders are most effective when they empower others. Therefore we hypothesize that managers who empower their subordinates contribute to the relation between the intensity of NWoW and overall productivity.

*Hypothesis 6 - Empowerment impact positively influences the relation between the intensity of NWoW and overall* productivity.

**Supporting employees acceptance of IT**
Today's workplace is becoming more flexible and virtual. The need for face to face collaboration between managers and subordinates can be conducted by means of IT (Bailey & Kurland, 2002; Garrett & Danziger, 2007; Belanger & Allport, 2008).The definition of technology is given in chapter 2.1, moreover as stated before the structure of organizations needs to be changed in order to anticipate on the aspects of technology. According to Daft (2007) the advances in technology demand a more flexible approach to new management perspectives but there are some problems. For example the lack of user acceptance when new information systems are implemented (Davis, 1993). The goal of new IT is to improve the job performance but if employees within an organization do not accept the IT there will not be an increase in job performance. Another problem

is that with technology the impact on the corporate performance is difficult to find. This is the so called IT productivity paradox (Brynjolfsson, 1993). The paradox refers to the lack of the relationship between IT investments and corporate performance. The research of Brynjolfsson & Hitt (1998) and Dedrick, Gurbaxani & Kraemer (2003) showed that an increase in IT productivity was only achieved when the IT investments were accompanied by investments in organizational change, training and work redesign. Nevertheless, managers have to comprehend access and connectivity Web 2.0 applications because it is an important enabler for NWoW as stated in the typology (chapter 2.2). Therefore we hypothesize that managers who support their subordinates to accept the use of IT contribute to the relation between the intensity of NWoW and productivity.

*Hypothesis 7 - Supporting employee's acceptance of IT positively influences the relation between the intensity of NWoW and overall productivity.*

**Supporting knowledge sharing among employees**
Knowledge sharing is achieved through the process of acquiring, organizing, and communicating knowledge. The purpose is for employees to share knowledge to enable other employees to make use of this knowledge and be more productive and effective in their work (Alavi & Leidner, 1999). To achieve this, managers need to support their employees to share knowledge. As stated before, knowledge is not a commodity to be passed freely. To learn from each other, thus to share knowledge it is needed to reconstruct knowledge. In other words, it takes knowledge to acquire knowledge and therefore to share knowledge. This means that managers have to share their knowledge in order to support their employees with knowledge sharing. In NWoW managers need to support their subordinates to share knowledge because of the access and connectivity to knowledge (Baane, 2010). Therefore we hypothesize that managers who support their subordinates to share knowledge contribute to relation between the intensity of NWoW and overall productivity.

*Hypothesis 8 - Supporting knowledge sharing among employees positively influences the relation between the intensity of NWoW and overall productivity.*

**Output control**
The competence output control (e.g. managing at distance) is derived from the dimension time and place independent working and consequently managing results (Baane, 2010). As stated in the typology, the form of control needs to be changed for a successful NWoW. This control shifts from a control of staff presence to an output-oriented form of control (Vos & Van der Voordt, 2001). Ouchi (1978) stated that in organizational evaluation there are two kinds of phenomena which can be monitored: behaviour and outputs which result from behaviour. A manager can observe his or her subordinates and count the number of times that they engage in any particular behaviour. Otherwise, the manager may be able to measure performance less obstructively by monitoring the aftereffects of behaviour, which are the outputs of the productive process (Ouchi, 1978). Thus, the manager is able to monitor behaviour or the aftereffects of behaviour but it is the question whether evaluation is possible. The measures of behaviour may be used for evaluation only if the technology is sufficiently understood that behaviour is recognized. If the behaviour is not known then the observations of the actual behaviour are in no use for control purposes. As for the aftereffects of behaviour, these can be evaluated if there are valid representations of goal achievements. If these observable outputs are representative of the desired objectives, output control is possible (Ouchi, 1978). Since there is less need for face-to-face interaction between managers and subordinates, communication can be conducted through means of IT (Bailey & Kurland, 2002; Garrett & Danziger, 2007; Belanger & Allport, 2008) which is line with output control. For example virtual teams, the shift from control is emerged in the literature of virtual teams since managing at distance is necessary. A few studies have examined the role of leadership in virtual teams. According to Zigurs (2003) the studies showed the important aspects for leadership including: having frequent communication, having face-to-face interaction at the beginning of a team's life and creating awareness and visibility of team members and their tasks. The competence output control is a consequence of time and place independent working. Managers do not have another option when their subordinates can work time and place independent. As stated before, managers need to trust their subordinates in order to compensate the loss in visibility and presence (Felstead et al., 2004). Therefore we hypothesize those managers who use output control to evaluate their subordinates to relation between the intensity of NWoW and work-life balance.

*Hypothesis 9 - Output control positively influences the relation between the intensity of NWoW and work-life balance.*

In answer to the question "*Which competencies do managers need to meet the performance goals of NWoW*?", it can be stated that individualized consideration, trust, empowerment impact, supporting employees acceptance of IT, supporting knowledge sharing among employees, and output control are needed to meet the performance goals of NWoW. Furthermore, it is expected that all the competencies have a positive influence on the relation between the intensity of NWoW and the performance goals of NWoW.
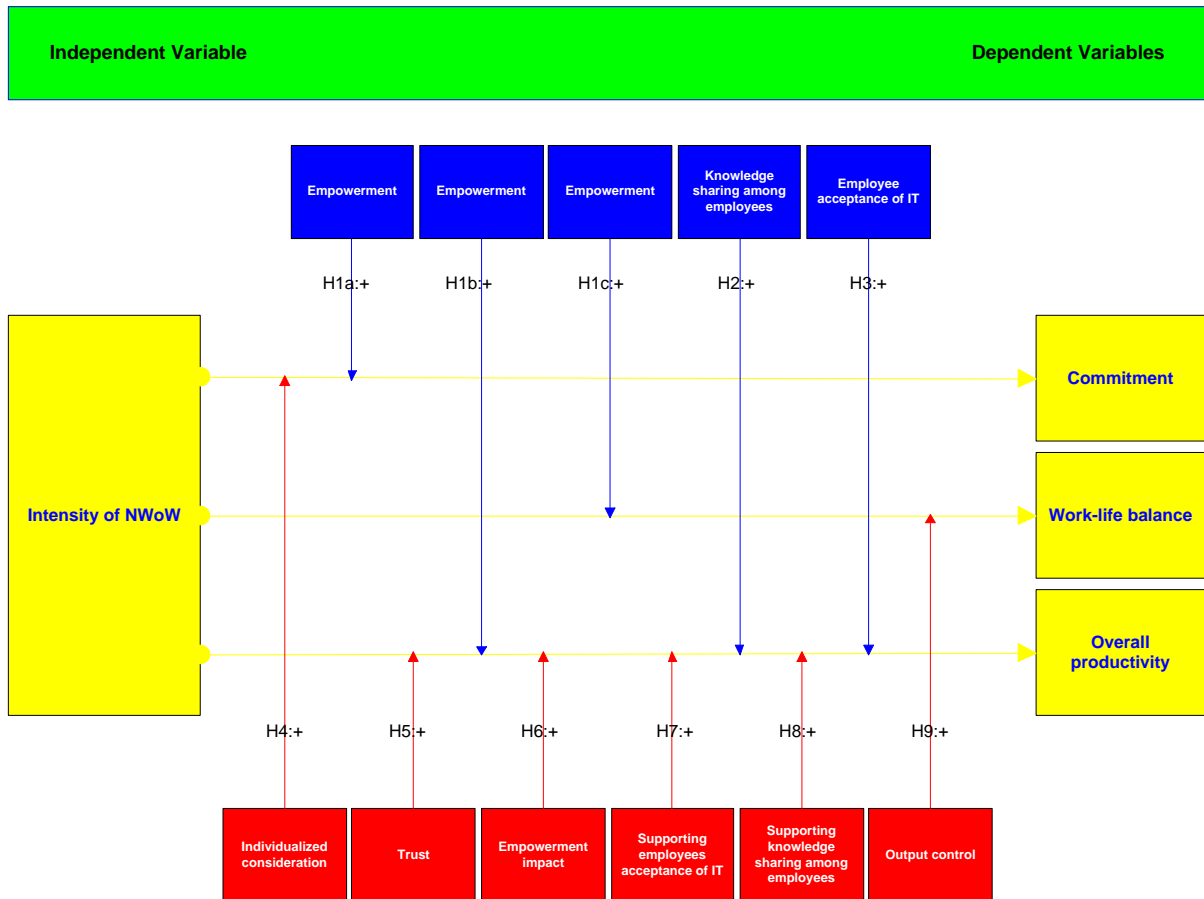
FIGURE 2: RESEARCH MODEL

The research model can be found in figure 2. In this conceptual research model the relation between the intensity of NWoW (independent variable) that is needed to meet the performance goals of NWoW (dependent variables) will be tested. This means that the dependent variables are those which are influenced by the independent variables. They are the outcome or the effect of the independent variable on the performance goals of NWoW. Furthermore, it is expected that the relation between the intensity of NWoW and the performance goals of NWoW will influenced by the moderator competencies of employees and managers

# 3 METHODOLOGY

In this chapter the research design will be described and selection of the method to verify the conceptual research model. The choice of research method will be discussed in 3.1. The research design and the procedures that will be adopted to maximize research validity and reliability are given in section 3.2. In section 3.3 the population of the research and the selection of the sample will be given with the response strategy. Finally in 3.4 the operationalization of the constructs will be illustrated in order to create the constructs for the study.

## 3.1 RESEARCH METHOD

In the section arguments will be given for the appropriateness of a cross-sectional survey as the research method for this study. A survey is a systematic way to collect from a sample to construct quantitative descriptors of the larger population (Groves, Fowler, Couper, Lepkowski, Singer, & Tourangean, 2004).

This research is set up from an explorative perspective. NWoW is a relatively new and unknown area for many researchers and therefore seeks explanations. From this exploratory view, a quantitative survey is developed that investigates the relationship between the most important aspects of NWoW. Looking to the research question, "which competencies do employees and managers need to meet the performance goals of NWoW", the goal of this survey is to provide organizations the opportunity of knowing their position regarding NWoW. Thus, knowing to what extent they comply with the demands of NWoW and how well their performance goals are achieved.

Survey research seems well suited for this research because it is the most proper research method to collect views from a larger group. Other advantages are that there is no time pressure, low costs, and more privacy for the respondents and absence of interviewer bias. In this research there is no budget available thus low costs are required. Looking at the time for this research (nine months) a survey is the best solution to gather information from a larger group of people. Two surveys were developed, one for the employees and one for the managers. Both surveys can be found in appendix 2 & 3. The questions are mostly multiple choice questions. Not only the interview bias is prevented but the respondents can also fill in the survey wherever, whenever and however they want, as is in line with NWoW, and of course within the time that the survey is opened. A disadvantage of surveys is that it cannot congregate qualitative data from depth questions and observations. However, on the topic of this study and the benefits from the fact that surveys can be done time after time, survey research fits best. For this study the survey will be spread out a single point in time because of the limited time, a longitudinal study is not possible. This means that it is a cross-sectional study (Babbie, 2007).

Furthermore, it is important that the respondents actually complete the survey. Surveys include the use of a questionnaire, this is an instrument specifically designed to elicit information that will be used for the analysis (Babbie, 2007). There are three main methods of managing survey questionnaires to a sample of respondents: self-administered questionnaires, survey administered by interviews in face-to-face encounters and surveys conducted by telephone (Babbie, 2007). For this study a self-administered questionnaire is used because this a good technique for web surveys. In the next sections, the reliability and validity of the web survey will be clarified.

The research design has an influence on the reliability and validity of the research. This section elaborates on the strategies that will be used in order to increase the reliability and validity of this research.

**Strategies to increase the reliability**

Reliability is the quality of measurement method that suggests that the same data will be collected each time in repeated observations of the same phenomenon (Babbie, 2007). It can also be stated that reliability means nothing else than consistency (Shadish, Cook & Campbell, 2002). The most frequently and commonly used technique to assess internal-consistency is with the Cronbach's alpha (Cronbach, 1951). Nunally (1978) recommends a Cronbach Alpha of .7. Others (e.g. Gulliksen, 1950) stated that there are no concrete arguments that a somewhat lower alpha is also acceptable. According to Baarda, de Goede & van Dijkum (2003) it is desirable that the Cronbach's alpha is at least .6. For that reason, for this research an alpha of .6 is acceptable. There will be newly-developed scales; therefore an alpha of .6 is acceptable for this research. When a Cronbach alpha of .6 is not possible, items of some constructs can be deleted in order to increase the Alpha until an acceptable level. It can be that a whole construct is not reliable; in that case, the construct needs to be deleted.

**Strategies to increase the validity**

Validity is a term describing a measure that accurately reflects the concept it intends to measure. It can be distinguished into internal, external, statistical conclusion, and construct validity (Shadish et al., 2002).

External validity is validity of inferences about whether the cause and effect relationship holds over variation in persons, settings, treatments and measurements (Shadish et al., 2002). To increase the external validity, the sample needs to represent the population and is independent of time and setting.  The intention for conducting this survey is that it can be generalized to all Dutch organizations, so it is necessary that the sample represents the population. For conducting a survey, it is important that the survey generates exact information which reflects the visions of a given population, therefore it is necessary to minimize all four types of survey error: coverage, sampling, non-response and measurement (Salant & Dillman, 1994). To minimize these types of errors, the Tailored Design Method (TDM) is being used (Dillman, 2007).  In section 3.3 the choices regarding sampling and response strategies will be given. Internal validity is the validity of inferences about whether the relationship between two variables is causal (Shadish et al., 2002). In this research the relationship between the independent and dependent is established after the literature review. The same counts for the moderator variables in relations to the dependent variables. Taking the fact of an explorative research into account, the threats for internal validity cannot totally be prevented because the independent variable is not provided with evidence by earlier research. Construct validity is the degree to which the variance is really explained by the measure (Shadish et al., 2002). The constructs that are used to conduct the survey are derived from the theory and some constructs are self-developed. These constructs are necessary for a complete view of NWoW. In order to increase the construct validity, factor loading are used. Statistical conclusion validity is the validity of inferences about covariation between two variables (Shadish et al., 2002). In order to increase the statistical conclusion validity, control variables are used. Furthermore, appropriate statistical tests will be used in order to analyze whether there is covaration between the independent and dependent variables.

**Control variables**

Within research control variables are used to test for confounding factors that might alter the outcome of the effect on the dependent variable. Control variables do increase the statistical conclusion validity, because it provides understanding in the unsolved variance of the dependent variable.  Glass & Camarigg (1992) show that woman experience larger extents of work-life conflict than man do and should therefore be distinct to explain possible variance in the results. Furthermore, employment contract is added to see if there is any difference in the acceptance of NWoW between fulltime and part-time employees and managers. The same variances are expected for function and department. Finally, job tenure for employees and management experience for managers are added.

**Testing for moderating variables**

Following Kankanhalli et al. (2005) the moderated multiple regression is used to test the interaction affect. Moderated multiple regression is a hierarchical procedure that is designed to first tests the relationship between the independent construct, the intensity of NWoW and the dependent construct, the performance goals of NWoW. After that, the relationship between interaction terms and the dependent construct is tested (Sharma, Durand, & Gur-Arie, 1981); Kankanhalli et al., 2005).

## 3.3    SELECTION OF SAMPLE AND POPULATION

The data for this study are collected from Alliander. As stated before, Alliander hired a consultancy firm to investigate the needs for employees to work with NWoW. This investigation took place at two departments (HRM and Klant&Markt). The sample for this research consists of these two departments and three additional departments (Assetmanagement, IM&ICT, and Regulering & MVO) within Alliander in order to have an adequate sample for this research. Together, the five departments consists of 966 employees, 72 of them are managers. Given the fact that the sample for managers is 72 it is necessary to aggregate the data from Alliander with the data of UMC Utrecht. This will be required for further analysis. Aggregating means that groups of cases are combined in order to analyze them at a less detailed level (Huizingh, 2007). The data from the survey for employees will be aggregated as well. All together, the sample for this research will be 1132 employees and 88 managers.

It is important to keep the survey errors in mind, since that fact that it concerns the construct validity of the measurement (De Leeuw, Hox, & Dillman (2008).  When only a subset of employees of all the employees is actually surveyed, sampling error can occur (Dillman, 2007). Coverage error occurs when some members of the population have a zero probability of being selected in the sample of the survey (De Leeuw et al., 2008).   In this research, two departments within Alliander are chosen based on earlier research of Alliander. This means that sampling error and coverage error are reduced because the sample represents the population of Alliander and the selected sample can be generalized over the whole population of Alliander.

**Response strategy**

Non-response error occurs when some of the sampled units do not respond and when these units are different from those who do and in a way relevant for the research (De Leeuw et al., 2008).  To reduce non-response error, the procedures of the TDM are used (Dillman, 2007). This method is developed in order to enhance the response in surveys and is based on Social Exchange Theory. Three elements are central in the social exchange theory: rewards, costs and belief. These three elements must be kept in mind during the design and implementation of a survey: maximizing the rewards, minimizing the costs and maximizing the trust of respondents that the rewards will indeed come to pass (De Leeuw, et al., 2008).  Alliander fully supported this research, so I could use the format of the web survey of Alliander. This format is well known by all the employees of Alliander and is therefore trusted. Furthermore, during my research I participated in a project group NWoW within Alliander. Most of the respondents were aware of the research and the excess value for them personally and for Alliander. The costs of the survey are almost zero and collected by Alliander. Finally, incentives for the respondents were not achievable for this research because Alliander does not give incentives for web surveys. The survey was sent into the Alliander format of web surveys; this means that an e-mail was send with a link of the survey, to the respondents. A reminder was send after 1,5 week to the respondents with the announcement that survey was almost closed. During the research I received e-mails from respondents for further information about NWoW and not about the survey itself.

In this section, the operationalization of the constructs is described with the constructs that were used and their source. All the constructs are derived from the theoretical framework. In appendix 4 the survey constructs for employees are given and in appendix 5 the survey constructs for managers are given.

*Intensity of the New Way of Working* (NWOW) is a scale which consists of eleven items. All items are self-developed because of the little research about NWoW. This scale examines the extent to which NWoW is present in the organizations. Nine of eleven items are evaluated on a five-point Likert-scale (1="strongly disagree", 5="strongly agree"). The two remaining questions allow respondents to fill out the presence of certain NWoW technologies and applications. Multiple answers can be filled out here. These answers will be used to gain an impression of the available resources. For further research these two items are transformed into a five-point Likert-scale, to measure the extent of availability of these items and with that the overall mean extent of all items together. To provide a full insight items will be clustered into the four dimensions of Baane et al. (2010). NWOW01, NWOW02, and NWOW03 become "Time and place independent". NWOW04, NWOW05, and NWOW06 are transformed into "Access and connectivity to knowledge". Items NWOW07, NWOW08, and NWOW09 become "Managing results", and NWOW10 reflects "Flexible employment relationship".

The four dimensions of (psychological) *Empowerment* (EMPO) are measured using the multidimensional measure method of Spreitzer (1995).  Besides the fact that this method is widely used throughout the literature (Spreitzer, Kizilos & Nason, 1997; Siegall & Gardner, 2000; Drake, Wong & Salter, 2007) the construct validity of the scale has been verified in several independent studies (Spreitzer, 1995; Kraimer, Seibert & Liden, 1999; Liden, Wayne & Sparrowe, 2000). The dimensions *meaning, competence, and self-determination* are used for the employee's questionnaire because the items entail self-efficacy and job autonomy. The fourth dimension *Empowerment impact (*EMIM) is used for the manager questionnaire. In total, eight items are used of the four dimensions of empowerment and are measured using a five-point Likert scale (1="strongly disagree", 5="strongly agree").

*Individualized consideration* (INCO) is measured with three items from the Multifactor Leadership Questionnaire (MLQ). The MLQ is developed by Bass and Avolio (1989) and is translated into Dutch by Den Hartog (1997). The three items are chosen because Den Hartog (1997) categorized these three items under individualized consideration. According to Bass and Avolio (1989), there are more items to measure individualized consideration but these items do not fit the context of NWoW. The questions ask the managers whether they care about their subordinates concerns and developmental needs. The items are evaluated on a five-point Likert scale (1="strongly disagree", 5="strongly agree").

*Trust* (TRST) is measured with one self-developed item. This item is based on one item of the MLQ, to be exact "demonstrates total confidence in me", since the fact that this question is asked to subordinates about their manager the question needs to be turned into a question that could be asked to a manager. The self-developed question is precise in order to specifically ask for the trust in the competences of employees (e.g. empowerment self-determination and empowerment competence). The item of trust is evaluated on a five-point Likert scale (1="strongly disagree", 5="strongly agree").

*Output Control* (OUCO) is measured with two items from Ouchi (1978). These items are based on organizational control, which consists of output control and behaviour control.  Managers were asked the following questions: For output control given: "When you are evaluating the people who report directly to you for raises or promotions, how much weight do you give to their output records?" with response 7= "Decision based entirely on output records" and 1="Output records are not considered at all in the decision." For behaviour control given: "How often do you see each of the people who reports directly to you?" with response 7 ="They are almost never out of my sight," and 1 = "I see each person less than once a week."

*Employee acceptance of IT* (EAIT) is a scale measured using nine items. These items are adapted from Davis (1993). One item is self developed and added to support the items of Davis (1993). These questions ask respondents to rate their ability to use technical resources and the perceived ease of use. All items are

evaluated on a five-point Likert scale (1="strongly disagree", 5="strongly agree"). The scales used in literature are modified to technical resources. The context of Davis' (1993) original scale is electronic mail which is changed to fit the context of this research.

*Supporting employee's acceptance of IT* (SEIT) is measured with a self developed scale to investigate the extent to which managers encourage employees to make use of the technical resources. All items are evaluated on a five-point Likert scale (1="strongly disagree", 5="strongly agree").

*Knowledge sharing among employees* (KNSH) is measured using five items. These items are adapted from Bock, Zmud, Kim & Lee (2005) and intend to measure the knowledge sharing intention and skills of employees. All items are measured using five-point Likert scale (1="strongly disagree", 5="strongly agree").

*Supporting knowledge sharing among employees* (SKSE) consists of three, self developed items in order to examine managers' behaviour in stimulating and encouraging knowledge sharing. All items are measured using five-point Likert scale (1="strongly disagree", 5="strongly agree").

The construct *Work-life balance* is (OWLB) adapted from Hill, Hawkins, Ferris & Weitzman (2001) and entails five items.  This construct measures the family life, private life and home obligations in contrast to the work dimension. The items are evaluated on a five-point Likert scale (1="strongly disagree", 5="strongly agree").

*Overall Productivity* (OVPR) is measured using five items from 'Overall Productivity' developed by Staples et al. (1998). The items used to measure the overall productivity construct determine the individual's general productivity. The items are evaluated on a five-point Likert scale (1="strongly disagree", 5="strongly agree").

*Commitment* (COMM) is measured using seven items of Mowday et al. (1979). Six of these items are used in both the manager and the employee questionnaire. The seventh item is altered to fit the context of the manager in which it allows him/her to answer the question as a manager dealing with top management. The items are evaluated on a five-point Liker scale (1="strongly disagree", 5="strongly agree").

The moderator variable *task complexity* (TACO) is measured with a three item scale. Two of these items are adapted from Ouchi (1978) and one item is self-developed.  The two items from Ouchi (1978) are evaluated on a five-point Likert Scale. For interdependence: To what extent does your performance depend upon how well others do their job?" with response 5 = "A very great deal," and 1 ="Almost none." For routine: "What percentage of your time on the job do you spend carrying out routine tasks?" with response 5= till 100% and 1= till 0%. The last item is self developed because the existing measures do not cover fully cover the variable task complexity. The self-developed item is "My tasks as a whole are complex with response" with response 5="Totally agree", and 1='Totally disagree'. Although both surveys contain of the same questions, the content is slightly different. The manager is asked to answer the questions on behalf of the employees in his or her department.

# 4   DATA ANALYSIS

This chapter encloses the findings gathered using the employees and managers surveys at Alliander and UMC Utrecht. First the analysis of the response will be given (section 4.1). Second, a paragraph will explain the outcome measured at both organizations together (section 4.2). Section 4.2.1 encloses the analysis of the results of Alliander. After explaining the results, the model will be verified using reliability and validity tests (section 4.3). When the model is verified, the hypothesis will be tested to explain the relation between the variables (section 4.4).

## 4.1   ANALYSIS OF THE RESPONSE

In section 3.3 the response strategy is described. A detailed overview of the response is given in table 3, only for Alliander. The total population that received the survey was 1132 employees and 88 managers. In total 559 employees and 42 managers filled in the survey. None of the surveys were incomplete so a missing value analysis is not necessary. The response rate is above the average 40% response rate for e-mail surveys (Dillman, 2007).  The relatively high response rate is a sign of a low non-respondents error.

| Alliander | Population | Useful response | Response rate |
|---|---|---|---|
| Employees | N=966 | 468 | 48,45% |
| Managers | N=72 | 34 | 47,22% |

TABLE 3: RESPONSE STATISTICS.

As stated before, for further analysis the data from Alliander are aggregated with the data of UMC Utrecht. To evaluate the non-respondents bias the demographic data (part of them are control variables) are analyzed. The results are presented in table 4. All the outcomes from the control variable of both organizations can be found in appendix 6.

| Employees | Alliander | UMC | Total |
|---|---|---|---|
| Respondents | 468 | 91 | 559 |
| Male | 80,3% | 49,5% | 73,8% |
| Female | 19,7% | 50,5% | 26,2% |

| Managers | Alliander | UMC | Total |
|---|---|---|---|
| Respondents | 34 | 8 | 42 |
| Male | 76.5 % | 62.5 % | 75,3% |
| Female | 23.5 % | 37.5 % | 24,7% |

TABLE 4: COMPARISON RESPONDENTS ALLIANDER AND UMC UTRECHT

The most remarkable difference between the two datasets is the variable gender. The proportion between male and female is wide. Looking at the total population of Alliander there is almost not a difference between the results above (male: 76%, female: 24%). Based on the results between the respondent and the sample population it is not expected that non response bias has a significant influence on the results of this research.

## 4.2    SURVEY RESULTS ALLIANDER AND UMC UTRECHT

In this section, the results are compared from both organizations to see if there are significant differences between the results. The common values or differences between employees and managers will be explained in the section 4.2.1., covering the results of the separate organizations. The mean scores are calculated per construct. It is also important to look at the extent to which the results for a variable are spread around their mean (Huizingh, 2007). The spread can be described by using the standard deviation. When the results are close to the mean, the mean is more typical than if they vary widely (Huizingh, 2007). All the mean scores and standard deviations for both organizations are given in appendix 7 and appendix 8. The independent samples t test is used to test the significance of the difference between the means of Alliander and UMC Utrecht (Huizingh, 2007). With a significance level of α=0,05.

The results on the independent variable Intensity of NWoW show that both organizations have a moderate extent of NWoW implemented see figure 3 for a radar view. The mean value of UMC Utrecht is 2.95 for employees and 2.99 for managers, which means that employees and managers share the opinion that the overall intensity of NWoW is moderate. At Alliander a slight difference is observed between employees (3.41) and managers (3.67). This slight difference is significant which means that with 95% confidence it can stated that   the true mean difference lies between .15 and .39 (t=4.429, df=38.61, P=.000). The observed mean difference between the employees of UMC Utrecht and Alliander is .46. The independent samples t-test confirms that with 95% confidence the true mean difference lies between .38 and .54 (t=11.503, df=557, P=.000).  The observed mean difference between the managers of both organizations is .69 (t=3.708, df=8.58, P=.005). This means that with 95% confidence the true mean difference lies between .26 and 1.11.  This means that the mean difference for both employees and managers is significant referring to intensity of NWoW.

Both organizations show a spread in means when analyzing the different dimensions that all together form the Intensity of NWoW. For employees, the true mean difference show that at UMC Utrecht "Time and place independent" and "Access and connectivity to knowledge" is significant (t=3.53, df=180, P=.000; t=15.51, df=180, P=.000). This means that it can be stated these two dimensions are causing the moderate mean for the intensity of NWoW. For managers at UMC Utrecht the true mean difference is significant for the dimension "Access and connectivity to knowledge" (t=3.8430, df=14, P=.002). For Alliander, the true mean difference of the dimension "Access and connectivity to knowledge" is significant, for both employees and managers (t=35.62, df=934, p=.000; t=8.95, df=66, p=.000). This means that for Alliander the dimension "Access and connectivity to knowledge" scores significantly lower referring to the intensity of NWoW.
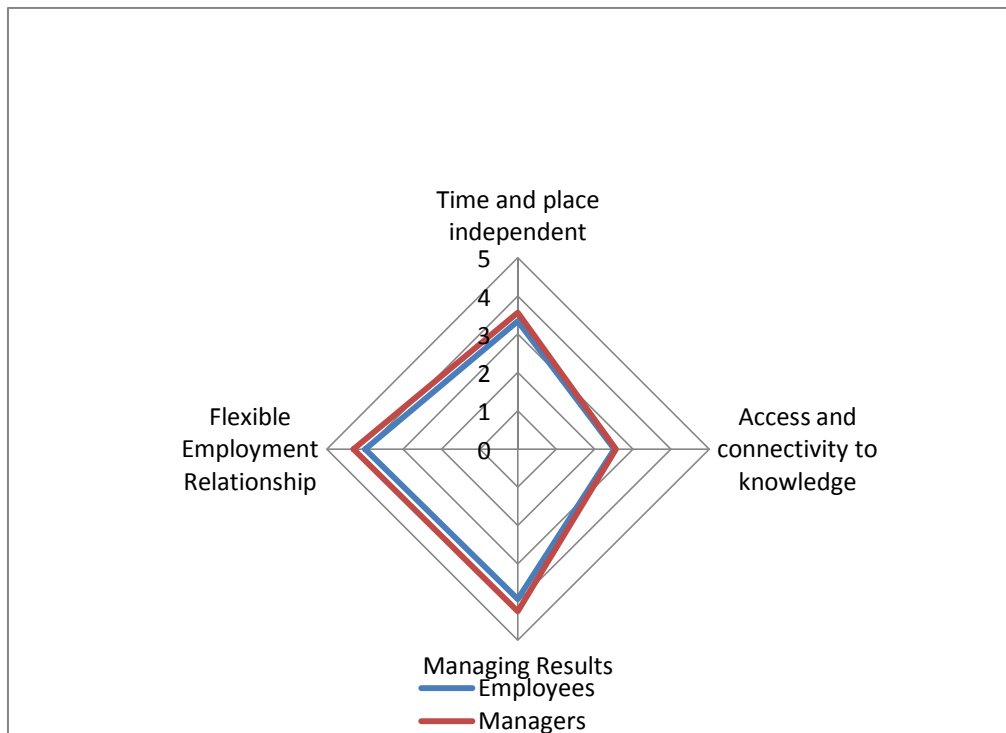
FIGURE 3: RADAR FOR THE INTENSITY NWOW UMC UTRECHT AND ALLIANDER TOGETHER

The first assumed moderator is task complexity. For employees, it appears that there is quite a difference between the two organizations. The employees within Alliander have a low task complexity (mean=2) while the results show that the task complexity is rather high (mean=3.36) at UMC Utrecht. This difference in the means is significant (t=21.38, df=557, p=.000). At Alliander the managers stated that the task complexity for employees is rather low (mean=2.12), while the managers at UMC Utrecht find that task complexity is higher (mean=3.04) for their employees. The true mean difference is significant (t=3.71, df=40, p=.000). The results show that the employees within Alliander have a lower task complexity than UMC Utrecht. This is being confirmed by the managers at both organizations.

The second assumed moderator is empowerment. For employees the results show a small difference, comparing both organizations. UMC Utrecht (mean=4.09) scores lower than Alliander (mean=4.21) on empowerment. This difference in means is significant (t=2.72, df=557, p=.007). This means that the employees within Alliander have more control over the competence empowerment. For managers, the score for empowerment impact at UMC Utrecht (mean=3.42) is almost the same as Alliander (mean=3.44). The small difference in means is being confirmed by the t-test because the difference is not significant (t=.133, df=14.68, p=.896).

The third assumed moderator is individualized consideration. This construct is measured in the survey for managers. The true mean difference is significant (t=2.494, df=8.529, p=.036). This means that the managers at Alliander have a higher individualized consideration (mean=4.55) than the managers at UMC Utrecht (mean=4.04).

The fourth assumed moderator that has been analyzed is trust. This construct is measured in the survey for managers. On this construct Alliander (mean=4.06) has a higher score than UMC Utrecht (3.88). This does not mean that the managers at Alliander have more trust in their employees when they perform their tasks than at UMC Utrecht because the true mean difference is not significant (t=.718, df=11.21, p=.487).

The fifth assumed moderator is knowledge sharing among employees for employees and supporting knowledge sharing among employees for managers. The employees within Alliander (mean= 3.99) have a slightly better control over knowledge sharing than UMC Utrecht (mean= 3.83). This is being confirmed by the

t-test because the difference in means is significant (t=3.38, df=129.47, p=.001). The same counts for the support from managers, UMC Utrecht (Mean=4.13) scores lower than Alliander (mean = 4.52). The true mean difference is significant (t=2.54, df=40, p=.015).

The sixth assumed moderator is employee's acceptance of IT for employees and support employees acceptance of IT for managers. The score for employees at Alliander (mean=3.52) are lower than at UMC Utrecht (mean=3.57) but not significant (t=.659, df=118.83, p=.488). Conversely, it seems that the managers at Alliander (mean=3.79) support their employees more to accept IT than the managers at UMC Utrecht (mean= 3.67). This difference in means is not significant (t=.425, df=40, p=.673) thus there are not significant differences between UMC Utrecht and Alliander, referring to the acceptance and support of IT.

The seventh assumed moderator is output control. This construct is measured in the survey for managers. The managers at Alliander (mean=3.34) appear to more control more on output than the managers at UMC Utrecht (mean=3.06) but this difference is not significant (t=1.561, df=40, p=.126).

The results of questionnaires on the dependent variables show that all dependent variables score rather positive. Interesting to see are the differences between employees and managers for both organizations. Commitment, overall productivity, and work-life balance all, except work-life balance at UMC Utrecht (employees: 3.48 and managers: 3.25), scores higher on managers than on employees. The t-test confirms that all differences are significant except for the true mean difference of commitment between the employees of UMC Utrecht and Alliander (t=1.668, df=141.40, p=.097).

### 4.2.1 ANALYSIS RESULTS ALLIANDER

The results of both the surveys have been compared between Alliander and UMC Utrecht. In this section the results of Alliander will be elaborated.
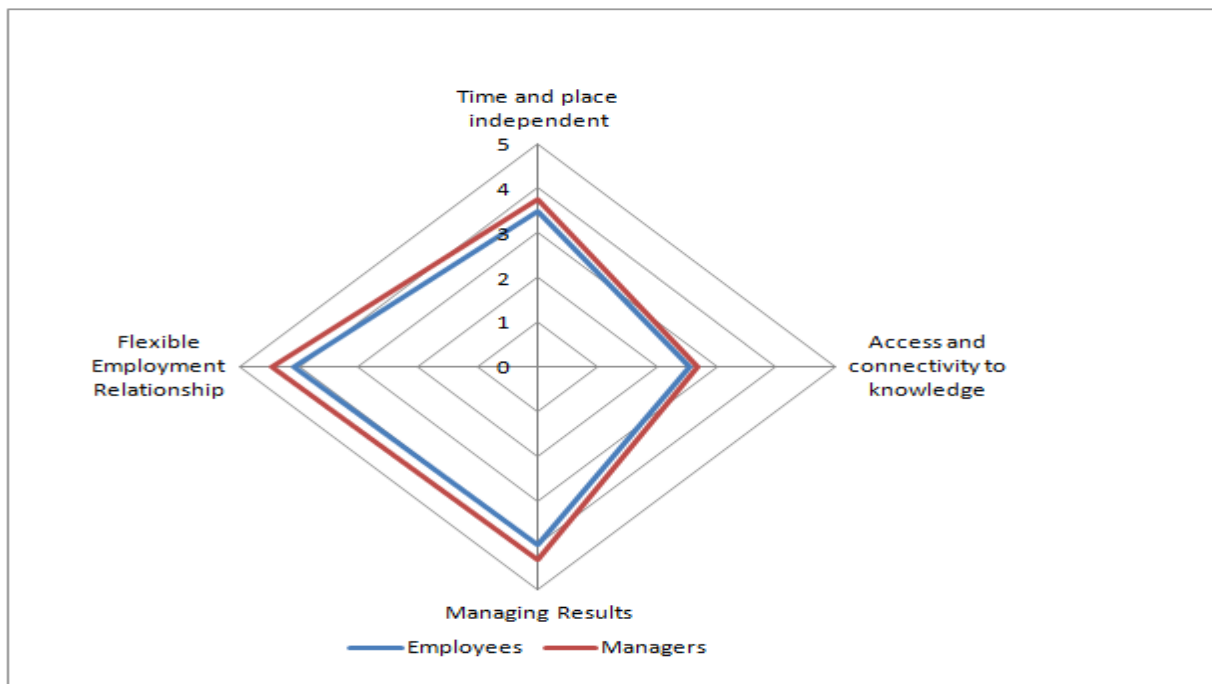


FIGURE 4: RADAR FOR THE INTENSITY NWOW AT ALLIANDER

Figure 4 shows the radar for the intensity NWoW at Alliander. The mean outcomes are 3.41 for employees and 3.67 for managers for the intensity NWoW. These outcomes give an impression about NWoW within Alliander but a closer look is needed in order to see if there are correlations with for example gender or age. A Pearson Chi-Square test is performed to check if there are significant relations (α=0,05) between the control variables

(gender, age, education, tenure, and employment contract/experience manager) and the answers of the respondents. A Pearson Chi-Square test does not give information about the strength of the relation (Huizingh, 2007).

For managers, the control variable education seems to be related time and place independent working and commitment. It appears that 94% of the managers is higher educated (HBO or WO). The control variable gender shows a significant relationship with trust and task complexity appears to be related with employment contract (88% of the respondent's works fulltime). The results of the Pearson Chi-Square test for managers can be found in table 5.

| Construct | Control variable | Chi-square | Significance p=< α=0,05 |
|---|---|---|---|
| Time and place independent working | Education | 21,659 | .042 |
| Task complexity | Employment contract | 16,339 | .022 |
| Trust | Gender | 6,873 | .032 |
| Commitment | Education | 46,431 | .002 |

TABLE 5: PEARSON CHI-SQUARE TEST, MANAGERS

For employees, there seems to be a relation between the different dimensions of NWoW and education, except for the dimension flexible employment relationships. Taking a closer look at education, 75% of the respondent is higher educated (HBO or WO). This means that when the survey would have had respondents with a lower education they could alter a different outcome. The control variable gender seems to be related to access and connectivity to knowledge. To clarify this given, a Pearson Chi-Square test is performed for each department. It appears that two departments (Assetmanagement and IM&ICT) show a significant relationship with access and connectivity to knowledge. The relation between male and female is rather distorted for these two departments (Asset management male=57, female=5; IM&ICT male=216, female=34) but it is in line with the total population of Alliander. The control variable tenure is related to flexible employment relationships. It is noticeable there, that 52% of the respondents has an employment contract from over the five years. The control variable employment contract is seems to be related to access and connectivity to knowledge and task complexity. Almost 83% of the respondents work fulltime. The answers of the employees who work part-time are in line with the full timers. Finally, the control variable age is related to task complexity and empowerment. The results of the Pearson Chi-Square test for employees can be found in table 6. More extensive research should investigate if these variables are actually dependent on the control variables. Furthermore, in the next section the reliability and validity of the survey will be verified. If the variables change, the relation might differ.

| Construct | Control variable | Chi-square | Significance p=< α=0,05 |
|---|---|---|---|
| Time and place independent working | Education | 58,161 | .032 |
|  | Education | 50,223 | .021 |
|  | Gender | 21,709 | .005 |
| Unlimited access and connectivity to knowledge | Employment contract | 19,792 | .011 |
| Consequently managing results | Education | 56,703 | .015 |
| Flexible employment relationships | Tenure | 58,405 | .000 |
|  | Age | 60,230 | .000 |
|  | Employment contract | 77,844 | .015 |
| Task complexity | Education | 18,980 | .000 |
| Empowerment | Age | 33,479 | .030 |

TABLE 6: PEARSON CHI-SQUARE TEST, EMPLOYEES

Table 7 shows the mean scores and standard deviations for all departments in total and per department for the intensity of NWoW. To see if the intensity differs significantly between the departments, a one-way analysis of variance (one-way Anova) is performed (see last row table 7). If the differences between the departments occurring by chance is low, that will correspond to a large F-statistic with the α of .05 which is statistically significant (Huizingh, 2007).  For the managers, it appears that the intensity of NWoW differs not significantly between the departments (F=1.623, df=4, p=.195). Furthermore, the four dimensions have been tested separately, and there are not significant differences between the departments. For the employees, the results of the one-way Anova show that there is a significant difference between the departments and the dimensions time and place independent working (F= 5,303, df=4 , p=.000),  access and connectivity to knowledge(F=3,483 ,

df=4 , p=.008)  and flexible employment relationships (F= 5,122, df=4, p=.000).  The intensity of NWoW differ not significantly between the departments (F= 1,062, df=4, p=.375). It must be stated that three respondents did not fill in their department.

| Employees | HRM | Assetmanagement | IM&ICT | Regulering & MVO | Klant & Markt | Anova = difference between the departments |
|---|---|---|---|---|---|---|
| Time and place independent working | m=3,30 sd=,719 | m=3,32 sd=,60 | m=3,54 sd=,51 | m=3,77 sd=,32 | m=3,37 sd=,653 | F= 5,303 , df=4 , p=.000 |
| Unlimited access and connectivity to knowledge | m=2,57 sd=,450 | m=2,44 sd=,32 | m=2,61 sd=,33 | m=2,59 sd=,41 | m=2,5 sd=,431 | F=3,483 , df=4 , p=.008 |
| Consequently managing results | m=4,10 sd=,465 | m=4,03 sd=,50 | m=3,92 sd=,54 | m=3,93 sd=,58 | m=4,02 sd=,508 | F= 1,651 , df=4 , p=.160 |
| Flexible employment relationships | m=4,24 sd=,910 | m=4,37 sd=,659 | m=3,89 sd=1,139 | m=4,55 sd=,74 | m=4,14 sd=,914 | F= 5,122 , df=4 , p=.000 |
| NWOW total | m=3,42 sd= ,415 | m=3,37 sd=,36 | m=3,41 sd=,33 | m=3,546 sd=,27 | m=3,38 sd=,419 | F= 1,062 , df=4 , p=.375 |

TABLE 7: THE DIFFERENCES IN INTENSITY NWOW BETWEEN THE DEPARTMENTS

The relations between the control variables, constructs and departments are clear. Now it is interesting to find out what the exact results from the respondents are for each construct. The mean outcomes can be found in appendix 7.

The intensity of NWoW for the managers and employees scores rather high, most of the respondents can decide where to work, determine the order of the tasks, have relationship with their manager that is based on mutual respect and trust, and have flexibility to arrange fringe benefits. Only the dimension access and connectivity to knowledge is notable with a mean of 2.69 for employees and 2.56 for employees. The low mean outcome is caused by the items that entail the use of IT resources and applications and or social media. All the managers have a laptop and 50% uses a Smartphone. An e-book reader is used by one manager and a tablet by five managers. 35% of the managers make use of videoconferencing. For employees, 89% has a laptop, 85% uses a mobile phone and only 9% uses a Smartphone for their work. An e-book reader is used by one employee and a tablet by 10 employees. To share information and knowledge, a few to none managers and employees make use of MSN, Hyves, Skype, Twitter, and Facebook.  On the other hand, 56% of the managers make use of Yammer and 65% of LinkedIn, while only 19% of the employees make use of Yammer and 33% of LinkedIn. Furthermore, the internal network and Intranet are frequently used applications to share information and knowledge, for both managers and employees. It can be stated that the low mean is probably caused by the use of only a few IT recourses and applications and or social media.

The assumed moderators for managers show some appealing results. For example task complexity has a low mean (2.12). The results show that the managers find that their employees have many routine tasks and are dependent on each other; this results into a low task complexity. The low mean of managers for task complexity is in accordance with the results for employees. The employees within Alliander find that they have a low task complexity.  For employees, the assumed moderator empowerment (mean=4.21) and knowledge sharing among employees (3.99) have an acceptable mean. For managers, individualized consideration, trust and supporting knowledge sharing among employees score a value of 4.55, 4.06, and 4.52 which are suitable results. Conversely, output control has a mean outcome of 3.34. This is rather low, considering the fact that output control is an important enabler for NWoW. As stated before, the type of managing shifts from a control of staff presence to an output-oriented form of control (Vos & Van der Voordt, 2001). The scores on empowerment impact (mean=3.44) and supporting employees acceptance of IT (mean=3.79) are relatively low. This means that the managers find that they do not have a significant impact on their team and for the supporting employees' acceptance of IT. This can be clarified by the little use of IT recourses and applications and or social media.

The performance goals work-life balance, overall productivity and commitment have an acceptable mean. The results of work-life balance show that managers have difficulties with finding a work-life balance and cannot always find time for their personal life. By contrast, 79% of the managers agree or totally agree if they are satisfied with their work-life balance. Employees do not find it difficult to find a work-life balance but they cannot always find the time for their personal life. Furthermore, when employees have vacation they can separate themselves from their work but they often feel drained when they go home from work because of work pressures and problems. By contrast, 79% of employees agree or totally agree if they are satisfied with their work-life balance. For productivity, 88% of the managers rates their performance in the top quarter among collogue managers. For employees, 56% rates their performance in the top quarter among collogues. Furthermore, the results show positive results regarding the productivity of the managers and employees. It can be stated that the managers are proud to work for Alliander (over the 80%) and they would not leave the

organization when very little changes in the present circumstances (64%). The same percentage can be assigned to the employees within Alliander.

## 4.3    ASSESSING RELIABILITY AND VALIDITY

In this section, the reliability and validity of survey is being assessed. Before it is possible to test whether a significant relationship is present within the structural model, it is necessary to test the level reliability and validity of the measurement model (Fornell & Larcker, 1981).

**Reliability**

The Cronbach alpha is used to assess the internal consistency and the assumption of unidimensionality. The assumption of unidimensionality is based on the critical and basic assumption of measurement theory that the set of items that form the instrument measure one thing in common (Gerbing & Anderson, 1988). The value's of the Cronbach's alpha needs to have a value of at least .6 for the research to provide reliable results. In table 8 the descriptive statistics and the Cronbach's alpha are given for the dataset of employees. The constructs of the employees' survey meet the criterion for an alpha of .6. However, a small amount of items needed to be deleted in order to meet the criterion. In appendix 9 these items are shown in grey. The constructs of the managers' survey, four from the eleven constructs do not meet the criterion for an alpha of .6. The constructs that meet the criterion are used for further elaboration of this research and these items are shown in table 9. The constructs that are deleted are shown in appendix 10.

| Construct | Item | M | SD | Range | α |
|---|---|---|---|---|---|
| Intensity of NWoW | 10 | 3,33 | 0,39 | 1-5 | .605 |
| Task complexity | 2 | 4,19 | 0,39 | 1-5 | .683 |
| Empowerment | 5 | 4,16 | 0,48 | 1-5 | .761 |
| Knowledge sharing among employees | 3 | 3,69 | 0,93 | 1-5 | .708 |
| Employee Acceptance of IT | 4 | 3,81 | 0,73 | 1-5 | .878 |
| Work-life balance | 5 | 3,64 | 0,55 | 1-5 | .645 |
| Overall productivity | 5 | 3,75 | 0,45 | 1-5 | .771 |
| Commitment | 2 | 3,37 | 0,58 | 1-5 | .616 |

TABLE 8: DESCRIPTIVE STATISTICS OF THE CONSTRUCTS AND CRONBACH'S ALPHA OF EMPLOYEES

| Construct | Item | M | SD | Range | α |
|---|---|---|---|---|---|
| Intensity of NWoW | 10 | 3,54 | 0,46 | 1-5 | .737 |
| Task complexity | 2 | 2,38 | 0,85 | 1-5 | .638 |
| Empowerment Impact | 3 | 3,35 | 0,58 | 1-5 | .646 |
| Supporting knowledge sharing among employees | 3 | 4,44 | 0,42 | 1-5 | .758 |
| Supporting employees acceptance of IT | 3 | 3,77 | 0,76 | 1-5 | .738 |
| Work-life balance | 5 | 3,55 | 0,68 | 1-5 | .744 |
| Commitment | 6 | 3,65 | 0,49 | 1-5 | .601 |

TABLE 9: DESCRIPTIVE STATISTICS OF THE CONSTRUCTS AND CRONBACH'S ALPHA OF MANAGERS

**Validity**

To assess validity a confirmatory factor analysis is performed. Appendix 11 shows the results of this confirmatory factor analysis. According to Kankanhalli et al. (2005) item loadings between 0.45 and 0.54 are considered fair, item loadings between .055 and 0.62 are considered good,  item loadings between 0.63 and 0.70 are considered very good, and item loadings of 0.71 or higher are considered excellent. Hair, Anderson, Tatham, & Black (1998) apply a different criterion. They suggest that item loadings above 0.3 comply with the minimum level, between 0.4 and 0.5 are considered more important, and above 0.5 are practically significant.

*Employees*

The results of the pattern matrix show that most items load on a single factor except NWOW09. Furthermore, NWOW05, NWOW07, and NWOW10 do not load on any factor. Taking a closer look to NWOW, it becomes clear that the items load on three different factors. This can be explained with the fact that this is a newly developed scale which will need to prove itself by further testing in the future. Another possible explanation is the fact that this intensity of NWoW as a concept describes a broad spectre that might be dividable in separate constructs, for example in the four dimensions that are given in the typology (section 2.2) For this research the intensity of NWoW will be used as one construct because of the explanation about the fact that it is a newly developed scale which will need to prove itself by further testing in the future (longitudinal study).

The WLBA items are split into two separate clusters loading on different factors. A possible explanation for this diversification is the fact that items WLBA01 and WLBA04 reflect a more emotional/ personal perspective of work-life  balance while the other 3 items comply with a more structural side of work-life balance. Similar to the loading issues of work-life balance is empowerment. The items are clustered into two separate factors. Empowerment for employees originally counted three different elements (empowerment meaning, empowerment competence, and empowerment self-determination) which had to be grouped together because of the limited amount of items. In this case empowerment meaning (EMPO01 and EMPO02) does not load on the same factor as the other three items. According to the literature the dimensions of empowerment belong together which is the reason that this research continues to treat empowerment as one construct. Work-life balance will also be grouped, because this is an existing construct that has proved its reliability and validity.

*Managers*

According to Kline (1994) a sample of 100 is sufficient, so long as there are at least twice as many respondents as variables. In this research, the N is 34 so a factor analysis cannot be performed. It is possible to find out if there are relations between the different constructs with a correlation matrix. The assumed moderator's empowerment impact, support knowledge sharing among employees, support employee acceptance of IT and task complexity show acceptable correlations. The same counts for the dependent variable work-life balance. The variables intensity of NWoW and commitment shows disturbing correlations. For intensity of NWoW, NWOW01, NWOW02, NWOW05 & NWOW06 are correlated. NWOW03 & NWOW04 show a high correlation and the same counts for NWOW09 & NWOW10. NWOW07 is negative correlated with NWOW08.  This difference with correlation is the same as for employees: intensity of NWoW is a newly developed scale which will need to prove itself by further testing in the future. For this research the intensity of NWoW will be used as one construct. For the construct commitment the items COMM03 and COMM04 show a correlation. The same counts for COMM01 and COMM06, COMM04 and COMM05 and COMM03 en COMM06. This means that that construct commitment should be divided into four constructs instead of one. Therefore the construct commitment cannot be used for this research and will be deleted for this research from now on. This means that the variable work-life balance is the only dependent variable left. According to the theory, work-life balance is associated with output control.  Considering the information that output control is deleted after the reliability analysis it is not possible to further analyze the data from the managers. Hypotheses 4, 5, 6, 7, 8 & 9 cannot be tested and will therefore be terminated from this research.

Before it is possible to test the hypotheses it is necessary to investigate the moderator variables for employees (empowerment, knowledge sharing among employees, employee's acceptance of IT) and to define the regression equation. The investigation of the moderator variables is done according to the four steps of Sharma et al. (1981). Sub groups analysis and moderated regression analysis (MRA) are two basic methods that distinguish the identification of the presence of moderator variables. To prepare for the MRA new variables are created that form the interaction effect and is done through multiplying all moderator variables with the independent variable (e.g. EMPO*NWOW and KNSH*NWOW).

When using the MRA method the test the moderated variables, three regression equations have to be examined in order for the regression coefficients to be assessed (Sharma et al., 1981).

1. $Y = a + b_1x$;
2. $Y = a + b_1x + b_2z$;
3. $Y = a + b_1x + b_2z + b_3xz$.

The first equation explains the relation between the independent and the dependent. In the second equation the moderator variable is added and in the third equation the interaction effect between the independent and moderator variable is added. If equations 2 and 3 do not show significant differences, then the moderator variable is just an independent variable. If equation 3 is significantly different while equation 1 and 2 are not different then the moderator variable is a pure moderator. If all three equations are different, the moderator variable is classified as a quasi-moderator. The second method is the subgroup analysis and splits up the sample into separate groups based upon the hypothesized moderator (Sharma et al., 1981). The moderators now will be determined according to the four steps of Sharma et al. (1981).

**Step 1.** The MRA method shows that the interaction effects are not significant. The equation shows no significant differences when the interaction variables are added.

**Step 2.** Step 2 is normally used when significant differences in step 1 are found and thus to determine whether the moderator variable is related to the dependent variable. In this case no significant differences are found and therefore step 2 is skipped.

**Step 3.** No significant interaction effects were found in step 2, so it is necessary to determine whether the employee competencies are significant related to either the independent variables or the dependent variables. Table 10 shows that all relations are significant. Therefore it can be concluded that z is not a moderator variable and do not have to perform the subgroup analysis of step 4. Finally it can be determined whether z is an exogenous, predictor, intervening, antecedent, or a suppressor variable. In this case z is an antecedent variable which means that it influences both the dependent and the independent variable.

| Relationships | $R^2$ | Significance p=< α=0,05 |
|---|---|---|
| EMPO to NWoW | 0,057 | 0,000 |
| KNSH to NWoW | 0,076 | 0,000 |
| EAIT to NWoW | 0,069 | 0,000 |
| EMPO to COMM | 0,092 | 0,000 |
| EMPO to OVPR | 0,166 | 0,000 |
| EMPO to WLBA | 0,03 | 0,000 |
| KNSH to OVPR | 0,029 | 0,000 |
| EAIT to OVPR | 0,03 | 0,000 |

TABLE 10: SIGNIFICANT RELATIONSHIPS DEPENDENT/INDEPENDENT ON MODERATOR

### 4.4.1 THE REGRESSION EQUATION

Regression is stated as a causal relation between dependent variable Y and independent variable X. This is considered an asymmetric relation in which the dependent variable is influenced by the independent (De Vocht, 2008). The equation of the regression model is as followed: $Y = a + b_1X_1$. Y is the predicting independent variable, a = the constant or otherwise called the intercept, b is the regression coefficient, otherwise known as the slope (Foster, Barkus & Yavorsky, 2006; De Vocht, 2008). During multiple regression the same method compared to the simple regression method is used. The regression line cannot be visualized in the two dimensional space like the simple regression method, but the computation remains the same. For example: $Y = a + b_1X_1 + b_2X_2 + \ldots + \varepsilon$

Filling the equation for the three dependent variables results in the following equations:

$Y_1 = 2.641 + .076z_1$;
$Y_2 = 2.7 + .067z_1$;
$Y_3 = 2.889 + .082z_1 - .024z_2 + .004z_3$.

Where

$Y_1$ = Commitment
$Y_2$ = Work-life balance
$Y_3$ = Overall productivity
$Z_1$ = Empowerment * Intensity of NWoW
$Z_2$ = Knowledge sharing among employees * Intensity of NWoW
$Z_3$ = Employees acceptance of IT * Intensity of NWoW

Based on the results, the above regression equation will be evaluated. From the different steps from Sharma (1981) it is known that the assumed moderators are antecedent variables. Considering the fact, that an antecedent variable influences both the dependent and the independent variable, the interaction effect between the independent, in this case intensity of NWoW and the antecedent variable has an influence on the dependent variables. The results show that all equations are significant, the p value is lower than the $\alpha$ of 0.05. Commitment: F=57.137, df=1, p=.000, $R^2$= .093; Work-life balance: F= 49.822, df=1, p =.000, $R^2$ = .082; Overall productivity: F= 24.995, df=3, p =.000, $R^2$ = .119. The F-statistic for the last equation is considerably lower than the other two. The F-statistic is probably lower because $Z_3$ has a low value. This low value is confirmed by the t-test for the $R^2$ which shows that $Z_3$ is not significant (t = .526, p= .599). Therefore the construct employee's acceptance of IT is excluded for further research. This means that hypothesis 3 is terminated from this research.

### 4.4.2 HYPOTHESES

Twelve hypotheses were formulated in the theoretical framework. As explained in the process, only four of them can be tested. As explained earlier it is not possible to determine the effect of the moderator(s) on the relation between the intensity of NWoW and in the three dependent variables. Therefore frequency tables, histograms, and descriptives are used to explain why a regression analysis doesn't provide significant relationships when testing the hypotheses.

*Hypothesis 1a: Empowerment positively influences the relation between NWoW Intensity and commitment.*

When observing the histogram of commitment (see appendix 12) it becomes clear that there seems to be a relative normal distribution with a peak value. A kurtosis value of 1.954 confirms this observation and provides information that is difficult to do a regression analysis with a variable not fulfilling the assumption of multicollinearity and homoscedasticity. Furthermore, kurtosis (-.063) and skewness (.427) at the empowerment construct fulfil the assumptions needed to perform statistical tests, but frequency tables show that variance in results is minimal. Therefore it is impossible to test the extent to which empowerment strengthens the relation between the independent variable and commitment. Hypothesis 1a is rejected. Empowerment is reliable and

the factor analysis shows a considerable amount of correlation between the items. Therefore, it is still interesting to see the potential added value of empowerment that was found in the regression equation. The interaction effect between the intensity of NWoW and empowerment has an influence on commitment ($F=57.137$, df=1, p=.000, $R^2$= .093). The relation between the interaction effect and commitment is significant but the regression coefficient shows that there is a relationship but that it is not linear. The F-statistic is high, and this high value is confirmed by the t-test for the $R^2$ which shows that the interaction effect is significant (t = 7.559, p<.05).

*Hypothesis 1b: Empowerment positively influences the relation between NWoW Intensity and overall productivity.*

The construct overall productivity produces a relative high mean value of 4.19 which in the beginning doesn't have to be bad. Troubling is the amount of variances observed in the histogram as displayed in appendix 12. A kurtosis of 3.461 is observed and expains the curve of the histogram. Few variance in a dependent variable means few observed values that can be explained by the independent or moderator variables.  As mentioned before, empowerment shows few variance in results which means that it is impossible to test the extent to which empowerment strengthens the relation between the independent variable and overall productivity. Hypothesis 1b therefore is rejected. The explanation of hypothesis 1a is the same for this hypothesis: it is still interesting to see the potential added value of empowerment. The interaction effect between the intensity of NWoW and empowerment has an influence on overall productivity ($F=70.030$, df=1, p=.000, $R^2$= .112). The high F-statistic is being confirmed by the t-test for the $R^2$ which shows that the interaction effect is significant (t = 8.368, p<.05).

*Hypothesis 1c: Empowerment positively influences the relation between NWoW Intensity and work-life balance.*

Work-life balance as a construct has an almost perfect normality curve. The observed data do not show signs of threats to the rules of thumb. Unfortunately this hypothesis can't be test either because empowerment does not meet the necessary requirements as mentioned above. Therefore hypothesis 1c is rejected. Again, the same explanation can be given about the interaction effect. . The interaction effect between the intensity of NWoW and empowerment has an influence on work-life balance ($F= 49.822$, df=1, p =.000, $R^2$ = .082). The high F-statistic is being confirmed by the t-test for the $R^2$ which shows that the interaction effect is significant (t = 7.058, p<.05).

*Hypothesis 2: Knowledge sharing among employees positively influences the relation between NWoW Intensity and overall productivity.*

The fourth hypothesis contains knowledge sharing among employees. Kurtosis and skwewness here are acceptable but the frequency table show that 81% of all values fall between 4.0 and 5.0, which means that there is very little variances in the results. For this reason, hypothesis 2 is rejected.  On the other hand, knowledge sharing among employees is reliable and the factor analysis shows a considerable amount of correlation between the items. Therefore, it is still interesting to see the potential added value of knowledge sharing among employees that was found in the regression equation. The interaction effect between the intensity of NWoW and knowledge sharing among employees has an influence on overall productivity ($F= 25.362$, df=1, p =.000, $R^2$ = .044). The F-statistic is not so high in comparison to the previous three hypotheses. While the low value is not being confirmed by the t-test for the $R^2$ which shows that the interaction effect is significant (t = 5.036, p<.05).

*Task complexity*
There is not a hypothesis for task complexity because it is not an essential point for this research. Nevertheless, some interesting results need to be mentioned. The interaction effect of intensity of NWoW and task complexity has been tested for each dependent variable. The results show that the interaction effect has an influence on all three dependent variables (commitment $F= 4.997$ , df=1, p =.026, $R^2$ = .009; work-life balance $F= 21.818$ , df=1, p =.000, $R^2$ = .038;  overall productivity  $F= 21.684$ , df=1, p =.000, $R^2$ = .037). The F-statistics are rather low, especially for commitment but the t-values show that the interaction effects are significant.

### 4.4.3 POST-HOC ANALYSIS

After testing the hypotheses, the model is tested again to see how the results are if the number of variables are reduced. In the post-hoc model the following has been tested: the interaction effect of the independent variables {empowerment *intensity of NWoW} and {knowledge sharing among employees *intensity of NWoW} on the three dependent variables. These dependent variables are not changed. It is interesting to see that the regression coefficients are higher with the interaction effect. The $R^2$ for commitment has changed from $R^2 = .092$ to $R^2 = .093$, work-life balance from $R^2 = .0.03$ to $R^2 = .082$ and overall productivity (interaction effect knowledge sharing among employees and intensity of NWoW) from .029 to $R^2 = .044$ and (interaction effect empowerment and intensity of NWoW) $R^2 = .166$ to $R^2 = .112$, which means that only the last regression coefficient in the previous row is lower than before. The lower $R^2$ means that the effect from only empowerment is higher than the interaction effect of empowerment and intensity of NWoW. Based on the results of the regression analysis the theoretical model needed to be revised. The revised model is presented in the figures 5, 6 and 7. The models are based on the post-hoc analysis.
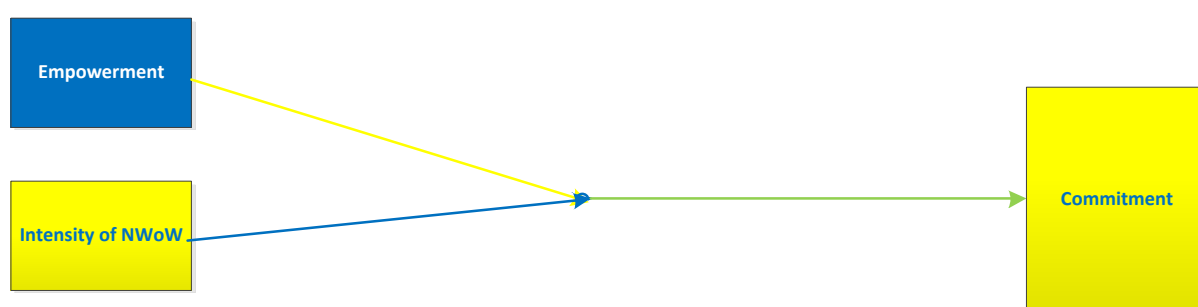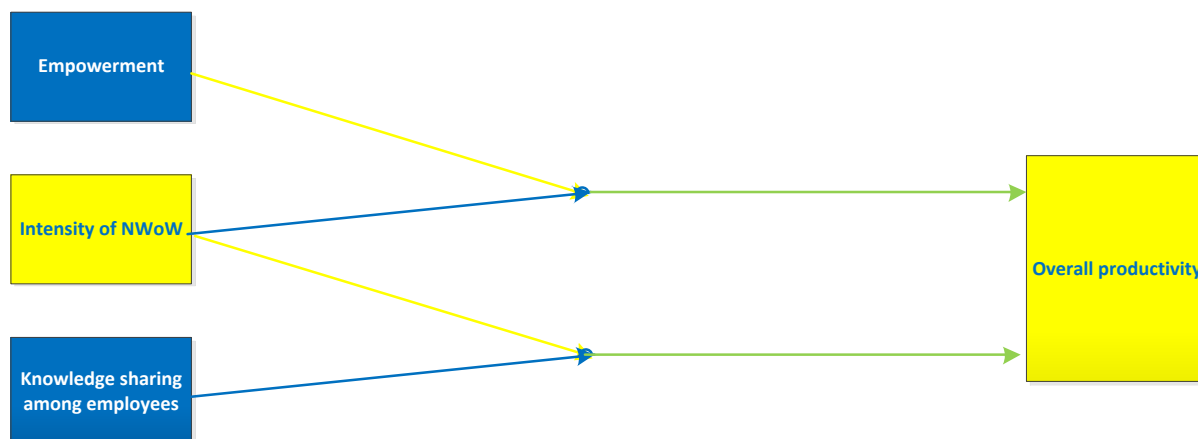


FIGURE 5: REVISED RESEARCH MODEL COMMITMENT



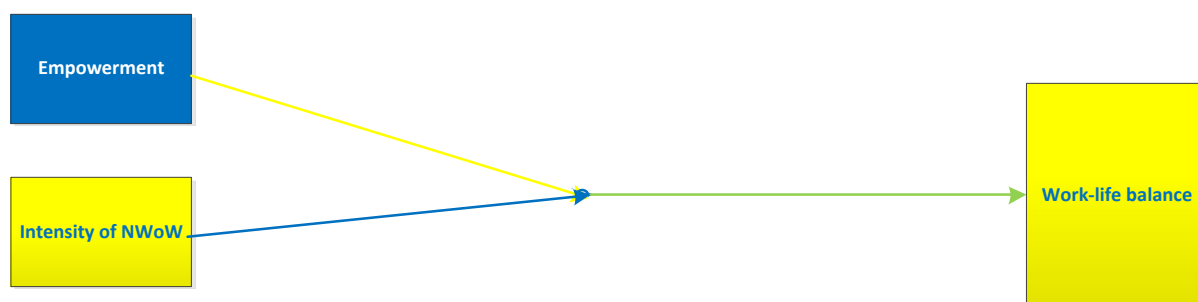FIGURE 6: REVISED RESEARCH MODEL OVERALL PRODUCTIVITY



FIGURE 7: REVISED RESEARCH MODEL WORK-LIFE BALANCE

# 5    CONCLUSION

To recapitulate, the research objectives of this research were:
- Relate popular literature to NWoW to create a typology applicable on Dutch organizations;
- Create a theoretical framework that includes scientific and popular literature and covers the major differences between the traditional and NWoW, competencies of employees and managers within the context of NWoW;
- Develop a questionnaire that assesses employees and managers in their tasks regarding NWoW;
- Provide an analysis containing the current extent to which competencies of employees and managers are ready for NWoW in terms of strong and weak points;
- Provide management an analysis with recommendations for improving manager and employee competencies towards NWoW for Alliander.

To achieve these objectives, first a literature study was performed in order to explore what is known about NWoW, traditional way of working, and competencies of employees and managers regarding NWoW. Second, a survey was developed and spread out to analyze the current extent to which competencies of employees and managers are present for successful NWoW. In this chapter, the results will be analyzed from the survey, in the outline of a discussion. Based on these results implications for Alliander (sub question 4) will be presented, the conclusions and the limitations of this research. Finally, recommendations for further research will be given.

## 5.1    DISCUSSION

This research aimed at providing insights into the core aspects of NWoW. The theoretical framework that is build is supporting organizations in assessing employees and managers in their competencies regarding NWoW. However, this study is merely a first step in identifying the competencies in enhancing NWoW within an organization. This research has some interesting findings that need to be discussed.

In the first place, the results from the survey showed quite some differences between the dimensions within the intensity of NWOW at Alliander compared to UMC Utrecht. Although it is clear that UMC Utrecht applied the concept of NWoW and at Alliander it is considered but not implemented yet, the overall intensity of NWoW is approximately the same. It seems that Alliander already implemented some of the characteristics of NWoW without using the concept. For example, time and place independent working is implemented at UMC Utrecht without the possibility - for the majority - of working at home (16%), while Alliander (80%) is able to work at home. According to Baane et al. (2010) NWoW needs to be applied collectively and to a full extent to be successful as a concept. On basis of these results it is fair to say that an extent of virtualness – as stated by Martins et al. (2004) -  is more likely to count for a way of working than NWoW as an opposite to OWoW.

Second, the model has been studied in two separate settings, one for employees and one for managers. For employees, the findings show a significant result for the interaction effect between empowerment and intensity of NWoW on the three performance goals commitment, overall productivity and work-life balance. There is also an interaction found between knowledge sharing among employees and intensity of NWoW on the performance goal overall productivity. This means that it can be stated that empowerment and knowledge sharing positively contribute to meet the performance goals of NWoW. Unfortunately, due to a lack in reliability and validity the managerial competencies needed to be dropped from the research. Furthermore, due to the presence of heteroscedasticity and multicollinearity in the results it was hard to draw any statistical conclusion. Therefore, all managerial competencies failed the assumptions and needed to be dropped.

The results are in contrast with the theory, which assume that employees need five competencies and managers six competencies to meet the performance goals of NWoW. The question is how is that possible? The results do not provide evidence for the assumed competencies but the analysis (chapter 4.2.1) show high mean scores for the assumed competencies and NWoW questions as well. This could mean that the managers at Alliander already posses the assumed competencies for NWoW. Alliander is not working with the concept of NWoW yet but they are already busy with project groups to discuss about NWoW. For every department within

Alliander, there is a different project group. The thought behind these different project group is that managers and employees knew that the top of the organization was debating about whether or not to adopt the concept of NWoW. After some time, the top decided that they believed in the concept of NWoW and hired a program manager to create and implement this concept. In the meantime, the different project groups were still participating and coming up with new ideas about NWoW for Alliander. To give an example, recently a manager within Alliander organized a tutorial about NWoW and a guest speaker was invited to give more information about the concept of NWoW. Keeping this information in mind, it could be possible that because of the project groups, the managers within Alliander already developed several competencies for NWoW. The mean outcomes for individualized consideration, trust, supporting knowledge sharing among employees were surprisingly high (see appendix 7, table 19) for the fact that NWoW is not yet implemented. The results of the survey of employees show that they already posses empowerment and knowledge sharing among employees. Also, employee acceptance of IT shows acceptable results as a competence. This could be a result of the project groups that were mentioned at the results of the managers.

Another finding that needs to be addressed is the difference in task complexity between Alliander compared to UMC Utrecht. The results show that the interaction effect has an influence on work-life balance, overall productivity, and commitment. The employees within Alliander have a lower task complexity than within UMC Utrecht. This difference can be explained by the fact that the respondents from UMC Utrecht work mainly in project teams. While this is not the case within Alliander. A criterion for overall performance is productivity, in this research the low task complexity within Alliander shows a higher overall productivity compared to UMC Utrecht. This seems a logic outcome because a low task complexity involves routine tasks, low task interdependence and less complex tasks. A disadvantage of a low task complexity can be less innovative behaviour. According to De Leede, Kraan, Den Hengst, & Van Hooff (2008) low task complexity leads to less innovative behaviour. Innovation can be defined as "the intentional introduction and application within an organization of ideas, processes, products or procedures, new to the unit of adoption, designed to significantly benefit the organization or wider society" (Shipton, West, Dawson, Birdi, & Patterson, 2006, p.3). Innovative work behaviour is directed towards the initiation and international introduction of new and useful ideas, processes, products or procedures (De Jong, 2007). Alliander needs to be innovative as well, especially with the rare sustainable energy sources and provisions for the future. Innovation is an essential part in subjects like electric cars, solar panels, and finding alternatives for the rare fuel. In this case, the low task complexity can be a weak point and an adverse factor for the future within the departments of Alliander who participated in this research. On the other hand, there are several other departments within Alliander of which the extent of task complexity is unknown. Furthermore, the set of tasks and function of employees determine the task complexity as well. Just as the workflows, team task requirements are distinct through task environment, external and internal coupling together conceptualize task complexity.

Proceeding from the point of view that the competencies are presented to a certain extent within Alliander, it is the question whether the competencies are a realistic amount, or that it is just too much for a person to develop. Scientific literature does not provide clear answers to this question. Popular scholarly literature stated that it is important not to develop too much competencies at the same time. Furthermore, when developing multiple competencies at once it is important to develop those competencies that can be clustered because of a related nature. According to Ulrich, competencies need to be aligned with the business strategy to provide focus and energy (Ulrich, cited in Cortada & Woods, 1999). Therefore, employees need to understand what the long-term goals, objectives and vision of the organization are. Thus, in order to contribute to the organization's innovativeness, employees have to know what the organizational strategic goals and objectives are. Alliander recently updated the competence profile with the support of several managers and employees from different departments. This means that the competencies are developed by the employees, in this case Alliander refers to 'competencies are developed for and by employees'. To conceptualize, there are two different competence profiles: one for employees and one for managers. Before the implementation of the concept of NWoW within Alliander, the competence profile needs to be adjusted with the competencies empowerment and knowledge sharing among employees. This adjustment can be done in the form of discussion groups and workshops because Alliander often make use of these kinds of meetings.

As stated before, the theory assumes that employees need five competencies and managers six competencies to meet the performance goals of NWoW. It could be that besides these competencies, more factors play a role to meet the performance goals, for example the mental changes. Employees within an organization have to deal with mental changes to work with the concept of NWoW. In all organizations, there is a natural tendency to resist change. People's past experience or change can affect their level of commitment to an organization (Hayes, 2010). It is a tacit set of expectations between every member of an organization and those who represent them, and it includes concepts like fairness, reciprocity and a sense of mutual obligation. If employees feel that the organization failed to keep its side of the bargain, they may invest less effort in their work, be less inclined to innovate and less tending to respond to the innovations or changes proposed by others. According to Miles (1982), organizations have freedom and choice in how they adjust to a changing environment and it is this choice that offers the opportunity for learning. According to Hayes (2010) learning is a core element of almost all interventions. Organizational learning entails the collective ability to act more effective. This collective nature of learning is especially important in complex environment because a manager is not always the best individual to identify opportunities and threats. Employees may have information that is valuable input to strategy formulation, in this case NWoW. Moreover, the quality of the response to any opportunities or threats for NWoW that are identified, could require employees located in different functions to collaborate and learn from each other in order to design a high quality concept of NWoW for Alliander. The creation of this concept is a development process before, during, and after the implementation of NWoW.

Besides mental changes, other factors could play a role. For example the culture within an organization. Taking into account that the major driver of organizational and individual performance is a corporate culture (Carleton & Lineberry, 2004). Other factors are resources like time and money. Alliander already decided that the new work environment encloses rebuilding's of several housings. This is an investment in order to make it possible for knowledge workers to work independently from time and place in NWoW. That will be a good investment for the knowledge workers but there are still labour workers in the workforce. Within Alliander there are several mechanics that make sure that the national grid is reliable, save, and improved. For these workers it is not always possible to work independently from time and place, for example when there is a technical malfunction that needs to fixed immediately. This does not mean that NWoW cannot work for mechanics but it will require a different point of view. For example, work-life balance. It can be stated that the average mechanics desires a work-life balance. A work-life balance can be created by self-scheduling which will give the mechanic the opportunity to create to a certain extent his or her roster. Self-scheduling could be one of the options for labour workers that Alliander need to take into account during the creation of the concept for NWoW.

## 5.2    ADVICE FOR ALLIANDER

Before the conclusion can be given, the last sub question needs to be answered:

*Which steps can be taken at Alliander to (further) enhance the competencies of the employees and managers to improve the outcome of the performance goals of NWoW?*

Considering from the point of view that Alliander is not yet working with the concept NWoW it is important that the information about NWoW is regularly communicated. The communication involves the information about the change that is an effect of attending to the concept of NWoW. Currently, the intranet from Alliander is often used for communication from the top management to the employees. This means that intranet needs to be up-to-date about NWoW and it would be effective to make a special page about NWoW. Furthermore Alliander could make use of the post by sending important information through this channel. Employees within Alliander are familiar with receiving important information by post.

Another point is the approach for the strategy to implement NWoW. This approach called organizational learning and it involves the collective ability to act more effective. As stated before, this collective nature of learning is important because a manager is not always the best individual to identify opportunities and threats. Employees within Alliander may have information that is valuable input to strategy formulation. Moreover, the

quality of the response to any opportunities or threats for NWoW that are identified, could require employees located in different functions to collaborate and learn from each other in order to design a high quality concept of NWoW for Alliander. Organizational learning can be done in the outline of a brainstorm group. This brainstorm group must be joined by the new program manager of NWoW, several managers and employees of the different departments and functions to create a high quality concept of NWoW for Alliander. This means that labour workers should not be forgotten. NWoW is often associated with knowledge workers but a certain amount of employees within Alliander are labour workers (e.g. mechanics).

This research aimed at providing insights into the core aspects of NWoW. To achieve the research objectives, first a literature study was performed in order to explore the core aspects of NWoW and the competencies that are needed for successful NWoW. Second, a survey was developed in order to determine the current position of Alliander regarding NWoW and her aspects (e.g. the intensity of NWoW, task complexity, assumed competencies and performance goals of NWoW). In section 4.2.1 the results of the survey were analyzed for all the assumed competencies. The post-hoc analysis (section 4.4.3) indicates that empowerment and knowledge sharing among employees contributes positively to meet the performance goals of NWoW. The results for employees show adequate results for empowerment and knowledge sharing among employees, considering the fact that NWoW is not yet implemented. It is important that the competence empowerment will be more presented in the future in order to increase the performance goals work-life balance, overall productivity and commitment. In practice, empowerment means that employees find that their work goals or principles are in relation to their ideas or standards. Furthermore, empowerment is often linked to as sell-efficacy, in real terms this means the degree to which the employee beliefs he or she can competently perform tasks or activities when he or she tries. Another enabler of empowerment is autonomy, for example that employees can make their own decision about work methods and effort. The other competence that needs to be addressed is knowledge sharing among employees. This competence is present within Alliander but can be improved. There are various ways of doing this. For example, digitalize the information that is important for employees to perform tasks. This information could be the information about NWoW on the intranet page of Alliander. When this information is completely up to date, others within Alliander can easily find the information that is necessary to take the knowledge. It is therefore important to know which person possesses certain knowledge within the organization. Thus, to learn from each other, thus to share knowledge it is needed to reconstruct knowledge. In conclusion, the two competencies need to be added into the competence profile of Alliander before the implementation of the concept of NWoW. Furthermore, Alliander can provide training to successfully inflow these two competencies.

Regarding intensity of NWoW, Alliander scores rather high for both managers and employees. The dimension access and connectivity to knowledge show a notably lower result. This low result is a consequence of not making use of IT resources and applications and or social media. Alliander can increase this dimension by making more IT recourses available and remove the blockades on internet to increase the use of social media. Furthermore, it appears that the assumed competence supporting employee's acceptance of IT for mangers scores rather low. The support of the managers for the acceptance of IT is necessary in order to stimulate employees to accept and handle IT. Furthermore, it appears that there are differences between the departments and the different dimensions of NWoW. The reasoning behind this is probably the fact that every department has their own project group for NWoW. It is an advice for the new program manager to bring these project groups together to create one project group for Alliander.

The results for managers are not significantly proved but an advice how to deal with low scores can be given. The competence support knowledge sharing among employees is present. The score on empowerment impact is relatively low. It is interesting to find out whether the managers have a significant impact on their team because the results show otherwise. For managers, output control scores relatively low considering the fact that output control is an important enabler for NWoW. Of course, Alliander is not yet working with the concept of NWoW but training or coaching regarding output control can be a way to increase the score on this assumed competence.

Regarding the performance goals, some interesting results showed up. Both managers and employees are having troubles with their work-life balance. For example the fact that employees feel often drained when they go home from work because of work pressures and problems. This could be because the pressure of work is

too high. Managers have difficulties with finding a work-life balance and cannot always find time for their personal life. Since the fact that work-life balance is a performance goals of NWoW, Alliander needs to tackle the problems to ensure that the work-life balance is it not a problem anymore.

The results of task complexity need to be explained. Task complexity was an assumed moderator which means that task complexity should influence the relation between the intensity of NWoW and the performance goals. The outcome of task complexity showed that Alliander has a low task complexity, which involves routine tasks, low task interdependence and less complex tasks. Considering the fact that Alliander is an innovative organization it is important that the employees show innovative behaviour. Especially with the rare sustainable energy sources and provisions for the future. Innovation is an essential part in subjects like electric cars, solar panels, and finding alternatives for the rare fuel. According to this research, the low task complexity can be a weak point and an adverse factor for the future, regarding innovation within the departments of Alliander who participated in this research. It needs to be stated that the task complexity within the other departments of Alliander is unknown.

## 5.3    CONCLUSIONS

The main research question of this study was: '*Which competencies do employees and managers at Alliander need to meet the performance goals of NWoW?*' The findings indicate that there are competencies that employees need to meet the performance goals of NWoW. In table 11, the proved and unproved competencies of employees are given. The competencies were all assumed to be moderators in the relation between the intensity of NWoW and the performance goals. After several statistical tests, the three competencies appeared to be antecedent variables. The antecedent variable influences both the independent and dependent variable. In this research the interaction effect between the intensity of NWoW and the three assumed competencies influences the performance goals. The interaction effect of the intensity of NWoW and employee acceptance of IT is not significant, while the interaction effect of the intensity of NWoW and empowerment is significant for the three performance goals. The interaction effect of the intensity of NWoW and knowledge sharing among employees is significant on the performance goal overall productivity. Moreover, the results of employees showed that the interaction effect of the intensity of NWoW and task complexity is significant for the performance goals.

| Proved competencies | Unproved competencies |
|---|---|
| Empowerment | Employee Acceptance of IT |
| Knowledge sharing among employees | |

TABLE 11: PROVED AND UNPROVED COMPETENCIES OF EMPLOYEES

Unfortunately, no evidence is found for the competencies that managers need to meet the performance goals. The six assumed competencies cannot be proved as a moderator between the intensity of NWoW and the three performance goals. Due to a lack in reliability and validity, several managerial competencies needed to be dropped from the research.  The lack in reliability and validity is caused by the low amount of respondents for managers. Even after the data were aggregated from UMC Utrecht and Alliander the N remained low. Furthermore, due to the presence of heteroscedasticity and multicollinearity in the results, it was hard to draw any statistical conclusion. Besides the assumed competencies, task complexity was expected to influence the relation between the intensity of NWoW and the performance goals but this is not the case. The results of managers showed that the interaction effect of the intensity of NWoW and task complexity is not significant on the three performance goals. In table 12, the unproved competencies of managers are given.

| Proved competencies | Unproved competencies |
|---|---|
| | Individualized consideration |
| | Trust |
| | Empowerment Impact |
| | Supporting knowledge sharing among employees |
| | Supporting employees acceptance of IT |
| | Output Control |

TABLE 12: PROVED AND UNPROVED COMPETENCIES OF MANAGERS

In conclusion it can be stated that for employees, empowerment and knowledge sharing positively contribute to meet the performance goals of NWoW at Alliander.

This research had several limitations that have to be discussed. A limitation of the study is the small number of respondents for the managers. Aggregating the data was necessary but unfortunately the N for the mangers remained too low to perform statistical tests. The data from UMC Utrecht for employees also had a low number of respondents. Therefore the data for employees needed to be aggregated as well.

Another limitation of this study was that some questions of the questionnaire were too vague or suggestive for the respondents. For instance, the question about the IT resources, where the respondent could choose a desktop as resource. Instead of choosing a desktop, some respondents filled in the open area, computer. The same vagueness counts for the question about applications and or social media. The leading questions suggest that an employee is very efficient, like the questions 'I work very efficiently' or 'I am a highly productive employee'.

**Further research**
The data are collected with a cross-sectional study (e.g. self-administered questionnaire). This study makes it possible to draw conclusions about the causality. However, in a qualitative study the respondents give their reasoning behind the answers so more detailed information can be gathered. For example, a starting point can be group discussions or in-depth interviews within an organization. This will give the researcher an impression about the opinions of the employees and managers.  Thus, from observations to general principles (Babbie, 2007).

The subject NWoW is a relatively new and unknown area for many researchers. This research has tried to explain the most important aspects of NWoW. Still, a longitudinal study is needed to come up with more evidence for these important aspects. For example the relation between some control variables and constructs. More extensive research should investigate if these constructs are actually dependent on the control variables. More important, because testing the relationship of the constructs for managers could not be done, researchers should focus more on gaining enough managers respondents. Regarding the complexity of the model and considering the rules of thumb there should be at least 100 managers to test the model.

For all the deleted constructs after the reliability test, it is the question whether they can be associated with NWoW despite of what the theory explains. It could also be that the constructs were not reliable because the original scale was not used. For example the original scale of commitment contained 15 items. In this research, six of the items were used. Finally, to obtain a sufficient Cronbach Alpha, only two items remained. Therefore it is wise to use the original scale of Mowday et al. (1979) for further development of the survey (for both managers and employees). For managers the constructs individualized consideration, trust and productivity were deleted after the reliability test. The construct trust was deleted because this construct contained only one item. Further development is necessary before the survey is spread out again, this means developing more items for the construct trust. Furthermore, it would be interesting to investigate the low Cronbach alpha for the constructs individualized consideration and productivity.

The competence output control for managers was deleted after the reliability test. A longitudinal study may provide evidence for this competence. The equivalent of output control is coordination by trust. According to De Leede et al. (2008) coordination by trust leads to more innovative behaviour and coordination by output leads to higher productivity within virtual teams. It would be interesting to find out which from these two types of control can be linked to NWoW. Or maybe a new form of control, in the form of combining the two types of control can be essential for NWoW. Considering the fact that the relation between a manager and employee is based on mutual respect and trust and that the employee is assessed on results, it could be that a new form of control is obligatory for successful NWoW.

For this research, task complexity is taken into account. It appears that task complexity has an influence on the intensity of NWoW and the three performance goals. Furthermore, according De Leede et al. (2008) a low task complexity leads to less innovative behaviour. Therefore it would be interesting to research if innovation is a

performance goal for NWoW and if a low task complexity leads to less innovative behaviour in the concept of NWoW.

This research focused on the changes that employees and managers have to deal with regarding the concept of NWoW. Besides the changes of employees it needs to be researched whether or not the culture of an organization is influencing the concept of NWoW, taking into account that the major driver of organizational and individual performance is a corporate culture (Carleton & Lineberry, 2004).

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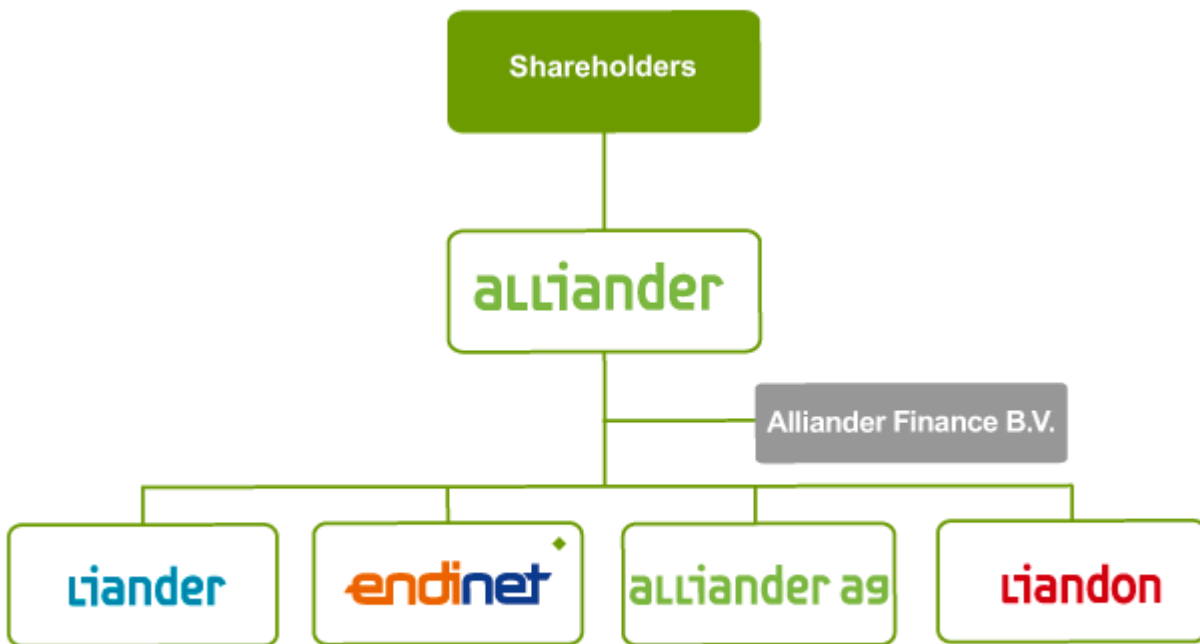
FIGURE 8: OVERVIEW OF THE CORPORATE PROFILE OF ALLIANDER

Geachte collega,

Mijn naam is Annemiek te Lintelo en het afgelopen half jaar ben ik in het kader van mijn studie bezig geweest om te onderzoeken welke competenties kunnen bijdragen aan het succes van het concept 'Het Nieuwe Werken'.

Voor dit onderzoek zijn twee vragenlijsten ontwikkeld, één voor medewerkers en één voor leidinggevenden. Op deze manier geeft het onderzoek een compleet beeld wat betreft de kansen die 'Het Nieuwe Werken' effectiever, efficiënter en plezieriger kunnen maken voor zowel medewerkers als leidinggevenden. Ik zou het op prijs stellen wanneer u mij, en daarmee uzelf, wilt helpen door het invullen van deze vragenlijst.

Door op onderstaande link te klikken wordt u automatisch doorverwezen naar de vragenlijst voor medewerkers. Deze vragenlijst neemt ongeveer 10 minuten van uw tijd in beslag en zal anoniem en vertrouwelijk worden behandeld. De inhoud van de vragenlijst bestaat hoofdzakelijk uit meerkeuze vragen waarnaast u, in het kader van verbeteringsmogelijkheden, de gelegenheid wordt geboden opmerkingen te plaatsen dan wel suggesties te doen.

<Link>

Voor eventuele vragen of onduidelijkheden verzoek ik u een e-mail te sturen naar annemiek.te.lintelo@alliander.com. Ik dank u alvast hartelijk voor uw medewerking.

Met vriendelijke groet,

Annemiek te Lintelo

*Achtergrondgegevens:*

Wat is uw geslacht?
☐ Man
☐ Vrouw

Wat is uw leeftijd?
☐ < 30 jaar
☐ 30 – 45 jaar
☐ > 45 jaar

Wat is de hoogste opleiding die u heeft afgerond? (Staat uw opleiding er niet tussen, kies dan degene die er het dichts bij in de buurt komt)
- Basisonderwijs (Lagere school)
- VMBO (Of LBO)
- VMBO-T (Of MAVO)
- HAVO/VWO
- Middelbaar beroepsonderwijs (MBO)
- Hoger beroepsonderwijs (HBO)
- Wetenschappelijkonderwijs (WO)

Werkt u…?
☐ Voltijd
☐ Deeltijd

Hoelang bent u reeds in dienst van deze organisatie?
☐ Minder dan 6 maanden
☐ 6 maanden tot 1 jaar
☐ 1 jaar tot 5 jaar
☐ 5 tot 10 jaar
☐ 10 tot 20 jaar
☐ 20 jaar of langer

Wat is uw functie?

☐

Op welke afdeling bent u werkzaam?

☐

*De volgende vragen gaan over de mate waarin de eigenschappen van 'Het nieuwe werken' aanwezig zijn bij uw organisatie.*

Ik kan zelf bepalen waar ik wil werken (Hier zijn meerdere antwoorden mogelijk):
- ☐ Vaste werkplek op kantoor
- ☐ Flexwerkplek op kantoor
- ☐ Thuis
- ☐ Onderweg
- ☐ Bij klanten/ opdrachtgevers
- ☐ Elders, namelijk: _____

Ik kan zelf bepalen wanneer ik werk ( kantooruren, tijd of dag):
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Op de momenten dat ik werk bepaal ik zelf de volgorde van mijn werkzaamheden:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Over welke ICT middelen beschikt u tijdens het uitvoeren van uw werkzaamheden (Hier zijn meerdere antwoorden mogelijk):
- ☐ Desktop computer
- ☐ Laptop
- ☐ Mobiele telefoon
- ☐ Smartphone (Een smartphone kan ook beschouwd worden als een handcomputer of PDA die tegelijk ook een telefoon is)
- ☐ E-book reader (Een e-book reader is alleen bedoeld om op te lezen)
- ☐ Tablet (Op een tablet kunt u naast lezen ook documenten uploaden en lezen, vb: iPad)
- ☐ Video conferencing
- ☐ Anders, namelijk: _____

Welke applicaties en/of social media gebruikt u om informatie en kennis te delen voor uw taak?
- ☐ Skype
- ☐ MSN
- ☐ Hyves
- ☐ Facebook
- ☐ Yammer
- ☐ LinkedIn
- ☐ Twitter
- ☐ Youtube
- ☐ Netwerkschijf
- ☐ Intranet
- ☐ Anders, namelijk: _____

De informatie die ik nodig heb om mijn werk uit te kunnen voeren is digitaal beschikbaar:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Ik word beoordeeld op de resultaten die ik boek:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Ik word beoordeeld op de tijd die ik aan mijn werk besteed:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Ik heb de vrijheid om mijn (secundaire) arbeidsvoorwaarden naar eigen inzicht in te vullen middels het Persoonlijk Budget Arbeidsvoorwaarden (opleidingen, vakantiedagen, flexibele werkweek, eindejaarsuitkering):
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

De relatie met mijn manager is gebaseerd op wederzijds respect en vertrouwen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

***Er volgen nu drie vragen over uw werkzaamheden.***

In welke mate hangt het resultaat van uw werk af van het resultaat van anderen?
- ☐ Nooit
- ☐ Zelden
- ☐ Af en toe
- ☐ Een matige hoeveelheid
- ☐ Een groot deel

Hoeveel procent van uw werk besteedt u aan routinematige taken? (Routinematige taken zijn de repeterende taken van een medewerker)
- ☐ 0-20%
- ☐ 21-40%
- ☐ 41-60%
- ☐ 61-80%
- ☐ 81-100%

Mijn taken zijn bij elkaar genomen erg complex (Denk hierbij aan de tijd die u nodig heeft om een ander uw taken te leren):

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

*Er volgen nu vragen over de competenties die nauw samenhangen met 'Het Nieuwe Werken'.*

Mijn werk is erg belangrijk voor me:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het werk dat ik doe betekent veel voor me:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik heb vertrouwen in mijn bekwaamheid om mijn werk te doen:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben in het bezit van de vaardigheden die ik nodig heb om mijn werk uit te kunnen voeren:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik heb genoeg zelfstandigheid om mijn taken naar eigen inzicht uit te voeren:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik deel regelmatig kennis met collega's:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Kennisdelen met collega's is waardevol voor mij:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ga in de toekomst mijn werkverslagen en officiële documenten nog meer met collega's delen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik deel mijn know-where en know-whom altijd op verzoek van collega's (Know-where: Is weten waar kennis te halen is. Know-whom: Is weten wie over bepaalde kennis beschikt):
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik probeer expertise die ik heb opgedaan tijdens opleidingen of trainingen op een effectieve manier met collega's te delen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

*In één van de vorige vragen hebben we u gevraagd naar de aanwezige technologische middelen en social media. Onder deze technologische middelen en social media wordt verstaan: Smartphone, Laptop, Tablet, E-reader, Facebook, Hyves, LinkedIn, Skype, Twitter, Yammer, netwerkschijf, intranet, etc. Probeer deze technologische middelen in uw achterhoofd te houden wanneer u de volgende vragen beantwoordt:*

Het gebruik van deze technologieën verbetert de kwaliteit van mijn werk:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het gebruik van deze technologieën ondersteunt mij tijdens belangrijke aspecten van mijn werk:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het gebruik van deze technologieën verhoogt mijn productiviteit:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het is voor mij eenvoudig om deze technologieën te laten doen wat ik wil:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het kost mij veel moeite om de benodigde vaardigheden voor het gebruik van deze technologieën onder de knie te krijgen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

*De volgende vragen gaan over de uitkomsten van 'Het Nieuwe Werken'. De onderwerpen van deze vragen zijn de balans tussen werk en privé, productiviteit, en de betrokkenheid bij uw organisatie.*

Het is voor mij moeilijk om een goede balans te vinden tussen de behoeftes en vereisten van werk en privé:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben voldoende momenten met mijn privé leven bezig om mijn ideale balans tussen werk en privé te vinden en te behouden:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Wanneer ik verlof opneem, ben ik in staat om werk met rust te laten en mijzelf te vermaken:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben vaak uitgeput na een werkdag door stress en problemen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Al met al, ben ik tevreden over mijn balans tussen werk en privé:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Binnen mijn afdeling behoren mijn eigen prestaties naar in mijn ogen tot de beste 25%:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben tevreden over de kwaliteit van mijn werkresultaten:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik werk erg efficiënt:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben een zeer productieve medewerker:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Mijn leidinggevende vindt dat ik een efficiënte medewerker ben:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben bereid om meer energie dan nodig in deze organisatie te steken wanneer dit leidt tot een succesvollere organisatie:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het soort werk dat ik moet verrichten is minder belangrijk zolang ik in deze organisatie mag werken:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Mijn persoonlijke doelstellingen komen overeen met de doelstellingen van de organisatie:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik vertel mensen met trots dat ik werkzaam ben bij deze organisatie:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het maakt mij niet uit waar ik werk, zolang het soort werk maar hetzelfde is:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Gezien de huidige omstandigheden is er voor mij niet veel nodig om de organisatie te verlaten:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

------------------ Einde vragenlijst ------------------

Hartelijk bedankt voor het invullen van de vragenlijst. Heeft u naar aanleiding van het invullen van de vragenlijst nog opmerkingen en/of suggesties?

Mocht u geïnteresseerd zijn in de resultaten van de vragenlijst, dan verzoek ik u hier uw e-mailadres in te vullen.

Geachte collega,

Mijn naam is Annemiek te Lintelo en het afgelopen half jaar ben ik in het kader van mijn studie bezig geweest om te onderzoeken welke competenties kunnen bijdragen aan het succes van het concept 'Het Nieuwe Werken'.

Voor dit onderzoek zijn twee vragenlijsten ontwikkeld, één voor medewerkers en één voor leidinggevenden. Op deze manier geeft het onderzoek een compleet beeld wat betreft de kansen die 'Het Nieuwe Werken' effectiever, efficiënter en plezieriger kunnen maken voor zowel medewerkers als leidinggevenden. Ik zou het op prijs stellen wanneer u mij, en daarmee uzelf, wilt helpen door het invullen van deze vragenlijst.

Door op onderstaande link te klikken wordt u automatisch doorverwezen naar de vragenlijst voor leidinggevenden. Deze vragenlijst neemt ongeveer 10 minuten van uw tijd in beslag en zal anoniem en vertrouwelijk worden behandeld. De inhoud van de vragenlijst bestaat hoofdzakelijk uit meerkeuze vragen waarnaast u, in het kader van verbeteringsmogelijkheden, de gelegenheid wordt geboden opmerkingen te plaatsen dan wel suggesties te doen.

<Link>

Voor eventuele vragen of onduidelijkheden verzoek ik u een e-mail te sturen naar annemiek.te.lintelo@alliander.com. Ik dank u alvast hartelijk voor uw medewerking.

Met vriendelijke groet,

Annemiek te Lintelo

***Achtergrondgegevens:***

Wat is uw geslacht?
- ☐    Man
- ☐    Vrouw

Wat is uw leeftijd?
- ☐    < 30 jaar
- ☐    30 – 45 jaar
- ☐    > 45 jaar

Wat is de hoogste opleiding die u heeft afgerond? (Staat uw opleiding er niet tussen, kies dan degene die er het dichts bij in de buurt komt)
- Basisonderwijs (Lagere school)
- VMBO (Of LBO)
- VMBO-T (Of MAVO)
- HAVO/VWO
- Middelbaar beroepsonderwijs (MBO)
- Hoger beroepsonderwijs (HBO)
- Wetenschappelijk onderwijs (WO)

Werkt u…?
- ☐    Voltijd
- ☐    Deeltijd

Hoelang heeft u al een leidinggevende positie?
- ☐    Minder dan 6 maanden
- ☐    6 maanden tot 1 jaar
- ☐    1 jaar tot 5 jaar
- ☐    5 tot 10 jaar
- ☐    10 tot 20 jaar
- ☐    20 jaar of langer

Wat is uw functie?

[            ]

Op welke afdeling bent u werkzaam?

[            ]

*De volgende vragen gaan over de mate waarin de eigenschappen van 'Het nieuwe werken' aanwezig zijn bij uw organisatie.*

Ik kan zelf bepalen waar ik wil werken (Hier zijn meerdere antwoorden mogelijk):
- ☐ Vaste werkplek op kantoor
- ☐ Flexwerkplek op kantoor
- ☐ Thuis
- ☐ Onderweg
- ☐ Bij klanten/ opdrachtgevers
- ☐ Elders, namelijk: [ ]

Ik kan zelf bepalen wanneer ik werk (kantooruren, tijd of dag):
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Op de momenten dat ik werk bepaal ik zelf de volgorde van mijn werkzaamheden:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Over welke ICT middelen beschikt u tijdens het uitvoeren van uw werkzaamheden (Hier zijn meerdere antwoorden mogelijk):
- ☐ Desktop computer
- ☐ Laptop
- ☐ Mobiele telefoon
- ☐ Smartphone (Een smartphone kan ook beschouwd worden als een handcomputer of PDA die tegelijk ook een telefoon is)
- ☐ E-book reader (Een e-reader is alleen bedoeld om op te lezen)
- ☐ Tablet (Op een tablet kunt u naast lezen ook documenten uploaden en lezen, vb.: iPad)
- ☐ Video conferencing
- ☐ Anders, namelijk: [ ]

Welke applicaties en/of social media gebruikt u om informatie en kennis te delen voor uw taak?
- ☐ Skype
- ☐ MSN
- ☐ Hyves
- ☐ Facebook
- ☐ Yammer
- ☐ LinkedIn
- ☐ Twitter
- ☐ Youtube
- ☐ Netwerkschijf
- ☐ Intranet
- ☐ Anders, namelijk: [ ]

De informatie die ik nodig heb om mijn werk uit te kunnen voeren is digitaal beschikbaar:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Ik word beoordeeld op de resultaten die ik boek:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Ik word beoordeeld op de tijd die ik aan mijn werk besteed:
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

Ik heb de vrijheid om mijn (secundaire) arbeidsvoorwaarden naar eigen inzicht in te vullen middels het Persoonlijk Budget Arbeidsvoorwaarden (opleidingen, vakantiedagen, flexibele werkweek, eindejaarsuitkering):
- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd

De relatie met mijn manager is gebaseerd op wederzijds respect en vertrouwen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

***Er volgen nu drie vragen over de werkzaamheden van uw medewerkers***

In welke mate zijn uw medewerkers afhankelijk van het resultaat van anderen?
- ☐ Bijna nooit
- ☐ Soms
- ☐ Ongeveer de helft van de tijd
- ☐ In hoge mate
- ☐ In zeer hoge mate

Hoeveel procent van het werk besteden uw medewerkers aan routinematige taken? (Routinematige taken zijn de repeterende taken van een medewerker):
- ☐ 0-20%
- ☐ 21-40%
- ☐ 41-60%
- ☐ 61-80%
- ☐ 81-100%

De taken van mijn medewerkers bij elkaar genomen zijn erg complex (Denk hierbij aan de tijd die er nodig is om een ander de taken te leren):

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

***Er volgen nu een aantal vragen over de competenties die nauw samenhangen met 'Het nieuwe werken'.***

Ik luister naar zaken die voor mijn medewerkers van belang zijn:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik behandel mijn medewerkers als individuen in plaats van zomaar een lid binnen mijn afdeling:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik geef mijn medewerkers advies wanneer dat nodig is:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik heb volledig vertrouwen in mijn medewerkers (o.a. de taakuitvoering, zelfdiscipline, en zelfstandigheid):

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik heb veel impact op wat er binnen mijn afdeling of team gebeurt:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik heb een hoge mate van controle over wat er gebeurt binnen mijn afdeling of team:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik heb een grote invloed op de gebeurtenissen binnen mijn afdeling of team:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik deel kennis met mijn medewerkers:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik stimuleer mijn medewerkers om kennis te delen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Kennisdelen met mijn medewerkers is waardevol voor mij:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

*In één van de vorige vragen hebben we u gevraagd naar de aanwezige technologische middelen en social media. Onder deze technologische middelen en social media wordt verstaan: Smartphone, Laptop, Tablet, E-reader, Facebook, Hyves, LinkedIn, Skype, Twitter, Yammer, netwerkschijf, intranet, etc. Probeer deze technologische middelen in uw achterhoofd te houden wanneer u de volgende vragen beantwoordt:*

Ik stimuleer mijn medewerkers om gebruik te maken van de aanwezige technologische middelen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik vind dat mijn medewerkers effectief omgaan met de aanwezige technologische middelen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik communiceer zelf regelmatig met mijn medewerkers via de aanwezige technologische middelen:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Wanneer ik medewerkers beoordeel (voor een opslag of promotie) laat ik de resultaten wat betreft werk meewegen:

- ☐ In het geheel niet gebaseerd op resultaat
- ☐ Beperkt gebaseerd op resultaat
- ☐ Deels gebaseerd op resultaat
- ☐ Voornamelijk gebaseerd op resultaat
- ☐ Volledig gebaseerd op resultaat

Hoe vaak ziet u uw medewerkers?

- ☐ Ik zie mijn medewerkers minder dan één keer per week
- ☐ Ik zie mijn medewerkers minstens één keer per week
- ☐ Ik zie mijn medewerkers een paar keer per week
- ☐ Ik zie mijn medewerkers bijna iedere dag
- ☐ Ik verlies mijn medewerkers bijna niet uit het oog

*De volgende vragen gaan over de uitkomsten van 'Het nieuwe werken'. De onderwerpen zijn de balans tussen werk en privé, productiviteit en de betrokkenheid bij uw organisatie.*

Het is voor mij moeilijk om een goede balans te vinden tussen de behoeftes en vereisten van werk en privé:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben voldoende momenten met mijn privé leven bezig om mijn ideale balans tussen werk en privé te vinden en te behouden:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Wanneer ik verlof opneem, ben ik in staat om werk met rust te laten en mijzelf te vermaken:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben vaak uitgeput na een werkdag door stress en problemen:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Al met al, ben ik tevreden over mijn balans tussen werk en privé:

- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik geloof dat ik een effectieve leidinggevende ben:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Binnen mijn collega leidinggevenden behoren mijn eigen prestaties naar in mijn ogen tot de beste 25%:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben tevreden over de kwaliteit van mijn werkresultaten:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik werk erg efficiënt:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Mijn leidinggevende vindt dat ik een efficiënte leidinggevende ben:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik ben bereid om meer energie dan nodig in deze organisatie te steken wanneer dit leidt tot een succesvollere organisatie:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het soort werk dat ik moet verrichten is minder belangrijk zolang ik in deze organisatie mag werken:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Mijn persoonlijke doelstellingen komen overeen met de doelstellingen van de organisatie:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Ik vertel mensen met trots dat ik werkzaam ben bij deze organisatie:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Het maakt mij niet uit waar ik werk, zolang het soort werk maar hetzelfde is:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

Gezien de huidige omstandigheden is er voor mij niet veel nodig om de organisatie te verlaten:
- ☐ Helemaal niet mee eens
- ☐ Oneens
- ☐ Niet mee eens of oneens
- ☐ Eens
- ☐ Helemaal mee eens

------------------ Einde vragenlijst ------------------

Hartelijk bedankt voor het invullen van de vragenlijst. Heeft u naar aanleiding van het invullen van de vragenlijst nog opmerkingen en/of suggesties?

Mocht u geïnteresseerd zijn in de resultaten van de vragenlijst, dan verzoek ik u hier uw e-mailadres in te vullen.

| Construct | Item | Question | Source |
|---|---|---|---|
| Intensity of NWoW | NWOW01 | I can decide on my own where I want to work | Self developed |
| | NWOW02 | I can decide on my own when I want to work | Self developed |
| | NWOW03 | I determine the order of my tasks during the moments I work | Self developed |
| | NWOW04 | What IT technologies are avaliable to perform your tasks | Self developed |
| | NWOW05 | What applications and/or social media do you use to share knowledge | Self developed |
| | NWOW06 | The information I need to accomplish my work has digital availability | Self developed |
| | NWOW07 | I am assessed on my results | Self developed |
| | NWOW08 | I am assessed on the time I spend on working | Self developed |
| | NWOW09 | The relation between my managers and I is based on mutual respect and trust | Self developed |
| | NWOW10 | I have flexibility to arrange my fringe benefits | Self developed |
| Task complexity | TACO01 | To what extent does your performance depend upon how well others do their job? | Ouchi (1978) |
| | TACO02 | What percentage of your time on the job do you spend carrying out routine tasks? | Ouchi (1978) |
| | TACO03 | My tasks as a whole are complex | Self developed |
| Empowerment | EMPO01 | The work I do is very important to me | Spreitzer (1995) |
| | EMPO03 | The work I do is meaningful to me | Spreitzer (1995) |
| | EMPO04 | I am confident about my ability to do my job | Spreitzer (1995) |
| | EMPO06 | I have mastered the skills necessary for my job | Spreitzer (1995) |
| | EMPO07 | I have significant autonomy in determining how I do my job | Spreitzer (1995) |
| Knowledge sharing among e | KNSH01 | My knowledge sharing with other organizational members is good | Bock et al. (2005) |
| | KNSH02 | My knowledge sharing with other organizational members is valuable to me | Bock et al. (2005) |
| | KNSH03 | I will share my work reports and official documents with members of my organization more frequently in the future | Bock et al. (2005) |
| | KNSH05 | I will always provide my know-where or know-whom at the request of other organizational members | Bock et al. (2005) |
| | KNSH06 | I will try to share my expertise from my education or training with other organizational members in a more effective way | Bock et al. (2005) |
| Employee Acceptance of IT | EAIT01 | Using technological resources improves the quality of the work I do | Self developed |
| | EAIT02 | Technological resources support critical aspects of my job | Davis (1991) |
| | EAIT03 | Using technological resources increases my productivity | Davis (1991) |
| | EAIT04 | I find it easy to get the technological resources to do what I want it to do | Davis (1991) |
| | UAIT05 | I find it takes a lot of effort to become skillful at using technological resources | Davis (1991) |
| Work-life balance | WLBA01 | How difficult or easy is it for you to find a good balance between the demands of your work and your personal and family life? | Hill et al. (2001) |
| | WLBA02 | I have sufficient time away from my job to maintain an adequate balance between my work and personal and family life | Hill et al. (2001) |
| | WLBA03 | When I take a vacation, I am able to separate myself from work and enjoy myself | Hill et al. (2001) |
| | WLBA04 | All in all, how successful do you feel in balancing your work and personal and family life | Hill et al. (2001) |
| | WLBA05 | How often do you feel drained when you go home from work because of work pressures and problems? | Hill et al. (2001) |
| Overall productivity | OVPR01 | Among my work group, I would rate my performance in the top quarter | Staples et al. (1999) |
| | OVPR02 | I am happy with the quality of my work output | Staples et al. (1999) |
| | OVPR03 | I work very efficiently | Staples et al. (1999) |
| | OVPR04 | I am a highly productive employee | Staples et al. (1999) |
| | OVPR05 | My manager believes I am an efficient worker | Staples et al. (1999) |
| Commitment | COMM01 | I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful | Mowday et al. (1979) |
| | COMM02 | I would accept almost any type of job assignment in order to keep working for this organization | Mowday et al. (1979) |
| | COMM03 | I find that my values and the organization's values are very similar | Mowday et al. (1979) |
| | COMM04 | I am proud to tell others that I am part of this organization | Mowday et al. (1979) |
| | COMM05 | I could just as well be working for a different organization as long as the type of work was similar (R) | Mowday et al. (1979) |
| | COMM06 | It would take very little change in my present circumstances to cause me to leave this organization (R) | Mowday et al. (1979) |
| Gender | CTRL01 | What is your gender? | |
| Age | CTRL02 | What is your age? | |
| Education | CTRL03 | What is your level of education? | |
| Employmentcontract | CTRL04 | Do you work...? | |
| Job Tenure | CTRL05 | How long have you been employed here? | |
| Function | CTRL06 | What is your function? | |
| Department | CTRL07 | At what department do you work? | |

TABLE 13: CONSTRUCTS SURVEY EMPLOYEES

| Construct | Item | Question | Source |
|---|---|---|---|
| Intensity of NWoW | NWOW01 | I can decide on my own where I want to work | Self developed |
| | NWOW02 | I can decide on my own when I want to work | Self developed |
| | NWOW03 | I determine the order of my tasks during the moments I work | Self developed |
| | NWOW04 | What IT technologies are avaliable to perform your tasks | Self developed |
| | NWOW05 | What applications and/or social media do you use to share knowledge | Self developed |
| | NWOW06 | The information I need to accomplish my work has digital availability | Self developed |
| | NWOW07 | I am assessed on my results | Self developed |
| | NWOW08 | I am assessed on the time I spend on working | Self developed |
| | NWOW09 | The relation between my managers and I is based on mutual respect and trust | Self developed |
| | NWOW10 | I have flexibility to arrange my fringe benefits | Self developed |
| Task complexity | TACO04 | To what extent does the performance of your employees depend upon how well others do their job? | Self developed |
| | TACO05 | What percentage of the time on the job do your employees spend carrying out routine tasks? | Self developed |
| | TACO06 | My tasks of my employees as a whole are complex | Self developed |
| Individualized consideration | INCO01 | Listens to my concerns | Den Hartog (1997) |
| | INCO02 | Treats me as an individual rather than just as a member of a group | Den Hartog (1997) |
| | INCO03 | Provides advice when it is needed | Den Hartog (1997) |
| Trust | TRST01 | I have full confidence in my employees (e.g. performing tasks, empowerment and interdependence) | Self developed |
| Empowerment impact | EMIM01 | My impact on what happens in my department is large | Spreitzer (1995) |
| | EMIM02 | I have a great deal of control over what happens in my department | Spreitzer (1995) |
| | EMIM03 | I have significant influence over what happens in my department | Spreitzer (1995) |
| Supporting knowledge sharing among employees | SKSE01 | I share knowledge with my employees | Self developed |
| | SKSE02 | I stimulate my employees to share knowledge | Self developed |
| | SKSE03 | Knowledge sharing with my employees is valuable to me | Self developed |
| Supporting employees acceptance of IT | SEIT01 | I stimulate my employees to use the available technological resources | Self developed |
| | SEIT02 | My employees are effective with technological resources | Self developed |
| | SEIT03 | I frequently communicate with my employees through the available technological resources | Self developed |
| Output Control | OUCO01 | When you are evaluating the people who report directly to you for raises or promotions, how much weight do you give to their output records? | Ouchi (1978) |
| | OUCO02 | How often do you see each of the people who reports directly to you? | Ouchi (1978) |
| Work-life balance | WLBA01 | How difficult is it for you to find a good balance between the demands of your work and your personal and family life? | Hill et al. (2001) |
| | WLBA02 | I have sufficient time away from my job to maintain an adequate balance between my work and personal and family life | Hill et al. (2001) |
| | WLBA03 | When I take a vacation, I am able to separate myself from work and enjoy myself | Hill et al. (2001) |
| | WLBA04 | All in all, how successful do you feel in balancing your work and personal and family life | Hill et al. (2001) |
| | WLBA05 | How often do you feel drained when you go home from work because of work pressures and problems? | Hill et al. (2001) |
| Overall productivity | OVPR01 | I believe I am an effective manager* | Staples et al. (1999) |
| | OVPR02 | Among my colleque managers, I would rate my performance in the top quarter* | Staples et al. (1999) |
| | OVPR03 | I am happy with the quality of my work output | Staples et al. (1999) |
| | OVPR04 | I work very efficiently | Staples et al. (1999) |
| | OVPR05 | My manager believes I am an efficient manager* | Staples et al. (1999) |
| Commitment | COMM01 | I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful | Mowday et al. (1979) |
| | COMM02 | I would accept almost any type of job assignment in order to keep working for this organization | Mowday et al. (1979) |
| | COMM03 | I find that my values and the organization's values are very similar | Mowday et al. (1979) |
| | COMM04 | I am proud to tell others that I am part of this organization | Mowday et al. (1979) |
| | COMM05 | I could just as well be working for a different organization as long as the type of work was similar (R) | Mowday et al. (1979) |
| | COMM06 | It would take very little change in my present circumstances to cause me to leave this organization (R) | Mowday et al. (1979) |
| Gender | CTRL01 | What is your gender? | |
| Age | CTRL02 | What is your age? | |
| Education | CTRL03 | What is your level of education? | |
| Employmentcontract | CTRL04 | Do you work...? | |
| Management experience | CTRL08 | How long do you have a manager's position? | |
| Function | CTRL06 | What is your function? | |
| Department | CTRL07 | At what department do you work? | |

TABLE 14: CONSTRUCTS SURVEY MANAGERS

# APPENDIX 6– RESULTS CONTROL VARIABLES

| Control Variables | Class | UMC Utrecht | Alliander |
|---|---|---|---|
| **Gender** | Male | 45 | 376 |
| | Female | 46 | 92 |
| **Age** | under 30 | 14 | 66 |
| | 30 - 45 | 49 | 195 |
| | above 45 | 28 | 207 |
| **Education** | VMBO-T (Of Mavo) | 3 | 4 |
| | HAVO/VWO | 3 | 32 |
| | MBO | 15 | 81 |
| | HBO | 46 | 229 |
| | WO | 24 | 122 |
| **Employment contract** | Fulltime | 45 | 387 |
| | Parttime | 46 | 81 |
| **Job tenure** | les than 6 months | 5 | 38 |
| | 6 months - 1 year | 7 | 41 |
| | 1 to 5 years | 27 | 144 |
| | 5 - 10 years | 23 | 56 |
| | 10 - 20 years | 13 | 33 |
| | 20 years or longer | 16 | 156 |
| **Department** | GB&I | 36 | |
| | Inkoop | 11 | |
| | Not Known | 1 | 3 |
| | RV&S | 34 | |
| | VWO | 9 | |
| | Assetmanagement | | 62 |
| | HRM | | 54 |
| | IM&ICT | | 250 |
| | Klant & Markt | | 77 |
| | Regulering & MVO | | 22 |

TABLE 15: RESULTS CONTROL VARIABLES EMPLOYEES

| Control Variables | Class | UMC Utrecht | Alliander |
|---|---|---|---|
| **Gender** | Male | 5 | 26 |
| | Female | 3 | 8 |
| **Age** | under 30 | | |
| | 30 - 45 | 3 | 15 |
| | above 45 | 5 | 19 |
| **Education** | VMBO-T (Of Mavo) | | |
| | HAVO/VWO | | 1 |
| | MBO | | |
| | HBO | 3 | 18 |
| | WO | 5 | 15 |
| **Employment contract** | Fulltime | 5 | 30 |
| | Parttime | 3 | 4 |
| **Job tenure** | les than 6 months | | 2 |
| | 6 months - 1 year | | |
| | 1 to 5 years | 3 | 6 |
| | 5 - 10 years | 3 | 7 |
| | 10 - 20 years | 2 | 11 |
| | 20 years or longer | | 8 |
| **Department** | GB&I | 3 | |
| | Inkoop | 2 | |
| | Not Known | | |
| | RV&S | 3 | |
| | VWO | | |
| | Assetmanagement | | 6 |
| | HRM | | 5 |
| | IM&ICT | | 18 |
| | Klant & Markt | | 4 |
| | Regulering & MVO | | 1 |

TABLE 16: RESULTS CONTROL VARIABLES MANAGERS

| Alliander | Employees | | | Managers | | |
|---|---|---|---|---|---|---|
| | N | Mean | Std. Deviation | N2 | Mean2 | Std. Deviation2 |
| Time and place independent | 468 | 3,47 | 0,58 | 34 | 3,75 | 0,53 |
| Access and connectivity to knowledge | 468 | 2,56 | 0,37 | 34 | 2,69 | 0,54 |
| Managing results | 468 | 3,97 | 0,53 | 34 | 4,32 | 0,51 |
| Flexible Employment Relationship | 468 | 4,07 | 1,02 | 34 | 4,44 | 0,66 |
| Intensity of NWoW | 468 | 3,41 | 0,36 | 34 | 3,67 | 0,34 |

TABLE 17: RESULTS ALLIANDER, INTENSITY OF NWOW

| Alliander | Employees | | |
|---|---|---|---|
| | N | Mean | Std. Deviation |
| Task complexity | 468 | 2,00 | 0,56 |
| Empowerment | 468 | 4,21 | 0,40 |
| Knowledge sharing among employees | 468 | 3,99 | 0,43 |
| Employees accceptance of IT | 468 | 3,52 | 0,57 |

TABLE 18: RESULTS ALLIANDER, EMPLOYEES' COMPETENCIES

| Alliander | Managers | | |
|---|---|---|---|
| | N | Mean | Std. Deviation |
| Task complexity | 34 | 2,12 | 0,62 |
| Empowerment Impact | 34 | 3,44 | 0,61 |
| Individualized consideration | 34 | 4,55 | 0,37 |
| Trust | 34 | 4,06 | 0,69 |
| Supporting knowledge sharing among employees | 34 | 4,52 | 0,42 |
| Supporting employees accceptance of IT | 34 | 3,79 | 0,82 |
| Output Control | 34 | 3,34 | 0,38 |

TABLE 19: RESULTS ALLIANDER, MANAGERIAL COMPETENCIES

| Alliander | Employees | | | Managers | | |
|---|---|---|---|---|---|---|
| | N | Mean | Std. Deviation | N2 | Mean2 | Std. Deviation2 |
| Commitment | 468 | 3,03 | 0,35 | 34 | 3,75 | 0,48 |
| Overall Productivity | 468 | 3,79 | 0,43 | 34 | 3,94 | 0,28 |
| Work-life Balance | 468 | 3,32 | 0,33 | 34 | 3,62 | 0,73 |

TABLE 20: RESULTS ALLIANDER, PERFORMANCE GOALS

| UMC Utrecht | Employees | | | Managers | | |
|---|---|---|---|---|---|---|
| | N | Mean | Std. Deviation | N2 | Mean2 | Std. Deviation2 |
| Time and place independent | 91 | 2,70 | 0,61 | 8 | 2,75 | 0,87 |
| Access and connectivity to knowledge | 91 | 2,26 | 0,31 | 8 | 2,00 | 0,53 |
| Managing results | 91 | 3,65 | 0,56 | 8 | 3,96 | 0,55 |
| Flexible Employment Relationship | 91 | 3,66 | 0,91 | 8 | 3,75 | 1,04 |
| Intensity of NWoW | 91 | 2,95 | 0,29 | 8 | 2,99 | 0,50 |

TABLE 21: RESULTS UMC UTRECHT, INTENSITY OF NWOW

| UMC Utrecht | Employees | | |
|---|---|---|---|
| | N | Mean | Std. Deviation |
| Task complexity | 91 | 3,36 | 0,53 |
| Empowerment | 91 | 4,09 | 0,35 |
| Knowledge sharing among employees | 91 | 3,83 | 0,42 |
| Employees accceptance of IT | 91 | 3,57 | 0,65 |

TABLE 22: RESULTS UMC UTRECHT, EMPLOYEES' COMPETENCIES

| UMC Utrecht | Managers | | |
|---|---|---|---|
| | N | Mean | Std. Deviation |
| Task complexity | 8 | 3,04 | 0,68 |
| Empowerment Impact | 8 | 3,42 | 0,43 |
| Individualized consideration | 8 | 4,04 | 0,55 |
| Trust | 8 | 3,88 | 0,64 |
| Supporting knowledge sharing among employees | 8 | 4,13 | 0,25 |
| Supporting employees accceptance of IT | 8 | 3,67 | 0,40 |
| Output Control | 8 | 3,06 | 0,68 |

TABLE 23: RESULTS UMC UTRECHT, MANAGERIAL COMPETENCIES

| UMC Utrecht | Employees | | | Managers | | |
|---|---|---|---|---|---|---|
| | N | Mean | Std. Deviation | N2 | Mean2 | Std. Deviation2 |
| Commitment | 91 | 3,04 | 0,35 | 8 | 3,25 | 0,36 |
| Overall Productivity | 91 | 3,56 | 0,49 | 8 | 3,63 | 0,52 |
| Work-life Balance | 91 | 3,48 | 0,61 | 8 | 3,25 | 0,28 |

TABLE 24: RESULTS UMC UTRECHT, PERFORMANCE GOALS

| Construct | Item | Question | Source |
|---|---|---|---|
| Intensity of NWoW | NWOW01 | I can decide on my own where I want to work | Self developed |
| | NWOW02 | I can decide on my own when I want to work | Self developed |
| | NWOW03 | I determine the order of my tasks during the moments I work | Self developed |
| | NWOW04 | What IT technologies are avaliable to perform your tasks | Self developed |
| | NWOW05 | What applications and/or social media do you use to share knowledge | Self developed |
| | NWOW06 | The information I need to accomplish my work has digital availability | Self developed |
| | NWOW07 | I am assessed on my results | Self developed |
| | NWOW08 | I am assessed on the time I spend on working | Self developed |
| | NWOW09 | The relation between my managers and I is based on mutual respect and trust | Self developed |
| | NWOW10 | I have flexibility to arrange my fringe benefits | Self developed |
| Task complexity | TACO01 | To what extent does your performance depend upon how well others do their job?(R) | Ouchi (1978) |
| | TACO02 | What percentage of your time on the job do you spend carrying out routine tasks? | Ouchi (1978) |
| | TACO03 | My tasks as a whole are complex⊕ | Self developed |
| Empowerment | EMPO01 | The work I do is very important to me | Spreitzer (1995) |
| | EMPO02 | The work I do is meaningful to me | Spreitzer (1995) |
| | EMPO03 | I am confident about my ability to do my job | Spreitzer (1995) |
| | EMPO04 | I have mastered the skills necessary for my job | Spreitzer (1995) |
| | EMPO05 | I have significant autonomy in determining how I do my job | Spreitzer (1995) |
| Knowledge sharing among e | KNSH01 | My knowledge sharing with other organizational members is good | Bock et al. (2005) |
| | KNSH02 | My knowledge sharing with other organizational members is valuable to me | Bock et al. (2005) |
| | KNSH03 | I will share my work reports and official documents with members of my organization more frequently in the future | Bock et al. (2005) |
| | KNSH04 | I will always provide my know-where or know-whom at the request of other organizational members | Bock et al. (2005) |
| | KNSH05 | I will try to share my expertise from my education or training with other organizational members in a more effective way | Bock et al. (2005) |
| Employee Acceptance of IT | EAIT01 | Using technological resources improves the quality of the work I do | Self developed |
| | EAIT02 | Technological resources support critical aspects of my job | Davis (1991) |
| | EAIT03 | Using technological resources increases my productivity | Davis (1991) |
| | EAIT04 | I find it easy to get the technological resources to do what I want it to do | Davis (1991) |
| | EAIT05 | I find it takes a lot of effort to become skillful at using technological resources⊕ | Davis (1991) |
| Work-life balance | WLBA01 | How difficult or easy is it for you to find a good balance between the demands of your work and your personal and family life? ⊕ | Hill et al. (2001) |
| | WLBA02 | I have sufficient time away from my job to maintain an adequate balance between my work and personal and family life | Hill et al. (2001) |
| | WLBA03 | When I take a vacation, I am able to separate myself from work and enjoy myself | Hill et al. (2001) |
| | WLBA04 | How often do you feel drained when you go home from work because of work pressures and problems? ⊕ | Hill et al. (2001) |
| | WLBA05 | All in all, how successful do you feel in balancing your work and personal and family life? | Hill et al. (2001) |
| Overall productivity | OVPR01 | Among my work group, I would rate my performance in the top quarter | Staples et al. (1999) |
| | OVPR02 | I am happy with the quality of my work output | Staples et al. (1999) |
| | OVPR03 | I work very efficiently | Staples et al. (1999) |
| | OVPR04 | I am a highly productive employee | Staples et al. (1999) |
| | OVPR05 | My manager believes I am an efficient worker | Staples et al. (1999) |
| Commitment | COMM01 | I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful | Mowday et al. (1979) |
| | COMM02 | I would accept almost any type of job assignment in order to keep working for this organization | Mowday et al. (1979) |
| | COMM03 | I find that my values and the organization's values are very similar | Mowday et al. (1979) |
| | COMM04 | I am proud to tell others that I am part of this organization | Mowday et al. (1979) |
| | COMM05 | I could just as well be working for a different organization as long as the type of work was similar (R) | Mowday et al. (1979) |
| | COMM06 | It would take very little change in my present circumstances to cause me to leave this organization (R) | Mowday et al. (1979) |
| Gender | CTRL01 | What is your gender? | |
| Age | CTRL02 | What is your age? | |
| Education | CTRL03 | What is your level of education? | |
| Employmentcontract | CTRL04 | Do you work…? | |
| Job Tenure | CTRL05 | How long have you been employed here? | |
| Function | CTRL06 | What is your function? | |
| Department | CTRL07 | At what department do you work? | |
| | | | |
| * | | User acceptance of IT is altered to fit the context | |
| | | Grey items were deleted because of the low Cronbach alpha | |

TABLE 25: CONSTRUCTS SURVEY EMPLOYEES, REVISED

| Construct | Item | Question | Source |
|---|---|---|---|
| Intensity of NWoW | NWOW01 | I can decide on my own where I want to work | Self developed |
| | NWOW02 | I can decide on my own when I want to work | Self developed |
| | NWOW03 | I determine the order of my tasks during the moments I work | Self developed |
| | NWOW04 | What IT technologies are avaliable to perform your tasks | Self developed |
| | NWOW05 | What applications and/or social media do you use to share knowledge | Self developed |
| | NWOW06 | The information I need to accomplish my work has digital availability | Self developed |
| | NWOW07 | I am assessed on my results | Self developed |
| | NWOW08 | I am assessed on the time I spend on working | Self developed |
| | NWOW09 | The relation between my managers and I is based on mutual respect and trust | Self developed |
| | NWOW10 | I have flexibility to arrange my fringe benefits | Self developed |
| Task complexity | TACO04 | To what extent does the performance of your employees depend upon how well others do their job?(R) | Self developed |
| | TACO05 | What percentage of the time on the job do your employees spend carrying out routine tasks? | Self developed |
| | TACO06 | My tasks of my employees as a whole are complex® | Self developed |
| Individualized consideration | INCO01 | Listens to my concerns | Den Hartog (1997) |
| | INCO02 | Treats me as an individual rather than just as a member of a group | Den Hartog (1997) |
| | INCO03 | Provides advice when it is needed | Den Hartog (1997) |
| Trust | TRST01 | I have full confidence in my employees (e.g. performing tasks, empowerment and interdependence) | Self developed |
| Empowerment impact | EMIM01 | My impact on what happens in my department is large | Spreitzer (1995) |
| | EMIM02 | I have a great deal of control over what happens in my department | Spreitzer (1995) |
| | EMIM03 | I have significant influence over what happens in my department | Spreitzer (1995) |
| Supporting knowledge sharing among employees | SKSE01 | I share knowledge with my employees | Self developed |
| | SKSE02 | I stimulate my employees to share knowledge | Self developed |
| | SKSE03 | Knowledge sharing with my employees is valuable to me | Self developed |
| Supporting employees acceptance of IT | SEIT01 | I stimulate my employees to use the available technological resources | Self developed |
| | SEIT02 | My employees are effective with technological resources | Self developed |
| | SEIT03 | I frequently communicate with my employees through the available technological resources | Self developed |
| Output Control | OUCO01 | When you are evaluating the people who report directly to you for raises or promotions, how much weight do you give to their output records? | Ouchi (1978) |
| | OUCO02 | How often do you see each of the people who reports directly to you? | Ouchi (1978) |
| Work-life balance | WLBA01 | How difficult is it for you to find a good balance between the demands of your work and your personal and family life? | Hill et al. (2001) |
| | WLBA02 | I have sufficient time away from my job to maintain an adequate balance between my work and personal and family life | Hill et al. (2001) |
| | WLBA03 | When I take a vacation, I am able to separate myself from work and enjoy myself | Hill et al. (2001) |
| | WLBA04 | All in all, how successful do you feel in balancing your work and personal and family life ® | Hill et al. (2001) |
| | WLBA05 | How often do you feel drained when you go home from work because of work pressures and problems? ® | Hill et al. (2001) |
| Overall productivity | OVPR01 | I believe I am an effective manager* | Staples et al. (1999) |
| | OVPR02 | Among my colleque managers, I would rate my performance in the top quarter* | Staples et al. (1999) |
| | OVPR03 | I am happy with the quality of my work output | Staples et al. (1999) |
| | OVPR04 | I work very efficiently | Staples et al. (1999) |
| | OVPR05 | My manager believes I am an efficient manager* | Staples et al. (1999) |
| Commitment | COMM01 | I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful | Mowday et al. (1979) |
| | COMM02 | I would accept almost any type of job assignment in order to keep working for this organization | Mowday et al. (1979) |
| | COMM03 | I find that my values and the organization's values are very similar | Mowday et al. (1979) |
| | COMM04 | I am proud to tell others that I am part of this organization | Mowday et al. (1979) |
| | COMM05 | I could just as well be working for a different organization as long as the type of work was similar (R) | Mowday et al. (1979) |
| | COMM06 | It would take very little change in my present circumstances to cause me to leave this organization (R) | Mowday et al. (1979) |
| Gender | CTRL01 | What is your gender? | |
| Age | CTRL02 | What is your age? | |
| Education | CTRL03 | What is your level of education? | |
| Employmentcontract | CTRL04 | Do you work…? | |
| Management experience | CTRL08 | How long do you have a manager's position? | |
| Function | CTRL06 | What is your function? | |
| Department | CTRL07 | At what department do you work? | |
| | | | |
| * | | Items are changed to enable managers to answer this questions | |
| | | Grey items were deleted because of the low Cronbach alpha | |

TABLE 26: CONSTRUCTS SURVEY MANAGERS, REVISED

| Kolom1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pattern Matrix** | | | | | | | | | | | |
| Factor | | | | | | | | | | | |
| EAIT01 | 0,867 | | | | | | | | | | |
| EAIT02 | 0,913 | | | | | | | | | | |
| EAIT03 | 0,878 | | | | | | | | | | |
| EAIT04 | 0,534 | | | | | | | | | | |
| OVPR01 | | 0,454 | | | | | | | | | |
| OVPR02 | | 0,434 | | | | | | | | | |
| OVPR03 | | 0,687 | | | | | | | | | |
| OVPR04 | | 0,796 | | | | | | | | | |
| OVPR05 | | 0,624 | | | | | | | | | |
| EMPO03 | | | 0,817 | | | | | | | | |
| EMPO04 | | | 0,798 | | | | | | | | |
| EMPO05 | | | 0,544 | | | | | | | | |
| TACO01 | | | | 0,651 | | | | | | | |
| TACO03 | | | | 0,690 | | | | | | | |
| NWOW01 | | | | 0,544 | | | | | | | |
| NWOW10 | | | | | | | | | | | |
| NWOW7 | | | | | | | | | | | |
| KNSH01 | | | | | 0,737 | | | | | | |
| KNSH02 | | | | | 0,747 | | | | | | |
| KNSH05 | | | | | 0,413 | | | | | | |
| WLBA02 | | | | | | 0,643 | | | | | |
| WLBA03 | | | | | | 0,504 | | | | | |
| WLBA05 | | | | | | 0,621 | | | | | |
| EMPO01 | | | | | | | 0,877 | | | | |
| EMPO02 | | | | | | | 0,649 | | | | |
| NWOW09 | | | | 0,340 | | | | 0,433 | | | |
| NWOW3 | | | | | | | | 0,453 | | | |
| NWOW4 | | | | | | | | 0,477 | | | |
| NWOW5 | | | | | | | | | | | |
| NWOW8 | | | | | | | | 0,320 | | | |
| COMM03 | | | | | | | | | 0,564 | | |
| COMM04 | | | | | | | | | 0,668 | | |
| WLBA01 | | | | | | | | | | 0,365 | |
| WLBA04 | | | | | | | | | | 0,867 | |
| NWOW2 | | | | | | | | | | | 0,474 |
| NWOW6 | | | | | | | | | | | 0,443 |

Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 8 iterations.
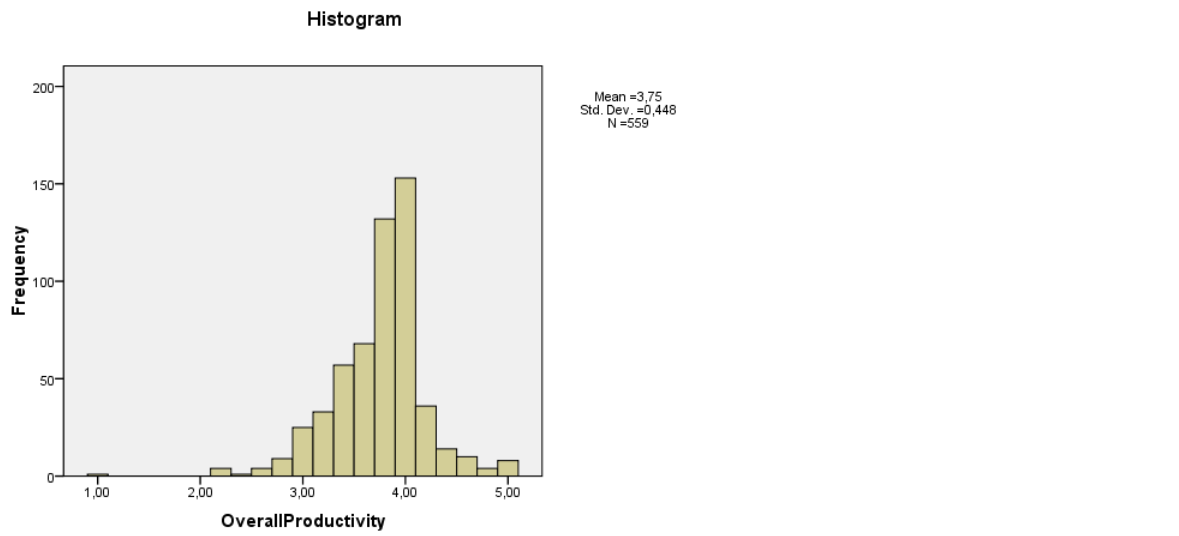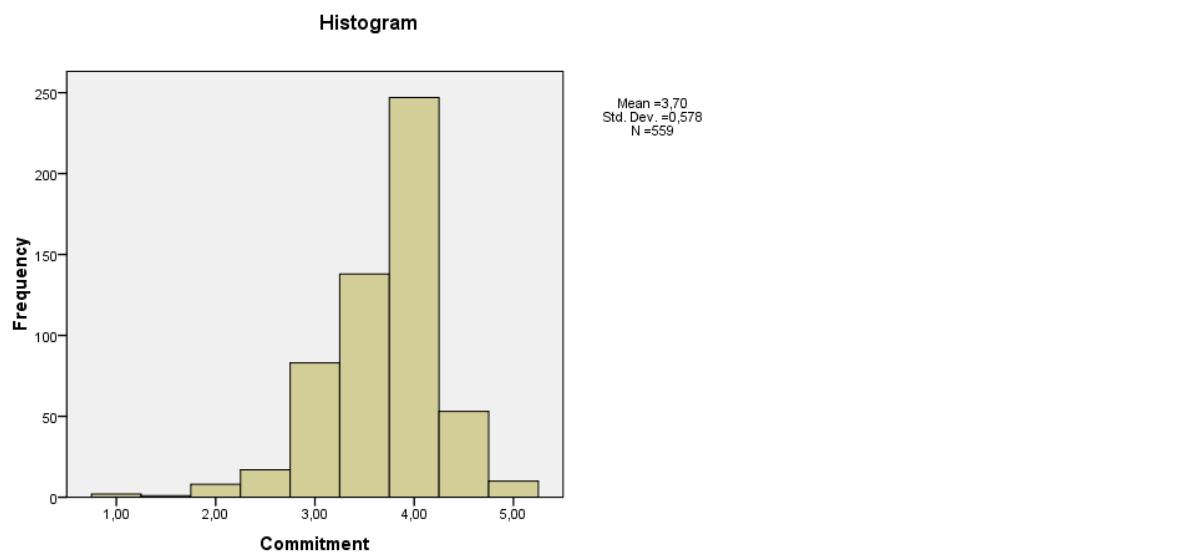
TABLE 27: CONFIRMATORY FACTOR ANALYSIS

FIGURE 9: HISTOGRAM OVERALL PRODUCTIVITY



FIGURE 10: HISTOGRAM COMMITMENT