



**A scenario experiment on the effect of performance appraisal on the feeling of autonomy of employees and the perceptions of employees regarding the Theory X/Y leadership style: the moderating role of strength-based leadership**

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| <b>Student</b>        | B.M.A. van der Zanden       |
| <b>Supervisor</b>     | dr. M. van Woerkom          |
| <b>Second reader</b>  | dr. M.L. van Engen          |
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## Abstract

This study investigated the relationship between performance appraisals (e.g. an employee being appraised on performance by his/her supervisor) and perceived autonomy of employees. In order to measure the effect of performance appraisal on employees, a scenario study was performed. The experimental group (N = 65) answered the same work-related questions in the survey while thinking about their most recent performance appraisal. Whilst, the control group (N = 68) answered the same work-related questions while thinking about their most recent informal conversation. Furthermore, the effect of perceived autonomy of employees on perceptions of employees regarding the leadership style of their supervisor was researched. In this study, Theory X/Y of McGregor (1960) was used as a framework to understand how employees see their supervisors. Originally, Theory X/Y of McGregor (1960) provides a framework about how managers view their employees. However, in this study we expected that levels of autonomy influence perceptions of employees regarding the prevailing management style of the supervisors (either Theory X or Y). Theory X represents a management style associated with a negative view on humans and Theory Y represents a management style associated with a positive view on humans (Thuis, 2014). In addition, it was expected that strength-based leadership would buffer the relationship between performance appraisal and perceived autonomy of employees in such a way that the negative effect of performance appraisal on perceived autonomy of employees becomes weaker. We found no support for the negative relationship between performance appraisal and perceived autonomy of employees. Furthermore, strength-based leadership did not moderate the relationship between performance appraisal and perceived autonomy. Finally, we showed that high levels of perceived autonomy of employees results in perceptions of employees of a leadership style that is more Theory Y in its nature. Additionally, when employees experience less autonomy, we showed that it results in a perceived (by employees) leadership style that is more Theory X in its nature. Finally, limitations, suggestions for future research and practical implications were discussed.

**Keywords:** *scenario experiment, performance appraisal, autonomy, Theory X/Y, strength-based leadership.*

## **Introduction**

Many supervisors dislike performance appraisals, consequently there is a lot of resistance from supervisors to performance appraisals (Bouskila-Yam & Kluger, 2011; McGregor, 1975; Roberts, 2003). This might have to do with the fact that supervisors intend to provide constructive feedback, although, ultimately they are preoccupied with numerical ratings (Coen & Jenkins, 2000). Coens and Jenkins (2000) affirm the resistance to performance appraisals from supervisors, and demonstrate its unintended, undesirable effects. The objectives of performance appraisals consist of improving communication and performance, motivating and helping employees, and documentation of actions of employees (Coens & Jenkins, 2000). Unfortunately, performance appraisals as used in their current form do not always fulfill these objectives. These issues indicate why performance appraisal, as an HR practice, has been of great interest in both daily practice and in research.

Performance appraisal can be defined as the measurement of individual work performance (Woehr & Huffcutt, 1994). Performance appraisal, as an HR practice, is widely used as a source of information to make organizational decisions about promotion and salary increases, as well as a way to provide feedback to workers (Williams, DeNisi, Blencoe, & Cafferty, 1985). In general, performance appraisals are used frequently in organizations, but they neither provide the intended nor the desired results (Coens & Jenkins, 2000).

One of the reasons why performance appraisal does not achieve these desired results might have to do with the fact that it hurts people's perceptions of their own autonomy. During performance appraisals, employees' behavior is rewarded or punished (Deci, Ryan & Vansteenkiste, 2008). This reflects controlled motivation (Deci, Ryan & Vansteenkiste, 2008), meaning that performance appraisal can be seen as a controlling event. It is expected that a controlling event hurt feelings of autonomy of employees.

The Self-Determination Theory (SDT) of Deci and Ryan (2000) clarifies the reason why performance appraisals might hurt people's perceptions of autonomy. The SDT provides a motivational framework for the work context (Gillet et al., 2013). Within the SDT, a distinction is made between autonomous motivation and controlled motivation (Deci, Ryan, & Vansteenkiste, 2008). Autonomous motivation consists of intrinsic and extrinsic motivation through which people experience self-endorsement of their actions. Controlled motivation comprises both external regulation, that is, one's behavior is a function of external contingencies of reward or punishment, and introjected regulation, that is a regulation of actions that comes from within (Deci, Ryan, & Vansteenkiste, 2008). Comparing this to the situation of an employee being appraised on performance, during performance appraisals the behavior of employees is rewarded or punished. This is a function of external regulation, which reflects controlled motivation. Therefore, it is expected that employees feel controlled during performance appraisals, which impedes the perceived level of autonomy of

employees. Thus, this research will investigate the negative influence of performance appraisal on perceived autonomy of employees.

Moreover, it is expected that perceived autonomy of employees in turn influences perceptions of employees regarding the leadership style of their managers. To research the perceptions of employees on their managers, Theory X/Y of McGregor (1960) regarding the positive or negative views on humans is used. The viewpoints of the managers regarding human nature, determines the leadership style of a manager (Thuis, 2014). Therefore, in this study both assumptions regarding Theory X/Y as well as 'leadership style (associated with) Theory X/Y (negative or positive)' will be used. McGregor (1960) provides a framework for assumptions that a supervisor holds about his/her employees regarding Theory X and Theory Y (Kopelman, Prottas, & Falk, 2010). Thus, originally, Theory X/Y of McGregor (1960) provides a framework about how managers view their employees. However, in this study we expected that levels of autonomy influence perceptions of employees regarding the prevailing management style of the supervisors (either Theory X or Y). Within Theory X/Y, a distinction is made between two types of management (Fiman, 1973). Those two types of management are based on viewpoints of supervisors towards their employees regarding Theory X and Theory Y (McGregor, 1960). Organizations espouse a desire to manage according to McGregor's (1960) Theory Y. This is a more positive view of managers because supervisors holding a Theory Y perspective believe that employees are willing to work, have self-control and self-direction, are creative and seek responsibility (McGregor, 1960; Carson, 2005; Schermerhorn, 2011). In contrast, it is not desirable for organizations to be associated with the image that perspectives of Theory X prevail. Supervisors holding Theory X assumptions believe that employees dislike and attempt to avoid work, need direction, avoid responsibility, and lack ambition (McGregor, 1960; Carson, 2005; Schermerhorn, 2011). It is expected that the feeling of autonomy of employees influences employees' perceptions regarding the dominant management style within the organization. This is because the feeling of having autonomy in human behavior is closely related to the extent to which employees experience their environment as supporting or controlling (Deci, & Ryan, 1987). It is likely that employees experiencing low levels of autonomy, view the management style of their supervisor as controlling, which reflects a sense of a Theory X leadership style. In turn, it is expected that employees that perceive high levels of autonomy, experience the style of their supervisor as participatory, which reflects a Theory Y leadership style (Kopelman, Prottas, & Falk, 2010). Thus, it is likely that performance appraisals are negatively related to perceived autonomy of employees. Furthermore, it is expected that lower levels of autonomy perceived by employees are related to views of employees regarding assumptions of a dominant Theory X leadership style of their supervisors. In turn, high perceptions of autonomy are related to views of the employees regarding assumptions of the dominant Theory Y leadership style of their supervisors.

However, there are conditions that are likely to moderate the effect of performance appraisal on perceived autonomy of employees. Nowadays, organizations recognize the necessity to ameliorate behavior that leads to counterproductive work outcomes. Equally important for organizations is to focus on developing strengths of employees (Clifton & Harter, 2003). Employees' talents shape the greatest opportunities for organizational success (Clifton & Harter, 2003). When a leader is focusing on employee strengths, the employee will be given a more central position during performance appraisals, in contrast to the standard performance appraisals focusing on the predefined job criteria (Van Woerkom & De Bruijn, in press). Such a strength-based approach implies that the job is adjusted to the strengths of the employee (Van Woerkom & De Bruijn, in press), meaning that performance appraisals are more customized towards the employee due to the way the leader is shaping the performance appraisal. Therefore, it is likely that the perceived level of autonomy is less damaged. By applying a strength-based approach, talents can be identified, employees can appeal to them and choose how frequently the talents will be used (Clifton & Harter, 2003). Consequently, the perceived level of autonomy is expected to be less damaged after the performance appraisal with a strength-based approach, because employees feel less controlled and can freely decide when and how they will use their talents. Therefore, the buffering effect of strength-based leadership on the relationship between performance appraisals and autonomy will be researched.

The added value of this research is the elaboration on the effects of performance appraisal on autonomy of employees. In addition, due to the critiques on performance appraisal as commonly used in its current form, the buffering effect of the strength-based leadership on the relationship between performance appraisals on autonomy will be investigated. Moreover, more insight on the effect of autonomy on perceptions of employees regarding the leadership style (either Theory X or Y) of their supervisor will be provided. In this study, Theory X/Y will be used as a framework to understand how employees see their supervisor.

### **Theoretical framework**

#### *Relationship between performance appraisal and autonomy*

Performance appraisal is 'a feedback system that involves the direct evaluation of individual or work group performance by a supervisor, manager, or peers' (Cummings & Worley, 2015, p. 448). One of the main goals of performance appraisal is to align individual goals with organizational objectives (Brinkerhoff & Kanter, 1979) in order to improve the performance of employees (Van Woerkom & Freese, 2015). Usually there is an interaction between the appraiser and the appraisee in a work setting, followed by a judgment of the appraiser about the performance observed (Ilgen & Favero, 1985). These judgments about performance can be enhanced or distorted via the perceptual processes of the employee (Ilgen & Favero, 1985). In other words, the employee filters the information obtained by the appraiser grants either a positive or negative label to the performance appraisal information.

Because the appraisal is usually followed by a judgment of the appraiser, this reflects one-way communication, which means that the employee cannot (fully) participate in the conversation. This brings about a lack of perceived autonomy, since the employee is not free in participating in the performance appraisal. The reason why performance appraisals might hurt people's perceptions of autonomy is clarified by the Self-Determination Theory (SDT) of Deci and Ryan (2000). The SDT provides a motivational framework for the work context (Gillet et al., 2013). To be self-determining can be defined as the extent to which people experience a feeling of choice in performing their actions (Deci, Connell, & Ryan, 1989). The SDT is based on the assumption that three psychological needs – needs for competence, autonomy, and relatedness – determine the motivation of an employee. The needs specify the necessary conditions for psychological growth, integrity, and well-being (Deci & Ryan, 2000). Within the SDT, a distinction is made between autonomous motivation and controlled motivation (Deci, Ryan, & Vansteenkiste, 2008). Autonomous motivation consists of intrinsic and extrinsic motivation, through which people experience self-endorsement of their actions. In this study we will not focus on autonomous motivation, instead we focus on controlled motivation, since performance appraisals are seen as controlling. The controlled motivation aspect of the STD will be explained in the next paragraph.

On the one hand, controlled motivation comprises external regulation, that is, one's behavior is a function of external contingencies of reward or punishment. On the other hand, controlled motivation comprises introjected regulation, that is a regulation of actions that comes from within (Deci, Ryan, & Vansteenkiste, 2008). Comparing this to the situation of being appraised, the behavior of employees is rewarded or punished, which is a function of external regulation, and this reflects controlled motivation. To summarize, performance appraisal can be seen as a controlling event, which might hurt feelings of autonomy. Autonomy is defined within the SDT as the experience of acting with a sense of choice, volition, and self-determination (Stone, Deci & Ryan, 2009).

Performance appraisals, being an external event of cognitive evaluation, have a controlling aspect (Ryan, 1982). When the event is interpreted as a pressure to attain a particular behavioral outcome, the event is seen as controlling. Consequently, when an employee feels that he or she is being controlled, it is likely that it results in a low perception of autonomy by the employee, since the employee cannot act with a sense of choice, volition, and self-determination (Stone, Deci, & Ryan, 2009). During performance appraisals the appraiser usually has a dominant role, because he or she is responsible for the evaluation of the employee and holds and controls rewards (Beer, 1981). Organizations tend to use performance appraisals as a way to control their employees, since managers use it to determine the level of performance of employees and to ensure that the strategy and plans of the organizations are accomplished; the latter is part of management control systems (Merchant & Van der Stede, 2007; Denisi & Pritchard 2006). By measuring employees performance against a standard bar, and expecting that the employees perform well across this bar (Van Woerkom & De Bruijn, in

press), it is likely that this reflects a sense of control of management and trigger a lack of perceived autonomy of the employee (Rock, Davis, & Jones, 2014). Thus, it is expected that the lack of autonomy is inherent to performance appraisals.

*H1: Performance appraisals have a negative influence on the perceived autonomy of employees*

#### *Theory X/Y*

The framework of McGregor (1960) regarding viewpoints of managers about human nature will be used to research the relationship between perceived autonomy of employees and perceptions of employees about their managers (either the positive Theory Y perceptions or the negative Theory X perceptions). According to McGregor's Theory X and Theory Y, a distinction is made between two motivational perspectives that a manager holds towards employees (Kopelman, Protzas, & Falk, 2010). On the one hand, the assumptions underlying Theory X emphasize a pessimistic view by managers, namely that employees are lazy, untrustworthy, lack ambition, and offer little useful ideas. On the other hand, conceptions of managers characterized by a Theory Y mindset show a more optimistic view, namely that employees can be motivated to work hard and find work enjoyable; are capable of self-direction and self-control; often seek to grow and accept responsibility; and can be the source of many useful ideas (Kopelman, Protzas, & Falk, 2010). Moreover, McGregor (as cited by Al-Hakim & Jin, 2010) argues that supervisors create self-fulfilling prophecies, which means that through the behavior of these supervisors, the supervisors create situations where employees act in a way that supports the supervisors' assumptions. In sum, Theory X/Y of McGregor (1930) provides a framework about how managers view their employees. However, in this study, we expect that levels of employees autonomy influence perceptions of employees regarding the prevailing management style of the supervisors (Theory X/Y).

These contrasting viewpoints are also reflected in the soft and hard human resource management (HRM) models. Truss et al. (1997) indicate that the most widely adopted HRM models, the soft and hard versions, are based on conflicting views of human nature and managerial control strategies. The hard model is focused on tight management control, which is more Theory X in its nature. On the other hand, the soft model is more Theory Y in its nature and is based on control through commitment. The soft part of HRM is associated with the utilization of talents (Truss et al., 1997). As described earlier, performance appraisals are perceived as controlling by employees, which is in line with the hard model of HRM, since it focuses on tight management control. Process controls, associated with perceptions of Theory X, impinge on autonomy of individuals or workgroups (Klein, 1991), whereas self-controls, associated with perceptions of Theory Y, increase perceptions of autonomy (Fiman, 1973). It is likely that perceived autonomy of employees result in an attitude of employees towards the viewpoints of managers on the prevailing assumptions about Theory X/Y. The perceived autonomy of employees may affect the attitudes not only about the supervisor of the employees, but also about the whole organization (Deci & Ryan, 1987). Because employees

experience less autonomy during a controlling event such as performance appraisal, it is expected that this leads to employee perceptions of a Theory X leadership style of the supervisors. In turn, in case employees experience high levels of autonomy, it is expected that this leads to employee perceptions of a Theory Y leadership style of the supervisors.

*H2: Perceived autonomy of employees is negatively related to perceptions of employees regarding leadership style Theory X and is positively related to perceptions of a leadership style Theory Y*

#### *Strength-based leadership*

Another reason why performance appraisals do not reach their desired outcomes might have to do with the excessive focus on deficits and little attention for employees' qualities and strengths (Van Woerkom & De Bruijn, in press). In the literature (Wilson, 2002), inconsistency is found regarding the role of the appraiser. On the one hand, the appraiser needs to be a judge of the performance of the appraisee. On the other hand, the appraiser should be a helpful counselor (Wilson, 2002). Dorfman, Stephan, and Loveland (1986) confirm this inconsistency by outlining performance appraisal objectives consisting of being supportive, emphasizing performance improvement and discussing pay and advancement. If the appraiser is seen as a judge of the performance, which can be seen as a form of controlling of employees, it impedes the level of perceived autonomy of employees. However, strength-based leaders pay attention to meet the needs of their followers, by gaining trust of their employees, showing compassion for their followers, creating stability and creating hope (Rath & Conchie, 2008). In this case, power would be more equally distributed during performance appraisals, and it is likely that the perception of autonomy would be less damaged because the appraisee has the opportunity to influence a part of the performance appraisal (Beer, 1981). This is because a strength-based leader avoids the authoritarian character of the supervisor-subordinate relationship. While power is more equalized, an open, two-way dialogue is created (Beer, 1981).

When a leader is providing feedback and coaching to employees, that is, the leader is in the role of the helpful counselor, workers gain understanding of their strengths and weaknesses (Aguinis, Joo & Gottfredson, 2011). When the leader is focusing on employee strengths, the employee has a more central position during performance appraisals because the performance review is replaced by a dialogue about the development of the employee (Van Woerkom & De Bruijn, in press). Consequently, the performance appraisal is more customized to the employee and it is likely that there is more autonomy support from the leader. Autonomy support is defined as the extent to which a manager or supervisor is supporting self-determination of employees (Deci, Connell, & Ryan, 1989). That is, the degree to which a manager is having interpersonal conversations with his employees in order to support autonomy (Deci, Connell, & Ryan, 1989). It is likely that performance appraisal in its current form does not provide sufficient opportunities for interpersonal conversations to support autonomy because it is seen as controlling.



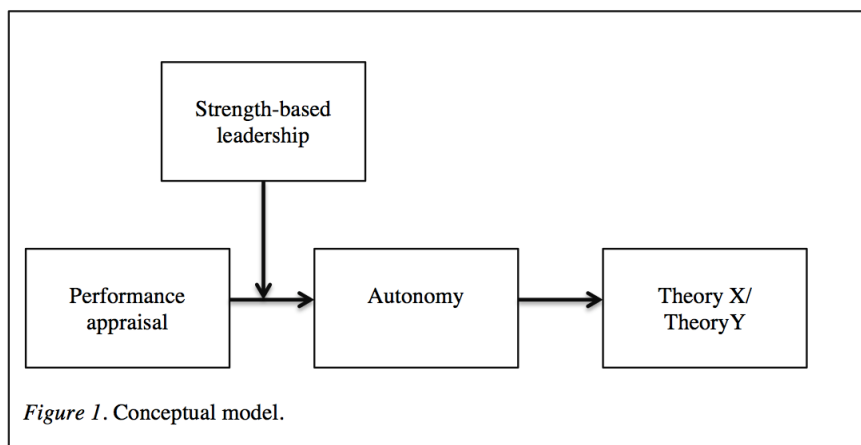
When the appraiser is focusing especially on positive feedback and results based on employees' strengths, it is called a strength-based approach (Aguinis, Joo & Gottfredson, 2011). Consequently, it is expected that the performance appraisal is more customized to the strengths of the employees instead of emphasized on measuring the performance of employees against a universal standard (Van Woerkom & De Bruijn, in press). This way, performance appraisal provides opportunities for interpersonal conversations to support self-determination, which results in employees experiencing autonomy support (Deci, Connell & Ryan, 1989). Therefore, it is likely that the negative effect of performance appraisal on perceived autonomy of employees is lessened. In other words, it is expected that employees will not experience diminished levels of autonomy because the supervisor is focusing on employee strengths and therefore supporting their autonomy.

Such a strength-based leader is expected to be perceived as less controlling, since he or she is more oriented towards finding out opportunities and qualities of the employee, instead of making judgments in order to control employees' performance to achieve organizational objectives. As employees use their strengths, it allows them to perform at their best (Wood, Linley, Maltby, Kashdan & Hurling, 2011). Consequently, a strength-based leader, in the role of the helpful counselor, can lessen the detrimental effect of performance appraisal on autonomy.

Thus, when a leader focuses on strengths this will alleviate the negative relationship between performance appraisal and perceived autonomy.

*H3: The relationship between performance appraisal and perceived autonomy is moderated by strength-based leadership, in such a way that the negative effect of performance appraisal on perceived autonomy is weaker to the extent that the leader is experienced as more strength-based.*

#### *Conceptual model*



Note: in this study, Theory X/Y is used as an abbreviation. This study focuses on perceptions of employees regarding the leadership style of their manager based on a Theory X/Y framework. Theory X represents a more controlling leadership style, as perceived by employees. Theory Y represents a more participatory leadership style, as perceived by employees.

## Methods

### *Research set up*

The purpose of this study was to investigate the effect of being appraised on perceived autonomy of employees, and, in turn, the effect of perceived autonomy on perceptions of employees on the Theory X/Y leadership style of their supervisor. Moreover, the moderating effect of strength-based leadership on the relation between performance appraisal and perceived autonomy of employees was studied. Since causal relationships between the aforementioned variables were described, this study was an explanatory research (Saunders, Lewis, & Thornhill, 2009).

The variable performance appraisal was measured by the use of two separate scenarios, to check whether different effects were measured regarding the effect of performance appraisal on perceptions of autonomy, and in turn on perceptions of employees on the leadership style of the manager (Theory X/Y). This format represents a scenario experiment, in which two groups were asked to fill in a questionnaire after they were asked to remember two different scenarios (Belschak & Den Hartog, 2009). In both scenarios the respondents were asked to imagine oneself in either one of the scenarios and complete parts of the questionnaire from this state of mind. In the first group, employees were asked to recall their last performance appraisal with their supervisor (scenario 1). In the other group, employees were asked to think about their last informal conversation in the workplace with their manager (scenario 2). This informal conversation scenario can be based on work related issues or private related issues. The purpose of the scenario experiment was to be able to purely measure the effect of performance appraisal, by filtering out all influences about the contact with the supervisor. This means that informal conversations can be about work, but also about private pursuits. The respondents were randomly divided in two groups; either the control or the experimental group. In order to do so, a unique URL was generated. This link was sent to respondents and by clicking on this link, each person was randomly assigned to a questionnaire, either linked to the control or experimental group.

In order to test the effects in this study, an online survey was used to collect data. The study is characterized as a quantitative cross-sectional design since a 'snapshot' is taken at a particular time (Saunders, Lewis & Thornhill, 2009). A convenience sampling design was used since several companies were approached to find a company that was willing and able to participate. The unit of analysis was individual employees. The goal of this experimental design was to make a causal inference about the effect of performance appraisal on perceived autonomy and in turn on perceptions of a Theory X/Y leadership style (Warner, 2013).

### *Scenario experiment*

To test the possible effects of performance appraisal on autonomy and Theory X/Y, dummy coding was needed in order to make a distinction between the experimental (1) and control (0) group. The control group was used as a baseline so the experimental group can be compared with the control group. In the introduction of each scale, an introduction tailored to scenario 1 or 2 was given. The introduction of scenario 1 was: *'Imagine that you just come back from your last performance appraisal with your supervisor. Try to think back and capture this moment: in which room took the conversation place and how did you feel. Answer the following questions according to this feeling you had immediately after this conversation'*. The introduction of scenario 2 was: *'Go back in your mind to your last informal conversation that you had with your supervisor. Try to think back and capture this moment: in which room took this conversation place and how did you feel. Answer the following questions according to this feeling you had immediately after this conversation'*.

### *Sample*

This study was performed in the non-profit sector, consisting of companies from 18 different primary schools, one trade union and a childcare organization. The questionnaires were sent to all employees of 18 primary schools via each principal of the primary school, leading to a total of 230 employees. Regarding the trade union, the HR manager distributed the questionnaire to 120 employees. In addition, the questionnaire was distributed among 190 employees within the childcare organization via the principal of the management team.

### *Procedure*

Each principal/HR manager sent the questionnaires to the employees via email. Attached to the email, there was an accompanying introduction letter about the study. In this introduction letter, the objectives of the study as well as the guaranteed anonymity were mentioned. The questionnaire was carried out via the software 'Qualtrics', to allow for proper management of the survey data. The answered questions were returned directly to the researcher via Qualtrics. The surveys were sent to the respondents during the second week of April and a reminder was sent after one week. The average time to fill out the questionnaire was 15 minutes and in total 133 respondents filled out the questionnaire. In the control group were 65 respondents and in the experimental 68. The questionnaire was sent to 540 employees in total, with a response rate of 24.60%. Respectively 52 (39.1%) employees from the trade union contributed, 40 (30.1%) employees of primary schools that are governed by the same board, two employees of another primary school (1.5%) and 39 (29.3%) employees of the childcare organization.

The demographic characteristics of the respondents in total and per group are shown in Table 1 in appendix I. Regarding gender, the total group of respondents consisted of 24.8% males and 75.2% females. This means that the majority of the respondents were female. The average age for the total

group is 45.81 ( $SD = 18.8$ ) year. The educational background of participants ranged from primary school to academic graduate school. The most common educational level within this total group of participants was higher professional education (HBO) (48.9%). The average tenure for the total group was 16.31 years.

### *Group differences*

An independent samples t-test showed that the control and experimental group did not differ in gender, age, tenure and educational background. For example, there were no significant ( $p = < 0.05$ ) differences regarding age between the scores of the control ( $M = 45.22$ ,  $SD = 9.97$ ) and the experimental group ( $M = 46.38$ ,  $SD = 11.60$ ;  $t(131) = -.62$ ,  $p = .534$ , two-tailed). In addition, another independent t-test was conducted and showed that there were no significant ( $p = > 0.05$ ) differences between the control group and experimental group regarding the scores on leader support for strength use, leader support for strength identity, autonomy, and Theory X/Y. Results can be found in table 2 in appendix II.

### *Measures*

Measurement of the constructs was based on several previously published scales. The companies that contributed to this research were all Dutch; therefore, the questions were translated into Dutch. In the beginning of the questionnaire, questions were asked about the demographic characteristics of the participants, e.g., gender, age, educational background, and tenure. Next, the following variables were measured.

*Performance appraisal.* The variable performance appraisal is measured by the use of two separate scenarios, to check whether different effects are found regarding the effect of performance appraisal on perceptions of autonomy, and in turn on perceptions of the Theory X or Theory Y leadership style. The experimental group had to answer the same work-related questions in the survey while told to think about their most recent performance appraisal. Whilst, the control group had to answer the same work-related questions while told to think about their most recent informal conversation. A detailed explanation of the procedure of this scenario experiment is given in the paragraphs '[Research set up](#)' and '[scenario experiment](#)'.

*Autonomy.* For the scale of perceived autonomy of employees, a part of the Climate Questionnaires of Baard, Deci and Ryan (2004) was used, namely the Work Climate Questionnaire (WCQ). The questionnaire was used to assess employees' perceptions of the degree to which a work context is autonomy supportive versus controlling (Baard, Deci & Ryan, 2004). This scale has a long form and a short form, containing respectively of 15 or 6 items. For this research, the short form was used considering the amount of time the respondents need to fill out the questionnaire. Higher scores represent a higher level of perceived autonomy support. An example of an item that is included in this scale is: '*I feel that my manager provides me choices and options*'. The respondents could answer on a

seven-point scale (1 = strongly disagree, 7 = strongly agree). For autonomy, a KMO of .92 and a significant value on Bartlett's Sphericity Test was found ( $p = < 0.05$ ) (results can be found in table 8 of Appendix IV). All items loaded on one factor. One eigenvalue was above 1 (4.6) and the Screeplot supported this. In the correlation matrix, all values were larger than .30. The Cronbach's  $\alpha$  of this scale was .94, which represents an extremely reliable scale, as the conventional level for reliability for group levels is  $> .70$ . The values in the column Cronbach's Alpha if Item Deleted were lower than the overall alpha so no items had to be deleted.

*Theory X/Y leadership style.* Perceptions of employees regarding the Theory X/Y leadership style were measured by using the scale of Kopelman, Protzas, and Falk (2010). Originally, the scale consist of 26 items, whereof 13 items represent the Theory Y perspective and 13 represent the Theory X perspective. Kopelman, Protzas and Falk (2010) developed a shorter scale consisting of 13 items in total. In this scale, eight items are representative for perceptions of employees regarding leadership style Theory Y and five items for perceptions of employees regarding leadership style Theory X. Originally; the items are used to investigate the viewpoint of the respondent regarding the prevalent Theory within the organization. However, the items were rephrased in such a way that it becomes clear what the employee thinks about the viewpoint of the manager regarding the prevalent Theory. This was because the goal of this study was to investigate perceptions of employees on the leadership style of the manager regarding the prevalent Theory (either Theory X or Theory Y). An example of one of the items used representing Theory Y is '*Mutual responsibility and shared objectives should be emphasized*' ( $\alpha = 0.79$ ). This question is rephrased in: 'My direct supervisor emphasizes mutual responsibility and shared objectives.' One of the items that were included in the Theory X scale is: '*High standards of performance should be expected of all employees*' ( $\alpha = .83$ ). This question is rephrased in: 'My direct supervisor expects high standards of performance of all employees'. Based on the literature, this scale had to be divided into two separate scales; theory Y and theory X scale.

Regarding the scale representative for leadership style Theory Y, the items loaded on two components. A KMO of .85 was found and Bartlett's test of Sphericity was significant ( $p = < 0.05$ ). Two eigenvalues were higher than 1 (3.67 and 1.25). However, the screeplot did not confirm the two-factor loadings. Therefore, SPSS was forced to extract a fixed number of factors (in this case 1). The results of this are shown in table 9 and 10 in appendix IV. To support the one-factor solution, Oblimin rotation was performed. For the one factor solution, a Cronbach's  $\alpha$  of .83 was found, which means that the scale is above the criteria and thus reliable. The values in the column Cronbach's Alpha if Item Deleted were lower than the overall alpha so no items had to be deleted.

Regarding the scale representative for leadership style Theory X, all items loaded on one component. One eigenvalue was higher than 1 (2.57) and the screeplot confirmed the one-factor solution. According to the KMO criterion, a value higher than .60 was found (.74) and Bartlett's Sphericity Test was significant ( $p = < 0.05$ ). A Cronbach's  $\alpha$  of .76 was found, which represents a

good reliability. The values in the column Cronbach's Alpha if Item Deleted were lower than the overall alpha so no items had to be deleted. Results of this are shown in table 11 in appendix IV.

*Strength-based leadership.* This scale is measured independent of the two different scenarios, meaning that these items are measured in the beginning of the questionnaire. This scale is measured by the scale of Veestraeten et al. (under review). The scale consists of twelve items and an example of a question is 'My manager helps me to discover my strengths'. The respondents could answer on a scale of 1 (never) till 7 (almost always). For this scale, a KMO of .93 was found and a significant value on Bartlett's Sphericity test ( $p = < 0.05$ ). In the 'Total Variance explained' table it was shown that two eigenvalues had a higher value than 1. Also the screeplot showed that two components needed to be used. Two eigenvalues were above 1 (8.93 and 1.33), 74.45% of the variance was explained. All factor loadings were above .30. The Cronbach's  $\alpha$  was .97. However, because factor analysis revealed that the strength-based leadership scale consisted of two scales, it was decided to split this scale into two scales. The first scale is about the opportunities the employee gets in order to use their strengths; therefore this scale is called 'leader support for strength use'. For this scale, a KMO of .88 was found and a significant value on Bartlett's Sphericity test ( $p = < 0.05$ ). One eigenvalue had a higher value than 1 (4.96). All factor loadings were above .30 and the Cronbach's  $\alpha$  was .96, representing a good reliability. The values in the column Cronbach's Alpha if Item Deleted were lower than the overall alpha so no items had to be deleted. The other scale had to do with the identification and development of the strengths of an employee; therefore this scale is called 'leader support for strength identification'. A KMO of .901 was found and a significant value on Bartlett's Sphericity test ( $p = < 0.05$ ). One eigenvalue was higher than 1 (5.24). All factor loadings were above .30 and the Cronbach's  $\alpha$  was .76; representing a good reliability according to the conventional level of  $>.70$ . According to the Cronbach's Alpha if Item Deleted column, no items had to be deleted. All results can be found in table 5, 6 and 7 in Appendix IV.

*Control variables.* Since tenure, age, and education level, may have an effect on the mediating, moderating and dependent variable, these are included in the study. Control variables are variables that do not change throughout the analysis, and are used to control for contamination in the measurement of predictor variables (Warner, 2013). Tenure and age are measured in years and education level based on the Dutch education levels (primary school, secondary school/pre-university education, MBO, HBO, WO). Gender is measured as a dichotomous variable (1=male, 2=female).

### *Manipulation check*

Moreover, a one-way analysis of variance (ANOVA) was performed in order to compare the mean scores of more than two groups, namely the mean scores of each organization. A statistically significant difference was found at the  $p < .05$  level in the scores on leader support for strength use ( $F(3, 149) = 6.95, p = .29$ ), leader support for strength identity ( $F(3, 149) = 9.37, p = .22$ ), autonomy,

( $F = (3, 129) = 4.39, p = .038$ ), Theory Y ( $F(3, 127) = 4.53, p = .04$ ), and Theory X ( $F(3, 127) = 5.14, p = .001$ ). Results of this can be found in Appendix III in table 3 and 4. The actual difference in mean scores between groups were calculated and measured against Cohen's criteria (Pallant, 2010). The effect size for leader support for strength use was .12, for leader support for strength identity .16, for autonomy the effect size was .09, for Theory Y this was .10 and for Theory Y .11. According to Cohen's criteria (Pallant, 2010), this means that all effect sizes are classified as large. The post-hoc comparisons using the Tukey HSD test indicated the difference in mean scores, which can be found in table 2 of Appendix III. Therefore, a dummy variable for two organizations was made and added as a control variable to the Hayes PROCESS routine.

## Results

### *Descriptive statistics*

The descriptive statistics about the means, standard deviation and Pearson's correlations can be found in Table 1. All correlations were below .9, the VIF values were below 10 and the Tolerance values were more than .10, which means multicollinearity did not occur. Scenario was not significantly correlated to perceived autonomy of employees ( $r = .05, n.s.$ ), Theory Y ( $r = -.06, n.s.$ ) and Theory X ( $r = .07, n.s.$ ). There was an insignificantly positive relationship between scenario and leader support for strength use ( $r = .04, n.s.$ ) and leader support for strength identity ( $r = 0.8, n.s.$ ).

Autonomy was significantly positively related to Theory Y ( $r = .75, p < 0.01$ ) and significantly negatively related to Theory X ( $r = -.37, p < 0.01$ ).

Leader support for strength use correlated significantly positive with autonomy ( $r = .64, p < 0.01$ ) and Theory Y ( $r = .59, p < 0.01$ ) and significantly negative with Theory X ( $r = -.23, p < 0.05$ ). Leader support for strength identity correlated significantly with autonomy ( $r = .73, p < .01$ ), and Theory Y ( $r = .64, p < 0.01$ ). Leader support for strength identity was insignificantly correlated to Theory X ( $r = .15, n.s.$ ).

The control variable 'feedback sign' (how positive the employees perceived their performance appraisal) was added in order to check the experience of the employees regarding their performance appraisal (very positive – very negative). This item correlated positively with leader support for strength use ( $r = .50, p < 0.01$ ), leader support for strength identity ( $r = .52, p < 0.01$ ), autonomy ( $r = -.61, p < 0.01$ ), Theory Y ( $r = .42, p < 0.01$ ) and negatively with Theory X ( $r = -.24, p < 0.01$ ).

In addition, the control variable supervisor support was added. Supervisor support correlated with scenario ( $r = -0.1, n.s.$ ). Moreover, supervisor support correlated significantly with leader support for strength use ( $r = .65, p < 0.01$ ), and leader support for strength identity ( $r = .71, p < 0.01$ ), autonomy ( $r = .83, p < 0.01$ ), Theory Y ( $r = .71, p < 0.01$ ) and Theory X ( $r = -.35, p < 0.05$ ).

**Table 1: Means, SD, and correlations among dependent, independent, and control variables**

| Variable                                | M     | SD    | 1      | 2     | 3    | 4   | 5     | 6      | 7    | 8            | 9            | 10           | 11           |
|-----------------------------------------|-------|-------|--------|-------|------|-----|-------|--------|------|--------------|--------------|--------------|--------------|
| 1. Gender                               | 1.75  | .43   | -      |       |      |     |       |        |      |              |              |              |              |
| 2. Age                                  | 45.81 | 10.81 | -.38** | -     |      |     |       |        |      |              |              |              |              |
| 3. Education                            | 3.72  | .82   | -.17*  | .12   | -    |     |       |        |      |              |              |              |              |
| 4. Tenure                               | 16.31 | 8.13  | -.24** | .61** | .01  | -   |       |        |      |              |              |              |              |
| 5. Supervisor support                   | 4.93  | 1.33  | .23**  | -.02  | .05  | .11 | -     |        |      |              |              |              |              |
| 6. Feedback sign                        | 3.78  | .91   | .22    | -.14  | .24  | .01 | .52** | -      |      |              |              |              |              |
| 7. Scenario                             | .511  | .50   | .07    | .05   | .02  | .08 | -.01  | X      | -    |              |              |              |              |
| 8. Leader support for strength use      | 4.66  | 1.31  | .12    | -.04  | .13  | .08 | .65** | .50**  | .04  | $\alpha$ .96 |              |              |              |
| 9. Leader support for strength identity | 4.10  | 1.57  | .27**  | -.06  | .02  | .12 | .71** | .52**  | .08  | .75**        | $\alpha$ .97 |              |              |
| 10. Autonomy                            | 4.74  | 1.40  | .18*   | .01   | .06  | .05 | .83** | -.61** | .05  | .64**        | .73**        | $\alpha$ .94 |              |
| 11. Leadership style Theory Y           | 3.57  | .59   | .12    | .07   | .09  | .11 | .71** | .42**  | -.06 | .59**        | .64**        | .75**        | $\alpha$ .83 |
| 12. Leadership style Theory X           | 2.75  | .73   | -.07   | .04   | -.06 | .07 | -.35* | -.24*  | .07  | -.23**       | -.15         | -.37**       | -.18*        |

\* Correlation is significant at the < 0.05 level (1-tailed)

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



### *Second order factor analysis*

Because high correlations were found between supervisor support, autonomy and leadership style Theory X/Y, a second order factor analysis was carried out. The results of this are shown in table 12 and 13 in appendix V. The 'Total Variance explained' table showed that one eigenvalue had a higher value than 1 (2.68), which means that supervisor support, autonomy, and leadership style Theory X/Y loaded on one factor. However, the second Eigenvalue was .87 (rounded .90), which is relatively high and almost 1. Based on the rotated component matrix and on theoretical support it was found that Theory X loaded on another factor. The screeplot did also confirm a two-factor solution (see appendix V). Therefore, it is decided to go for the two-factor solution. Since supervisor support correlated high with leader support for strength identity, autonomy and Theory Y, this variable is not used as a control variable. Results will be presented for both outcome variables 'leadership style Theory Y' and 'leadership style Theory X'. In case no unambiguous results were found, the results with outcome variable Theory X were used as decisive for the relationship between autonomy and Theory X/Y (hypothesis 2).

### **Hayes PROCESS routine**

In order to test the conceptual model, model 7 of the Hayes PROCESS routine (Hayes, 2012) was used. In order to make a distinction between the control (0) and experimental (1) group, the dummy variable 'scenario' was used. When the coefficient shows a positive correlation, it indicates that it applies for the experimental group. When the coefficient shows a negative correlation, it indicates the control group. Results of the analysis are shown in Table 2 (moderator leader support for strength use, outcome variable Theory Y), Table 3 (moderator leader support for strength use, outcome variable Theory X), Table 4 (moderator leader support for strength identity, outcome variable Theory Y), and Table 5 (moderator leader support for strength identity, outcome variable Theory X).

### *Main effect of performance appraisal on autonomy*

In order to test hypothesis 1: '*performance appraisals have a negative influence on the perceived autonomy of employees*', the Hayes PROCESS routine was used. It was hypothesized that there was a negative influence of performance appraisal on the perceived autonomy of employees. However, there was no significant relationship found (Table 2;  $B = .51$ , n.s.; Table 3:  $B = .92$ , n.s., Table 4;  $B = -.04$  n.s., Table 5;  $B = .28$ , n.s.). Therefore, hypothesis 1 could not be accepted.

### *Main effect of autonomy on Theory X/Y leadership style*

Hypothesis 2: '*perceived autonomy of employees is negatively related to perceptions of employees regarding leadership style Theory X and is positively related to perceptions of a leadership style Theory Y*' was also tested by the Hayes PROCESS routine. There was a significant direct effect from perceived autonomy on Theory X leadership style (Table 3 & 5;  $B = -.26$   $p < 0.01$ ). The bootstrap 95%

confidence intervals (CI) did not include zero, which supports the direct effect between autonomy and Theory X leadership style. There was also a significant effect from autonomy on Theory Y leadership style (Table 2 & 4;  $B = .32$ ,  $p < 0.01$ ). This shows that there was a positive effect of autonomy on perceptions of Theory Y. The bootstrap 95% confidence intervals (CI) again did not include zero. Therefore, hypothesis 2 was accepted.

#### *Moderation effect*

In order to test hypothesis 3, the Hayes PROCESS routine was used. Hypothesis 3 was: *'The relationship between performance appraisal and perceived autonomy is moderated by strength-based leadership, in such a way that the negative effect of performance appraisal on perceived autonomy is weaker to the extent that the leader is experienced as more strength-based.'* Since factor analysis had shown that the scale of strength-based leadership consisted of two subscales, it was decided to split this scale into 'leader support for strength use' and 'leader support for strength identification'. The Hayes PROCESS routine was applied once for Theory Y and once for Theory X leadership style, both for the leader support for strength identification scale and the leader support for leader support for strength use scale. Regarding the leader support for strength identity scale, there was an insignificant interaction effect for outcome variable Theory Y leadership style (Table 4;  $B = .01$ , *n.s.*) and for outcome variable Theory X leadership style (Table 5;  $B = -.05$ , *n.s.*). Regarding leader support for strength use scale, there was also an insignificant interaction effect for outcome variable Theory Y leadership style (Table 2;  $B = -.09$ , *n.s.*) and for outcome variable Theory X leadership style (Table 3;  $B = -.16$ , *n.s.*). This means that hypothesis 3 could not be accepted.

#### *Additional findings*

There was a significant direct effect of leader support for strength use on the feeling of autonomy (Table 2;  $B = .67$ ,  $p < 0.01$  & Table 3;  $B = .41$ ,  $p < 0.1$ ). There was also a significant effect of leader support for strength identity on feeling of autonomy (Table 4;  $B = .63$ ,  $p < 0.01$ , Table 5;  $B = .40$ ,  $p < 0.01$ ). This means that strength-based leadership (either focusing on giving employees the opportunity to use their strengths or help them identify/develop their strengths) has a positive effect on perceived autonomy of employees.

Since the ANOVA analysis indicated that the organizations significantly differed from each other, the organizations were added as a control variable in PROCESS model 7. Regarding the model with outcome variable Theory Y and leader support for strength use as a moderator, there was no significant effect from the organizations (Table 2; primary school;  $B = -.07$ , *n.s.*). However, regarding the model with outcome variable Theory X leadership style and leader support for strength use and strength identity as a moderator, there was a significant effect from the trade union (Table 3; trade union;  $B = -.39$ ,  $p < 0.05$ , Table 5; trade union;  $B = -.39$ ,  $p < 0.05$ ). This means that the trade union showed a significant lower score on perceptions of Theory X.

**Table 2: Results from Hayes Process Routine – outcome leader ship style Theory Y – moderator: leader support for strength use**

|                                                                         | <b>Model 1</b><br><b>F(10,120) = 11.33***</b><br><b>Main effect on mediating</b><br><b>variable: autonomy</b> |                |               | <b>Model 2</b><br><b>F(9,121) = 18.08</b><br><b>Main effect on dependent</b><br><b>variable: Theory Y</b> |             |          |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------|---------------|-----------------------------------------------------------------------------------------------------------|-------------|----------|
| <i>Predictor variable</i>                                               | <i>B</i>                                                                                                      | <i>s.e.</i>    | <i>t</i>      | <i>B</i>                                                                                                  | <i>s.e.</i> | <i>t</i> |
| Scenario                                                                | .51                                                                                                           | .72            | .70           | -.12                                                                                                      | .07         | -1.67    |
| Gender                                                                  | .32                                                                                                           | .32            | 1.01          | -.07                                                                                                      | .12         | -.61     |
| Age                                                                     | .01                                                                                                           | .01            | .97           | .00                                                                                                       | .00         | .87      |
| Education                                                               | -.03                                                                                                          | .12            | -.28          | .05                                                                                                       | .05         | 1.06     |
| Tenure                                                                  | -.00                                                                                                          | .02            | -.12          | .00                                                                                                       | .01         | .14      |
| Theory X                                                                | -.45*                                                                                                         | .15            | -3.02         | .12                                                                                                       | .07         | 1.72     |
| Primary schools                                                         | -.07                                                                                                          | .28            | -.27          | -.22                                                                                                      | .11         | -1.97    |
| Trade union                                                             | -.06                                                                                                          | .28            | -.23          | -.01                                                                                                      | .09         | -.09     |
| Leader support strength use                                             | .67***                                                                                                        | .11            | 5.91          |                                                                                                           |             |          |
| Scenario x leader support strength use                                  | -.09                                                                                                          | .15            | -.61          |                                                                                                           |             |          |
| Autonomy                                                                |                                                                                                               |                |               | .32***                                                                                                    | .03         | 10.06    |
| <i>R</i> <sup>2</sup>                                                   | .48                                                                                                           |                |               | .61                                                                                                       |             |          |
| <b>Moderated mediation analysis:</b>                                    |                                                                                                               |                |               |                                                                                                           |             |          |
| Bootstrap results for conditional indirect effects                      |                                                                                                               |                |               |                                                                                                           |             |          |
| of performance appraisal on Theory Y by leader support for strength use |                                                                                                               |                |               |                                                                                                           |             |          |
|                                                                         | <b>Boot indirect effect</b>                                                                                   | <b>Boot SE</b> | <b>LL 95%</b> | <b>UL 95% CI</b>                                                                                          |             |          |
|                                                                         | .07                                                                                                           | .09            | -.10          | .23                                                                                                       |             |          |
|                                                                         | .03                                                                                                           | .06            | -.09          | .14                                                                                                       |             |          |
|                                                                         | -.01                                                                                                          | .09            | -.20          | .16                                                                                                       |             |          |

**Tabel 3: Results from Hayes Process Routine – outcome leadership style Theory X – moderator: leader support for strength use**

|                                                                         | <b>Model 1</b><br><b>F(10,120) = 20.08***</b><br><b>Main effect on mediating</b><br><b>variable: autonomy</b> |                |               | <b>Model 2</b><br><b>F(9,121) = 4.10***</b><br><b>Main effect on dependent</b><br><b>variable: Theory X</b> |             |          |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------|---------------|-------------------------------------------------------------------------------------------------------------|-------------|----------|
| <i>Predictor variable</i>                                               | <i>B</i>                                                                                                      | <i>s.e.</i>    | <i>t</i>      | <i>B</i>                                                                                                    | <i>s.e.</i> | <i>t</i> |
| Scenario                                                                | .92                                                                                                           | .63            | 1.46          | .17                                                                                                         | .12         | 1.49     |
| Gender                                                                  | .19                                                                                                           | .27            | .69           | .15                                                                                                         | .18         | .85      |
| Age                                                                     | .00                                                                                                           | .01            | .06           | -.00                                                                                                        | .01         | -.60     |
| Education                                                               | -.07                                                                                                          | .11            | -.63          | -.04                                                                                                        | .07         | -.56     |
| Tenure                                                                  | -.01                                                                                                          | .01            | -.58          | .01                                                                                                         | .01         | 1.63     |
| Theory Y                                                                | 1.37***                                                                                                       | .19            | 7.28          | .33                                                                                                         | .18         | 1.83     |
| Primary schools                                                         | .12                                                                                                           | .29            | .40           | .18                                                                                                         | .18         | .98      |
| Trade union                                                             | .18                                                                                                           | .20            | .89           | -.39*                                                                                                       | .15         | -2.53    |
| Leader support strength use                                             | .41***                                                                                                        | .09            | 4.32          |                                                                                                             |             |          |
| Scenario x leader support strength use                                  | -.16                                                                                                          | .13            | -1.29         |                                                                                                             |             |          |
| Autonomy                                                                |                                                                                                               |                |               | -.26***                                                                                                     | .06         | -4.10    |
| <i>R</i> <sup>2</sup>                                                   | .64                                                                                                           |                |               | .25                                                                                                         |             |          |
| <b>Moderated mediation analysis:</b>                                    |                                                                                                               |                |               |                                                                                                             |             |          |
| Bootstrap results for conditional indirect effect                       |                                                                                                               |                |               |                                                                                                             |             |          |
| of performance appraisal on Theory X by leader support for strength use |                                                                                                               |                |               |                                                                                                             |             |          |
|                                                                         | <b>Boot indirect effect</b>                                                                                   | <b>Boot SE</b> | <b>LL 95%</b> | <b>UL 95% CI</b>                                                                                            |             |          |
|                                                                         | -.10                                                                                                          | .07            | -.25          | .01                                                                                                         |             |          |
|                                                                         | -.04                                                                                                          | .04            | -.15          | .03                                                                                                         |             |          |
|                                                                         | .01                                                                                                           | .06            | -.10          | .12                                                                                                         |             |          |

**Table 4: Results from Hayes Process Routine – outcome leadership style Theory Y – moderator: leader support for strength identity**

|                                                | <b>Model 1</b><br><b><i>F</i>(10,120) = 23.39***</b><br><b>Main effect on mediating</b><br><b>variable: autonomy</b> |             |          | <b>Model 2</b><br><b><i>F</i>(9,121) = 18.08</b><br><b>Main effect on dependent</b><br><b>variable: Theory Y</b> |             |          |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------|----------|------------------------------------------------------------------------------------------------------------------|-------------|----------|
| <i>Predictor variable</i>                      | <i>B</i>                                                                                                             | <i>s.e.</i> | <i>t</i> | <i>B</i>                                                                                                         | <i>s.e.</i> | <i>t</i> |
| Scenario                                       | -.04                                                                                                                 | .49         | -.07     | -.12                                                                                                             | .07         | -1.67    |
| Gender                                         | .06                                                                                                                  | .25         | .23      | -.07                                                                                                             | .12         | -.61     |
| Age                                            | .01                                                                                                                  | .01         | 1.20     | .00                                                                                                              | .01         | .87      |
| Education                                      | .07                                                                                                                  | .09         | .77      | .05                                                                                                              | .05         | 1.06     |
| Tenure                                         | -.01                                                                                                                 | .01         | -.93     | .00                                                                                                              | .01         | .14      |
| Theory X                                       | -.52                                                                                                                 | .12         | -4.26    | .12                                                                                                              | .07         | 1.72     |
| Primary schools                                | .10                                                                                                                  | .22         | .45      | -.22                                                                                                             | .11         | -1.97    |
| Trade union                                    | -.11                                                                                                                 | .24         | -.45     | -.01                                                                                                             | .09         | -.10     |
| Leader support strength<br>identity            | .63***                                                                                                               | .09         | 7.02     |                                                                                                                  |             |          |
| Scenario x leader support<br>strength identity | .01                                                                                                                  | .11         | .13      |                                                                                                                  |             |          |
| Autonomy                                       |                                                                                                                      |             |          | .32***                                                                                                           | .03         | 10.06    |
| <i>R</i> <sup>2</sup>                          | .61                                                                                                                  |             |          | .61                                                                                                              |             |          |

**Moderated mediation analysis:**  
Bootstrap results for conditional indirect effect  
of performance appraisal on Theory X by leader support for strength identity

|  | <b>Boot indirect<br/>effect</b> | <b>Boot SE</b> | <b>LL 95%</b> | <b>UL 95% CI</b> |
|--|---------------------------------|----------------|---------------|------------------|
|  | -.00                            | .08            | -.17          | .14              |
|  | .01                             | .05            | -.11          | .10              |
|  | .01                             | .07            | -.12          | .14              |

**Tabel 5: Results from Hayes Process Routine – outcome leadership style Theory X - moderator: leader support for strength identity**

|                                                                                               | <b>Model 1</b><br><b>F(10,120) = 23.32***</b><br><b>Main effect on mediating</b><br><b>variable: autonomy</b> |                |               | <b>Model 2</b><br><b>F(9,121) = 4.10</b><br><b>Main effect on dependent</b><br><b>variable: Theory X</b> |             |          |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------|---------------|----------------------------------------------------------------------------------------------------------|-------------|----------|
| <i>Predictor variable</i>                                                                     | <i>B</i>                                                                                                      | <i>s.e.</i>    | <i>t</i>      | <i>B</i>                                                                                                 | <i>s.e.</i> | <i>t</i> |
| Scenario                                                                                      | .28                                                                                                           | .41            | .69           | .17                                                                                                      | .12         | 1.49     |
| Gender                                                                                        | .07                                                                                                           | .24            | .29           | .15                                                                                                      | .18         | .85      |
| Age                                                                                           | .00                                                                                                           | .01            | .46           | -.00                                                                                                     | .01         | -.60     |
| Education                                                                                     | .01                                                                                                           | .10            | .15           | -.04                                                                                                     | .06         | -.56     |
| Tenure                                                                                        | -.01                                                                                                          | .01            | -1.28         | .01                                                                                                      | .01         | 1.63     |
| Theory Y                                                                                      | 1.13                                                                                                          | .19            | 5.92          | .33                                                                                                      | .18         | 1.83     |
| Primary schools                                                                               | .18                                                                                                           | .25            | .70           | .18                                                                                                      | .18         | .98      |
| Trade union                                                                                   | .18                                                                                                           | .20            | .90           | -.39*                                                                                                    | .15         | -2.53    |
| Leader support strength<br>identity                                                           | .40***                                                                                                        | .08            | 4.94          |                                                                                                          |             |          |
| Scenario x leader support<br>strength identity                                                | -.05                                                                                                          | .09            | -.51          |                                                                                                          |             |          |
| Autonomy                                                                                      |                                                                                                               |                |               | -.26***                                                                                                  | .06         | -4.10    |
| <i>R</i> <sup>2</sup>                                                                         | .67                                                                                                           |                |               | .25                                                                                                      |             |          |
| <b>Moderated mediation analysis:</b>                                                          |                                                                                                               |                |               |                                                                                                          |             |          |
| Bootstrap results for conditional indirect effect                                             |                                                                                                               |                |               |                                                                                                          |             |          |
| of performance appraisal on leadership style Theory X by leader support for strength identity |                                                                                                               |                |               |                                                                                                          |             |          |
|                                                                                               | <b>Boot indirect<br/>effect</b>                                                                               | <b>Boot SE</b> | <b>LL 95%</b> | <b>UL 95% CI</b>                                                                                         |             |          |
|                                                                                               | -.04                                                                                                          | .06            | -.18          | .06                                                                                                      |             |          |
|                                                                                               | -.02                                                                                                          | .04            | -.12          | .04                                                                                                      |             |          |
|                                                                                               | -.01                                                                                                          | .05            | -.11          | .09                                                                                                      |             |          |

## **Discussion and conclusion**

This research in non-profit organizations tried to conclude upon whether performance appraisal influences perceived autonomy of employees, and in turn, perceptions of employees regarding a Theory X or Y leadership style. Moreover, this research investigated the buffering effect of strength-based leadership on the relationship between performance appraisal and feeling of autonomy of employees. The results of our study showed no support for the relationship between performance appraisal on feelings of autonomy, moderated by strength-based leadership. However, the results show support for the relationship between levels of perceived autonomy and views of employees regarding the leadership style Theory X/Y of the supervisor. There are several possible explanations for these results.

The direct relationship between performance appraisal and perceptions of autonomy was tested. It was expected that performance appraisal would hurt the level of perceived autonomy of employees because performance appraisal is seen as a controlling event (Deci, Ryan, & Vansteenkiste, 2008). However, this relationship was not found. First of all, it might be that respondents were unable to imagine their performance appraisal or informal conversation. Although the respondents were asked many times (in the introduction of each scale) to recap their performance appraisal or their informal conversation, it may have been too difficult for the respondents to link the questions to their performance appraisal or their informal conversation. Therefore, it might be that the questions were not answered from the state of mind about the performance appraisal or the informal conversation. Secondly, the questionnaire was distributed among non-profit companies in which the performance appraisals are designed in such a way that it focus on the development of employees, instead of 'controlling' employees. For example, within the primary schools, employees are appraised on eight competencies on a scale from 1 to 4. When employees score a 2 or lower, employees need to make a personal development plan (POP), in order to improve their performance. This indicates that there are no fixed consequences to the performance appraisal. In this case, performance appraisal is more seen as an informal discussion with regards to personal development instead of a strict appraisal linked to a numerical rating. Therefore, it might be that the employees within these companies do not perceive performance appraisal as controlling. As Aguinis, Joo and Gottfredson (2011) state, benefits of performance management arise when the system is congruent with the culture of the organization. The culture within the educational organizations is based on learning and development, and the performance appraisal is also focused on helping the employee develop him/herself.

The relationship between feelings of autonomy and perceptions of employees regarding a Theory X/Y leadership style was also tested. Feelings of autonomy of employees lead to a Theory Y leadership style, as perceived by employees. Low levels of perceived autonomy of employees result in the perception that a leadership style associated with Theory X prevails in the organization. Due to high levels of perceived autonomy, employees perceive assumptions of their supervisor associated with Theory Y (Fiman, 1973; Klein, 1991). Thus, these findings support the idea that perceived

autonomy influences the perceived leadership style of the supervisors; either the Theory X leadership style or the Theory Y leadership style (Koppelman, Protta, & Falk, 2010).

Thirdly, the relationship between performance appraisal and perceived autonomy was expected to be moderated by strength-based leadership in such a way that the negative effect of performance appraisal on perceived autonomy is weaker under the condition of strength-oriented leadership. Due to the adjustment of the performance appraisal to the strengths of the employee by the use of strength based leadership (Van Woerkom & De Bruijn, in press), it follows that performance appraisals are more customized towards the employee and therefore it is likely that the perceived level of autonomy is less damaged. However, we found no support for this relationship. A possible explanation for this result is that employees do not feel a decrease in their level of perceived autonomy, since the way in which the performance appraisals are conducted within these non-profit companies does not impede their level of autonomy, considering the performance appraisals are not perceived as controlling.

### **Limitations and suggestions for future research**

As in most studies, this research has several limitations that should be considered. First of all, there are some limitations regarding the scenario experiment. The participants had to remember their performance appraisal, which was mentioned many times during the questionnaire. However, the respondents were not asked to write down some words to make it easier for them to remember their last performance appraisal. The case could be that respondents could not recap their most recent performance appraisal or informal conversation with their manager. This could be an explanation for the fact that there was no effect of the scenario study. Therefore, a suggestion for future research is to hand out the questionnaires directly after the informal conversation or the performance appraisal. This way, respondents are better able to answer the questions from a particular state of mind. In addition, in the questionnaire filled out by the experimental group an additional question was included about the rated feedback of the most recent performance appraisal (feedback sign). However, there was no question for the control group regarding the satisfaction about the informal conversation. It is recommended, for future research, to add a question about this for the control group, in order to compare the effects. Moreover, in this study we assume that performance appraisals are perceived as controlling by employees. However, within the Netherlands there are also forms of performance appraisals that focus on learning and development. For example, after interviewing the principal and HR manager of the childcare organization and the board of the primary schools, it became clear that the performance appraisals were not (only) focused on rating the employees. Within the trade union, several conversations regarding the performance of the employee are used: planning, development and appraisal. This indicates that they also focus on development of an employee instead of, for example, using forced distribution for the appraisals of the employees. Since different types of performance



appraisals might influence the results of the study, it is suggested, for future research, to control for different types of performance appraisal.

Secondly, the constructs supervisor support, autonomy, and Theory Y partly overlap, which means that the constructs might measure the same thing. While some semantic overlap is necessary to create internal consistency, it should not continue across scales (Arnulf, Larsen, Martinsen and Bong, 2014; Nimon, Shuck, Zigarmi, 2015). Despite the theoretical contributions made by this research, the second order factor analysis of the variables (e.g. supervisor support, autonomy and Theory Y) represented the interrelationships among the items of the variable. Therefore, for future research it is recommended to further explore the internal consistency of autonomy, supervisor support and Theory Y (Arnulf, Larsen, Martinsen & Bong, 2014). For this study, it is suggested to rely on the results of outcome variable Theory X.

Third, a limitation of the Theory X/Y leadership scale is its reflection on assumptions of employees about the behaviors of the supervisors, which means that it does not reflect actual managerial behaviors, *per se* (Kopelman, Protzas, & Falk, 2010). Actual behavior of supervisors may differ from perceptions of the employees. For future research it is suggested to collect multi-source and multi-level data. Moreover, additional leadership styles may exist and therefore it is suggested for future research to investigate other leadership constructs (Kopelman, Protzas, & Falk, 2010).

Fourth, a limitation regarding common method variance may be in place. Common method variance is variance due to the measurement method. One of the most likely causes of method bias has to do with a common rater for multiple constructs. The same persons provide the measures of the dependent as well as the independent variables, which can cause method bias (Podsakoff, MacKenzie, & Lee, & Podsakoff, 2003). Therefore future research should control for common method variance for example by collecting multi-source data.

Fifth, there are some limitations with regards to the size of the sample. This study consisted of only 133 respondents, of whom 68 respondents were in the experimental group and 65 in the control group. A larger sample size is more likely to find a significant effect (Halpern & Warner, 2002). A sample size of ten respondents per item is seen as optimal (Sapnas & Zeller, 2002). This might limit the generalizability of the results. This means that this study would probably have more adequate results with 670 participants (a total of 67 items in the questionnaire).

Finally, there is a limitation regarding the generalizability of this research. It must be taken into account that this study is conducted among non-profit companies in the Netherlands. Meaning that results are based on a group that consists of employees under the Dutch working culture. Consequently, future research might consider examining a broader range of organizations and countries.

To conclude, this study did not show an effect of performance appraisal on perceived autonomy of employees. The expected difference between the experimental and control group on performance appraisal and perceptions of autonomy and the moderating effect of strength-based

leadership was not found. Thus, more research is needed on this relationship. Consequently, a better understanding will be realized regarding the effect of performance appraisal on perceived autonomy, moderated by strength-based leadership, and views of employees of the leadership style of their supervisor. Moreover, the circumstances that influence the effects of performance appraisal can be investigated when further research in for example multiple commercial companies in different countries is realized. However, the relationship between feeling of autonomy and perceptions of employees regarding a Theory X/Y leadership style was confirmed. As Theory X/Y is to be seen as relevant to leadership and organizational development (Koppelman et al., 2010), this study confirms that perceptions of autonomy do influence perceptions of a Theory X/Y leadership style within the organization and therefore should be taken into account by organizations. In addition, this study contributes to the existing performance appraisal literature, since such a scenario study in which the effect between scenario performance appraisal and scenario informal conversation are compared by using a survey. Therefore, this study serves as a basis for further research about performance appraisal.

### **Practical implications**

There are several practical implications to this study. It was found that leader support for strength use and strength identification (strength-based leadership) result in higher levels of perceived autonomy of employees. This means that a strength-based leader can increase feelings of autonomy of employees. Organizations that want their employees to perceive a higher feeling of autonomy, should pay attention to the extent to which managers are strength-based and focus on the use and development of strengths of employees. Moreover, this study helps to understand what feelings of autonomy do with perceptions of employees towards their managers. When perceptions of autonomy are high, employees view the leadership style of their supervisors as Theory Y, representing a more participative leadership style. Organizations that embrace assumptions of Theory Y of supervisors show confidence in human capacities and will find and apply innovative ideas (McGregor, 1960). Given these facts, this study shows that high levels of perceived autonomy lead to feelings of the prevailing Theory Y of supervisors within an organization and therefore organizations should take into account the perceived autonomy of employees.

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## Appendices

### Appendix I – Demographic characteristics

Table 1: Demographic characteristics detached into experimental and control group

| <b>Demographic characteristics</b> |                            |       |      |                                  |       |                             |      |
|------------------------------------|----------------------------|-------|------|----------------------------------|-------|-----------------------------|------|
|                                    | <b>Total group (N=133)</b> |       |      | <b>Experimental group (N=68)</b> |       | <b>Control group (N=65)</b> |      |
|                                    | Mean / %                   | SD    | Sig. | Mean / %                         | SD    | Mean / %                    | SD   |
| <b>Gender</b>                      |                            | .43   | .46  |                                  | .41   |                             | .45  |
| Male                               | 24.8% (N=33)               |       |      | 22.1% (N=15)                     |       | 27.7% (N=18)                |      |
| Female                             | 75.2% (N=100)              |       |      | 77.9% (N=53)                     |       | 72.3% (N=47)                |      |
| <b>Age</b>                         |                            |       |      |                                  |       |                             |      |
| years                              | 45.81 (N=133)              | 18.81 | .53  | 46.4 (N=68)                      | 11.60 | 45.22 (N=65)                | 9.97 |
| <b>Education</b>                   |                            |       |      |                                  |       |                             |      |
| Primary school                     | 1.5% (N=2)                 | .82   | .85  | 1.5% (N=1)                       | .84   | 1.5% (N=1)                  | .81  |
| Secondary “                        | 3.7% (N=5)                 |       |      | 4.4% (N=3)                       |       | 3.1% (N=2)                  |      |
| MBO                                | 30.6% (N=41)               |       |      | 29.4% (N=20)                     |       | 32.3% (N=21)                |      |
| HBO                                | 48.9% (N=65)               |       |      | 48.5% (N=33)                     |       | 49.2% (N=32)                |      |
| WO                                 | 15% (N=20)                 |       |      | 16.2% (N=11)                     |       | 13.8% (N=9)                 |      |
| <b>Tenure</b>                      |                            |       |      |                                  |       |                             |      |
| years                              | 16.31 (N=133)              | 8.94  | .34  | 16.97 (N=68)                     | 8.95  | 15.62 (N=65)                | 7.18 |

## Appendix II – Independent t-test

Table 2: Independent t-test for strength-based leadership, autonomy and Theory X/Y

| <i>Variable</i>          | Control group |      |      |     |       |      | Experimental group |      |      |       |
|--------------------------|---------------|------|------|-----|-------|------|--------------------|------|------|-------|
|                          | N             | Mean | SD   | F   | t     | Sig. | N                  | Mean | SD   | t     |
| <b>Leader support</b>    | 75            | 4.67 | 1.29 | .11 | -.39  | .70  | 78                 | 4.75 | 1.37 | -.39  |
| <b>Strength use</b>      |               |      |      |     |       |      |                    |      |      |       |
| <b>Leader support</b>    | 75            | 3.99 | 1.59 | .01 | -1.17 | .24  | 78                 | 4.29 | 1.57 | -1.17 |
| <b>strength identity</b> |               |      |      |     |       |      |                    |      |      |       |
| <b>Autonomy</b>          | 65            | 4.67 | 1.41 | .17 | -.56  | .57  | 68                 | 4.81 | 1.38 | -.56  |
| <b>Theory y</b>          | 63            | 3.61 | .53  | 1.2 | .70   | .49  | 68                 | 3.53 | .65  | .70   |
| <b>Theory x</b>          | 63            | 2.70 | .70  | .66 | -.75  | .46  | 68                 | 2.80 | .76  | -.75  |



### Appendix III ANOVA

Table 3: One-way between groups ANOVA of Organization Groups

| <i>Variable</i>                  |                | Sum of squares | Df  | Mean Square | F    | p    |
|----------------------------------|----------------|----------------|-----|-------------|------|------|
| Leader support strength use      | Between groups | 32.86          | 3   | 10.95       | 6.95 | .000 |
|                                  | Within groups  | 234.81         | 149 | 1.58        |      |      |
|                                  | Total          | 267.67         | 152 |             |      |      |
| Leader support strength identity | Between groups | 60.76          | 3   | 20.25       | 9.37 | .000 |
|                                  | Within groups  | 321.95         | 149 | 2.12        |      |      |
|                                  | Total          | 382.71         | 152 |             |      |      |
| Autonomy                         | Between groups | 23.78          | 3   | 7.93        | 4.39 | .001 |
|                                  | Within groups  | 233.14         | 129 | 1.81        |      |      |
|                                  | Total          | 256.92         | 132 |             |      |      |
| Theory Y                         | Between groups | 4.42           | 3   | 1.47        | 4.53 | .005 |
|                                  | Within groups  | 41.27          | 127 | .32         |      |      |
|                                  | Total          | 45.69          | 130 |             |      |      |
| Theory X                         | Between groups | 7.42           | 3   | 2.48        | 5.14 | .002 |
|                                  | Within groups  | 61.22          | 127 | .48         |      |      |
|                                  | Total          | 68.65          | 130 |             |      |      |

Table 4: Mean scores

| <i>Variable</i>                  | Primary schools | Trade union | Childcare |
|----------------------------------|-----------------|-------------|-----------|
|                                  | M               | M           | M         |
| Leader support strength use      | 5.36ab          | 4.30a       | 4.64b     |
| Leader support strength identity | 4.97a           | 3.50a       | 4.26      |
| Autonomy                         | 5.31a           | 4.30a       | 4.73      |
| Theory Y                         | 3.78a           | 3.37a       | 3.61      |
| Theory X                         | 2.40ab          | 2.95a       | 2.82b     |

Note: Means with the same subscripts within rows are significantly different at the  $p < .05$  level based on post hoc comparisons using Tukey HSD test.

## Appendix IV Factor Analysis

Table 5: Strength based leadership

| Mijn directe leidinggevende ...                                                      | Component |        |
|--------------------------------------------------------------------------------------|-----------|--------|
|                                                                                      | 1         | 2      |
| 9. ... laat me mijn werk doen op een manier die het best past bij mijn sterke punten | .994      | .112   |
| 12. ... laat me datgene doen waar ik goed in ben                                     | .967      | .044   |
| 7. ... geeft me de mogelijkheid om te doen waar ik goed in ben                       | .898      | -.008  |
| 10. ... zorgt ervoor dat het werk dat ik doe aansluit bij mijn sterke punten         | .861      | -.069  |
| 8. ... laat me gebruik maken van mijn talenten                                       | .803      | -.137  |
| 11. ...zorgt ervoor dat mijn talenten aan bod kunnen komen in mijn werk              | .760      | -.173  |
| 3 ... praat met me over het verder ontwikkelen van mijn sterktes                     | -.138     | -1.042 |
| 1. ...helpt me mijn sterke kanten te ontdekken                                       | .029      | -.933  |
| 4. ... richt mijn ontwikkeling op het uitbouwen van mijn sterktes                    | .024      | -.932  |
| 6. ... legt de nadruk op het ontwikkelen van mijn sterke punten                      | .036      | -.911  |
| 5. ... stimuleert me om mijn kwaliteiten/sterktes verder te ontwikkelen              | .088      | -.879  |
| 2. ... geeft me de kans om er achter te komen wat mijn talenten zijn                 | .282      | -.678  |
| Eigenvalue                                                                           | 8.93      | 1.33   |
| Variance explained                                                                   | 74.45%    | 11.11% |
| Cronbach $\alpha$                                                                    | .99       |        |

Table 6: Leader support for strength use

|                                                                                      | <b>Component</b> |
|--------------------------------------------------------------------------------------|------------------|
| Mijn directe leidinggevende ...                                                      | 1                |
| 12. ... laat me datgene doen waar ik goed in ben                                     | .934             |
| 10. ... zorgt ervoor dat het werk dat ik doe aansluit bij mijn sterke punten         | .913             |
| 9. ... laat me mijn werk doen op een manier die het best past bij mijn sterke punten | .909             |
| 7. ... geef me de mogelijkheid om te doen waar ik goed in ben                        | .902             |
| 8. ... laat me gebruik maken van mijn talenten                                       | .902             |
| 11. ...zorgt ervoor dat mijn talenten aan bod kunnen komen in mijn werk              | .893             |
| Eigenvalue                                                                           | 4.97             |
| Variance explained                                                                   | 82,60%           |
| Cronbach $\alpha$                                                                    | .96              |

Table 7: Leader support for strength identity

|                                                                         | <b>Component</b> |
|-------------------------------------------------------------------------|------------------|
| Mijn directe leidinggevende ...                                         | 1                |
| 1. ...helpt me mijn sterke kanten te ontdekken                          | .954             |
| 4. ... richt mijn ontwikkeling op het uitbouwen van mijn sterktes       | .947             |
| 5. ... stimuleert me om mijn kwaliteiten/sterktes verder te ontwikkelen | .942             |
| 3 ... praat met me over het verder ontwikkelen van mijn sterktes        | .938             |
| 6. ... legt de nadruk op het ontwikkelen van mijn sterke punten         | .936             |
| 2. ... geeft me de kans om er achter te komen wat mijn talenten zijn    | .891             |
| Eigenvalue                                                              | 5.24             |
| Variance explained                                                      | 87.390%          |
| Cronbach $\alpha$                                                       | .97              |

Table 8: Autonomy

|                                                                                                                                              | <b>Component</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                              | <b>1</b>         |
| 2. Ik voel me begrepen door mijn directe leidinggevende                                                                                      | .908             |
| 5. Mijn directe leidinggevende luistert naar hoe ik dingen graag zou willen doen                                                             | .891             |
| 6. Mijn directe leidinggevende probeert te begrijpen hoe ik dingen zie voordat hij een suggestie doet om dingen op een nieuwe manier te doen | .889             |
| 4. Mijn directe leidinggevende moedigt mij aan om vragen te stellen                                                                          | .868             |
| 1. Ik heb het gevoel dat mijn directe leidinggevende mij keuzes en opties biedt                                                              | .867             |
| 3. Mijn directe leidinggevende spreekt zijn/haar vertrouwen uit over mijn vermogen om goed te presteren                                      | .836             |
| Eigenvalue                                                                                                                                   | 4.61             |
| Variance explained                                                                                                                           | 76.89%           |
| Cronbach $\alpha$                                                                                                                            | .94              |

Table 9: leadership style Theory Y

| <b>Mijn directe leidinggevende ...</b>                                                                                              | <b>Component</b> |          |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|
|                                                                                                                                     | <b>1</b>         | <b>2</b> |
| 13. ... denkt dat een vertrouwensrelatie tussen de leidinggevende en de medewerkers een goede manier is om medewerkers te motiveren | .817             | -.008    |
| 1. ... benadrukt gezamenlijke verantwoordelijkheid en gedeelde doelen                                                               | .784             | -.081    |
| 11. ... vindt dat medewerkers aangemoedigd moeten worden om hun ideeën en suggesties te delen                                       | .754             | -.144    |
| 4. ... vindt dat organisatie doelen en subdoelen naar alle medewerkers gecommuniceerd moeten worden                                 | .695             | -.210    |
| 10. ... vindt dat banen verrijkt moeten worden door betekenisvolle taken toe te voegen                                              | .679             | -.193    |
| 9. ... vindt dat medewerkers aangemoedigd moeten worden om deel te nemen aan de besluitvorming binnen hun eigen afdeling            | .671             | .193     |
| 3. ... verwacht hoge prestaties van alle medewerkers                                                                                | -.041            | .854     |
| 8. ... vindt dat medewerkers moeten participeren in het opstellen van individuele prestatie doelen                                  | .100             | .789     |
| Eigenvalue                                                                                                                          | 3.67             | 1.25     |
| Explained Variance                                                                                                                  | 45.92%           | 15.61%   |
| Cronbachs $\alpha$                                                                                                                  | .83              |          |

Table 10: Leadership style Theory Y forced into 1 component

| Mijn directe leidinggevende ...                                                                                                     | Component |        |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|
|                                                                                                                                     | 1         |        |
| 11. ... vindt dat medewerkers aangemoedigd moeten worden om hun ideeën en suggesties te delen                                       |           | .800   |
| 9. ... vindt dat medewerkers aangemoedigd moeten worden om deel te nemen aan de besluitvorming binnen hun eigen afdeling            |           | .786   |
| 13. ... denkt dat een vertrouwensrelatie tussen de leidinggevende en de medewerkers een goede manier is om medewerkers te motiveren |           | .782   |
| 10. ... vindt dat banen verrijkt moeten worden door betekenisvolle taken toe te voegen                                              |           | .753   |
| 1. ... benadrukt gezamenlijke verantwoordelijkheid en gedeelde doelen                                                               |           | .712   |
| 4. ... vindt dat organisatie doelen en subdoelen naar alle medewerkers gecommuniceerd moeten worden                                 |           | .560   |
| 8. ... vindt dat medewerkers moeten participeren in het opstellen van individuele prestatie doelen                                  |           | .504   |
| 3. ... verwacht hoge prestaties van alle medewerkers                                                                                |           | .402   |
| Eigenvalue                                                                                                                          | 3.67      | 1.25   |
| Explained Variance                                                                                                                  | 45.92%    | 15.61% |
| Cronbachs $\alpha$                                                                                                                  | .83       |        |

Table 11: leadership style Theory X

|                                                                                                                                                              | <b>Component<br/>1</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 6. Mijn directe leidinggevende vindt dat hij/zij constant zijn/haar medewerkers moet controleren om er zeker van te zijn dat zij werken zoals verwacht wordt | .843                   |
| 5. Mijn directe leidinggevende vindt dat de verantwoordelijkheid die wordt gegeven aan medewerkers beperkt en gecontroleerd moet worden                      | .772                   |
| 7. Mijn directe leidinggevende vindt het belangrijk om medewerkers constant te herinneren aan hun deadlines                                                  | .771                   |
| 12. Om te zorgen dat er iets gebeurt vindt mijn directe leidinggevende dat hij/zij het besluit moet nemen                                                    | .637                   |
| 2. Mijn directe leidinggevende vindt dat de hoeveelheid informatie die gegeven wordt aan medewerkers beperkt en gecontroleerd moet worden                    | .507                   |
| Eigenvalue                                                                                                                                                   | 2.57                   |
| Variance explained                                                                                                                                           | 51.302                 |
| Cronbachs $\alpha$                                                                                                                                           | .76                    |

## Appendix V

Table 12 : Second order factor analysis – one component

|                           | <b>Component</b> |
|---------------------------|------------------|
|                           | <b>1</b>         |
| Autonomy                  | ,936             |
| Supervisor Support        | ,920             |
| Leadership style Theory Y | ,853             |
| Leadership style Theory X | -,483            |
| Eigenvalue                | 2.68             |
| Variance explained        | 67.09%           |

Table 13: Second order factor analysis – two components

|                            | <b>Component</b> | <b>Component 2</b> |
|----------------------------|------------------|--------------------|
|                            | <b>1</b>         | <b>2</b>           |
| Leadership style Theory Y  | ,945             | ,157               |
| Autonomy                   | ,900             | -,114              |
| Supervisor Support         | ,887             | -,105              |
| Leadership style Theory X  | -,019            | ,988               |
| Eigenvalue                 |                  | 2.68               |
| Variance explained (total) |                  | 67.09%             |