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Affective trust through leader-follower interaction frequency:

The psychological mechanism behind the negative effects of physical distance on leader effectiveness

Master's thesis

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Abstract

While it has been found that physical distance can negatively impact leader effectiveness, leaders lead their followers from increasing physical distance. It is therefore valuable to identify the psychological mechanism behind this negative impact. Aiming to do so, the current study examined the influence of physical distance on a key factor for transformational leaders to drive follower work outcomes: affective trust. 82 followers and their leaders completed surveys regarding each other's behavior and performance, after which resulting data were analyzed with structural equation modeling. A model is presented depicting two ways in which transformational leaders drive their followers' affective organizational commitment (AOC). On the one hand transformational leaders drive their followers' cognitive trust, resulting in an increased follower affective trust and in turn in an increased follower AOC. On the other hand transformational leaders use their high leader-follower interaction frequency to drive follower affective trust and through this follower AOC. The model also depicts the psychological mechanism behind negative influence of physical distance. It has been found that physical distance negatively impacts leader-follower interaction frequency, thereby impeding follower affective trust and through this also follower AOC. Highly transformational leaders were shown to be safeguarded from this effect; although less than when they were proximate to their followers, transformational leaders were shown to interact frequently enough from a distance.

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1. Introduction

On 26th February 2013 Yahoo's CEO Marissa Mayer made a trend breaking decision: employees will no longer be allowed to work away from the office (Spijkerman, 2013). This is striking as physical distance between employee and manager has been increasing during the past decades (Antonakis & Atwater, 2002). Under the influence of transformational leadership employees are progressively more responsible for their own productiveness (Wang, Law, Hackett, Wang, Chen, 2005; Avolio, Zhu, Koh, & Bhatia, 2004); successful companies like Google and Apple encourage their employees to work where and when they feel most effective. Although this is one of the reasons transformational leaders are amongst the most effective ones (Judge & Piccolo, 2004), Yahoo may have a point. Transformational leadership drives positive employee work outcomes such as job performance (Bass & Riggio, 2006; Judge & Piccolo, 2004), but distant leaders are argued to have fewer opportunities to consider followers individually or to motivate them with inspiring vision. As a result, positive effects on job performance have been found to diminish when physical distance between leader and follower increases (Howell, Neufeld & Avolio, 2005). The psychological mechanism behind this diminishing effect has yet to be identified.

One of the most important reasons transformational leaders drive their follower's work outcomes is the amount of trust their followers have in them (Burke, Sims, Lazarro & Salas, 2007). Transformational leaders show their respect for others, their competence and reliability and also strengthen their emotional bonds with followers. This builds trust; followers feel their leader is dependable, genuinely cares about their well-being and puts effort in them (Zhu, Newman, Miau & Hooke, 2013; Schaubroeck, Lam & Peng, 2011; Dirks & Ferrin, 2002; Hackman, 2002). As a result

they do not have to worry about side-issues like politics or 'covering their backs', which is referred to as proactively gathering information that vouches for satisfactory performance to defend against negative influences (Mayer & Gavin, 2005). This increases follower psychological safety (Schaubroeck et al., 2011) and allows followers to devote more of their attention to their jobs. Followers' confidence in their capabilities of coping with demands at work thereby increases as well, which refers to an increase in their psychological availability (Li & Tan, 2012; Mayer & Gavin, 2005). Combined with the fact that followers in turn work harder for their leader because their leader works and cares for them, this leads to positive work outcomes of trusting followers (Li & Tan, 2012; Mayer & Gavin, 2005; Schaubroeck, 2011; Zhu et al., 2013). More specifically, through an increase in trust transformational leadership has been found to increase follower's job performance (Bartram & Casimir, 2007), organizational citizenship behavior (Yang & Mossholder, 2010; Zhu et al., 2013) and affective organizational commitment (Pillai, Kohles, Bligh, Carsten & Brodowsky, 2011; Yang & Mossholder, 2010).

The current study hypothesizes this trust to be the key factor in the diminishing effects of physical distance on the relationship between transformational leadership and follower work outcomes. This expectation is supported by related research which has found active duty soldiers to complete commands quicker when their platoon leader is close by versus in an overseeing position (Smith, 2008). As soldiers are supposed to complete commands from their superiors, their quickened command completion resembles an increase in job performance. The performance increase was partly caused by an increased trust in the leader. One could argue that soldiers trust their proximal combat leader to genuinely care for the team since this leader shares the dangers in the field (Smith, 2008).

Where much previous research has traditionally treated trust uni-dimensionally (Jung & Avolio, 2000; Bartram & Casimir, 2007; Braun, Peus, Weisweiler & Frey, 2013), this study will use a more complete two-dimensional concept of trust comprising cognitive and affective trust (McAllister, 1995; Dirks & Ferrin, 2002) to demonstrate the impact of physical distance on transformational leadership. Cognitive trust reflects on the confidence in a leader's abilities. It focusses on performance-relevant, personal characteristics of the leader, such as competence, reliability and integrity. Affective trust on the other hand builds on the emotional bonds between a trustor and a trustee and increases as a leader and a follower over time engage in social exchange and show reciprocated, genuine care and concern. Transformational leadership will be proposed to drive both types of trust (replicating earlier research from Schaubroeck et al., 2011 and Zhu et al., 2013), but physical distance will only be argued to impact affective trust. This proposition is based on the expectation that physical distance will negatively impact leader-follower interaction frequency, which is expected to affect affective trust but not cognitive trust. Through this route via leader-follower interaction frequency and affective trust, physical distance will be hypothesized to negatively impact the effectiveness of transformational leaders.

Combining multiple hypotheses, an integrative model will be proposed describing the relations between transformational leadership, physical distance, leader-follower interaction frequency, affective and cognitive trust in leader and positive work outcomes. This model will be tested using structural equation modeling. By doing so the current study addresses the existing knowledge gap regarding the effectiveness of transformational leaders in physically distant circumstances, contributing both theoretically and practically. In terms of the theoretical contribution, this study is the first to identify trust in leader as an explanation for the negative

influence of physical distance on transformational leadership effectiveness. Additionally it adds to the relatively small amount of work looking at the different mediating effects of cognitive trust and affective trust in the relationship between transformational leadership and positive follower work outcomes. Practically, it helps modern transformational leaders, who increasingly lead from a distance, to more effectively lead their followers.

2. Literature review

2.1. Transformational leadership

Over the years many leadership theories have been developed and studied. Most widely researched and deemed successful is the theory of transformational leadership based on the qualitative work of Burns (1978) and developed by Bass (1985). Transformational leaders drive their employees' performance by going beyond task oriented leadership; they move their followers to transcend their own self-interests for a collective purpose. Transformational leaders achieve this by using four types of behavior: idealized influence, intellectual stimulation, inspirational motivation and individualized consideration (Bass, 1985). Idealized influence is also referred to as charisma; transformational leaders act as role models and act in ways that are admired. They generally behave ethically, do not act self-centered and are willing to take risks and sacrifice themselves 'for the cause' (Bass, 1985; Bass & Avolio, 1994). Second, transformational leaders intellectually stimulate their followers. They encourage questioning old assumptions and creatively finding new perspectives and solutions. Followers are challenged to bring input into decision making and this input subsequently is actually used (Bass, 1985; Bass & Avolio, 1994). Third, inspirational motivation refers to the convection of an appealing vision

about the future by which transformational leaders align their followers and give them a sense of purpose. Transformational leaders clearly describe the route to be taken to achieve their goals and ideals and show their optimism about the chances of success. Followers get the conviction that goals can be achieved and work extra hard to make sure this actually happens (Bass, 1985; Bass & Avolio, 1994). Fourth, transformational leaders use individualized consideration to show their genuine care and concern for the well-being of their followers. They communicate often and openly, help their followers and delegate opportunities: transformational leaders address the needs of their followers. (Bass, 1985; Bass & Avolio, 1994). As becomes apparent, the four types of behavior typical for transformational leaders have a positive impact on followers. Further elaboration on this follows below.

2.2. Transformational leadership and its route to positive work outcomes

Transformational leaders increase their followers' performance as described in their job descriptions (job performance) but also drive their followers to contribute in unrequired ways (contextual performance or organizational citizenship behavior) – both irrespective of location or industry (Lowe, Kroeck & Sivasubramaniam, 1996; Wang, Oh, Courtright & Colbert, 2011). They do so by motivating followers to work harder (Bartram & Casimir, 2007; Judge & Piccolo, 2004; Yang & Mossholder, 2010) and also by connecting their followers' self-interest to the interest of the group (Bass, 1985). Following from this, transformational leaders have been found to increase the affective organizational commitment of their followers because followers are proud to work for their employer and want to continue doing so (Pillai et al., 2011; Yang & Mossholder; Zhu et al., 2013).

Much of the work cited in the previous paragraph found that transformational leaders achieve positive follower outcomes by increasing followers' trust in the leader (Bartram & Casimir, 2007; Yang & Mossholder, 2010; Zhu et al., 2013). Trust is referred to as the willingness of a party to be vulnerable to the actions of another party, irrespective of the ability to monitor or control that other party (Mayer, Davis & Schoorman, 1995). Followers trust leaders when they perceive ability, integrity and benevolence in them (Dirks & Ferrin, 2002; Knoll & Gill, 2011). These characteristics demonstrate leaders not to intentionally or unintentionally disadvantage followers while they are vulnerable. Since transformational leaders show that they act in the best interest of their followers (benevolence), that they have the skillset and competences to perform (ability) and that their actions are based on ethical principles (integrity) they show followers they can be vulnerable towards them and thereby engender trust (Bass, 1985; Knoll & Gill, 2011). As described earlier, trusting followers perform better due to a combination of increased follower psychological availability, follower psychological safety and the urge to reciprocate efforts from their leader.

Cognitive and affective trust. Although trust is traditionally treated uni-dimensionally (Jung & Avolio, 2000; Bartram & Casimir, 2007; Braun, Peus, Weisweiler & Frey, 2013), there is also a strong base for trust as a two-dimensional concept comprising of cognitive and affective trust (McAllister, 1995; Dirks & Ferrin, 2002). Traditional measures are mainly focused on the cognitive aspect of trust and fail to address followers' urge to reciprocate efforts from their leader. McAllister's (1995) two-dimensional model of trust including affective trust however does take this into account and therefore captures a more complete concept of trust. This advantage with regards to validity is especially important when looking at the effects

of physical distance. As shortly described earlier and further elaborated on later, physical distance will be argued to have its impact through only the affective part of trust. The use of McAllister's (1995) two-dimensional mode is therefore essential in explaining the negative influence of physical distance. On top of these validity advantages the model provides methodological advantages. Following the rationale of Zhu and colleagues (2013), McAllister's model of trust has been validated in many different industrial and geographical situations (Schaubroeck et al., 2011; Wang, Tomlinson & Noe, 2010; Yang & Mossholder, 2010) and has been analyzed in meta-analytical work (Dirks & Ferrin, 2002). Taking these advantages into account, this study has adopted the two-dimensional model of trust. The two types of trust, cognitive and affective, are argued to be drawn from different antecedents and will be argued to have different effects.

Cognitive trust, as described earlier, reflects on the confidence in a leader's capabilities. It focuses on performance-relevant, personal characteristics of the leader such as ability, reliability and integrity. Based on a leader's track record, followers assess their leader's aptness to guide their performance and their leader's willingness to defend their interests and adjust their behavior accordingly (Dirks & Ferrin, 2002; McAllister, 1995). Affective trust on the other hand is based on the emotional bonds between a trustor and a trustee. It builds on social exchange (Blau, 1964), which is essentially an emotional quid pro quo: people generally feel the need to reciprocate those who benefit them. How people reciprocate is not limited to the form of the other's effort, which means that it could for instance drive followers to work harder if a leader treats them respectfully. Thus, affective trust builds over time as a leader and a follower engage in social exchange and show reciprocated, genuine care and concern.

2.3. From transformational leadership to trust

Transformational leadership has been found to build both cognitive and affective follower trust in leader (Schaubroeck et al., 2011; Zhu et al., 2013). Below will be described how transformational leaders use their idealized influence, intellectual stimulation, inspirational motivation and individualized consideration to achieve this trust.

Followers' cognitive trust increases as their assessment of their leader's personal capabilities improves. When followers perceive that their leader is capable of effectively fulfilling his/her leadership role, that they can depend on their leader and that their leader acts with integrity, they will increasingly trust their leader cognitively. All four behaviors of transformational leaders should contribute to this (Schaubroeck et al., 2011; Zhu et al., 2013). First, transformational leaders show their integrity and dependability with the ethical, self-sacrificial and practice-what-you-preach behavior that typifies idealized influence (Bass, 1985; Bass & Avolio, 1994). Second, intellectual stimulation should increase follower perceptions about competence. When leaders help followers to question their assumptions and challenge them to deliver input for the decision making process, they show their capabilities and the fact that they can be depended on to empower their followers (Wasti, Tan & Erdil, 2010). Third, transformational leaders build cognitive trust via inspirational motivation. Showing others which route is best for the team should show a leader's capability, and actually achieving the goals as set additionally shows a leader's dependability and integrity. Fourth and finally, the individual consideration of transformational leaders shows followers that their leader acts with their individual interests in mind, sometimes even at their leader's own expense. This should build the perception of dependability and capability (Bass & Avolio, 1994; Wasti, Tan & Erdil, 2010).

Besides cognitive trust, the acts of transformational leaders are argued to build affective trust (Zhu et al., 2013). As stated earlier, follower affective trust grows over time as a leader and a follower engage in social exchange and show reciprocated, genuine care and concern, developing a relational bond. Transformational leaders show this genuine care and concern with their idealized influence, making sure not to act self-centered and even sacrificing themselves for their team members (Wasti, Tan & Erdil, 2010). Second, affective trust should be strengthened by intellectual stimulation. Transformational leaders take the time to help their followers in challenging their own assumptions and to help them develop. Besides, intellectually stimulating leaders enter into the process of social exchange by asking followers for their input in the decision making processes (Bass & Avolio, 1994; Wasti, Tan & Erdil, 2010). Third, with inspirational motivation transformational leaders implement a shared and clear vision. This makes sure that followers know what is expected from them and which actions will be rewarded. The resulting feelings of justice make them more eager to enter the process of social exchange (Farrell et al., 2005; Pillai et al., 2011), thereby increasing affective trust. Finally and perhaps most obviously, transformational leaders improve their relational bond with their followers through individual consideration. Individually caring leaders help followers with their individual problems, delegate opportunities to them and care for their welfare. Followers are urged to reciprocate these efforts via social exchange, enhancing affective trust.

To sum up, the current study will retest earlier findings (Schaubroeck et al., 2011; Zhu et al., 2013) with the following hypotheses:

H1a. Transformational leadership positively affects affective trust in leader

H1b. Transformational leadership positively affects cognitive trust in leader

It becomes clear that the same transformational behaviors drive different kinds of trust in different ways. Where cognitive trust is built on followers' assessments of the capabilities of their transformational leader, affective trust is developed through the leader's interaction with followers, thereby building a relationship. It should therefore be expected that transformational leaders build their followers' affective trust in them through their frequency of interaction with them. Indeed, leaders have been found to use their interaction frequency to increase general trust (Li, Zheng Zhou, Lam & Tse, 2006), but this still awaits empirical confirmation for specifically affective trust. This study therefore poses:

H1c. Leader-follower interaction frequency mediates the positive relationship between transformational leadership and affective trust in leader.

A different matter is cognitive trust. Followers have been found to attribute competence to a distant leader, even when they did not have enough information to accurately assess this performance (Howell & Shamir, 1998; Yukl, 1998). Followers based their attribution on organizational success or a leader's image building efforts; apparently transformational leaders do not need much interaction with their followers to build their cognitive trust in them.

One could imagine not only interaction frequency to play a role but used medium, such as face-to-face, phone, e-mail or sms/whatsapp, as well. The same goes for interaction content, with either task or more personal and socially oriented communication. Although intuitively face-to-face communication is often seen as the richest and most effective medium to communicate, communication scientists have found situations in which other media are more effective than face-to-face. Impersonal communication is in certain cases argued to be more effective than personal communication, for instance with regard to decision making processes

(Walther, 1996). Additionally, there is support for computer mediated communication being as emotional as face-to-face communication (Derks, Fischer & Bos, 2008). Finally asynchrony of communication has been found to sometimes be more effective than face-to-face communication. When communication is focused on conveyance of information, people sometimes communicate more beneficially with each other when they do not do so at the same time (for example via email or sms/whatsapp) (Dennis, Fuller & Valacich, 2008). Although these differences in influence are very interesting and could be relevant to this study, the combined proposed model will already be quite extensive without use of medium or communication content. Therefore no hypotheses will be devised regarding these possibilities. However, used medium and interaction content will be controlled for while testing hypotheses H1a through H1c.

2.4. Mediating role of cognitive and affective trust

So far this paper argued that transformational leadership will drive positive follower work outcomes through an increased follower trust in leader. One would expect the two conceptually different types of trust, which also draw on different antecedents, to have different (mediating) effects on follower work outcomes. Scholarly agreement about this expectation has yet to be established and this study therefore investigates these differences and their influence on follower work outcomes. Specifically, this paper investigates the differences in effect that cognitive trust and affective trust have on follower job performance, organizational citizenship behavior and affective organizational commitment. Together these three work outcomes provide a comprehensive overview of the durable performance of followers at their employing organization, as will be explained below.

Followers' performance as being beneficial for organizations is often divided into in-role and extra-role performance (Hui, Law & Chen, 1999; Yang & Mossholder, 2010). In-role performance, or job performance, refers to the degree to which an individual can accomplish his/her work, both qualitatively and quantitatively (Zhu et al., 2013). Extra-role performance is often regarded interchangeable with organizational citizenship behavior (OCB). This behavior comprises voluntarily helping or assisting in the workplace without either an explicit or implicit promise for a reward (Organ, 1988; Wang et al., 2011). With job performance and OCB this study takes both required and unrequired performance into account.

These two types of performance are mostly profited from by organizations if those organizations are able to retain well performing employees. To capture organizations' ability to do so, affective organizational commitment (AOC) is therefore the third and final follower work outcome used in this study. AOC refers to the degree of involvement and emotional attachment to an organization, with resulting feelings of loss associated with leaving (Meyer, Stanley, Herscovitch & Topolnytsky, 2002). Employees with high levels of AOC intrinsically want to remain with their employer which in practice also actually results in lower turnover amongst these employees (Meyer et al., 2002).

While affective trust receives general support to drive positive follower work outcomes (Schaubroeck et al., 2011; Zhu et al., 2013), the effects of cognitive trust are up for debate. On a team level cognitive trust has been found to drive job performance (Schaubroeck et al., 2011), but on an individual level cognitive trust has in certain situations been found to increase free-riding tendencies (Ng & Chua, 2006) and to impede follower job performance (Zhu et al., 2013).

Affective trust. Affective trusting followers feel safe because of the conviction that their transformational leader takes care of them (McAllister, 1995; Dirks & Ferrin, 2002). This allows them to focus on their jobs instead of side-issues like politics or 'covering their backs' and to perform better at their tasks. Besides this, they feel the need to reciprocate the energy their leader spends on them, which will make them more willing to exhibit obligated and also unobligated (OCB) positive behavior (Burke et al., 2007). Thus, followers feel their transformational leader is genuine and that somebody invests in them, which enhances their work experience and drives the willingness to stay with the current organization (Schaubroeck et al., 2011; Zhu et al., 2013). Replicating earlier research, it is hypothesized that:

H2a. Affective trust positively affects job performance, OCB and affective organizational commitment.

Furthermore, combining the previously described rationale with H1c (hypothesizing a mediating effect of leader-follower interaction frequency on the positive relationship of transformational leadership with affective trust), leads to:

H2b. Leader-follower interaction frequency and affective trust positively mediate the link between transformational leadership and job performance, OCB and affective organizational commitment.

Cognitive trust. Cognitive trusting followers feel their transformational leader has integrity and is capable of leading them. Scholars have argued this to lead to increased feelings of (team) potency, giving followers the confidence that they and their team are capable enough to be successful (Mayer & Gavin, 2005; Schaubroeck et al., 2011). As a result, performance has been found to increase at a team level (Schaubroeck, 2011). However, on an individual level cognitive trusting individuals have been found to overly depend on their trustee with resulting free-riding tendencies

(Ng & Chua, 2006) and lower individual performances (Yang & Mossholder, 2010; Zhu et al., 2013).

Looking closer at the free-riding tendencies, it is reported that these develop following a curvilinear shape, more specifically an inverse u-shape. Cognitive trust drives follower cooperation (followers work harder) until it reaches a level that followers feel safe their lack of input won't affect the final result. Followers perceive their leader so capable that a lack of effort or initiative from their side 'automatically' will be compensated by their leader (Ng & Chua, 2006). Although this result is reported on an individual level, it still is striking that Schaubroeck and colleagues (2011) have found cognitive trust to drive performance on a team level. Possible explanations for this are 1) these tendencies do not influence team performance because of compensating efforts from fellow team members with lower amounts of cognitive trust or 2) these free-riding tendencies are unnoticed by the leader when assessing a team instead of an individual. Considering these explanations for the deviation of work focusing on team level performance and the fact that this study focuses on performance on an individual level, the following hypotheses are posed:

H3a. Cognitive trust has an inverted u-shape relationship with follower job performance.

The expectation of cognitive trust to have a curvilinear effect on follower job performance implicates a curvilinear effect of transformational leadership on job performance as well, via the increase in cognitive trust transformational leaders foster. This does not mean that the direct effect of transformational leadership on job performance is expected to be curvilinear, since transformational leaders are also expected to drive job performance via affective trust. Therefore, this study only hypothesizes a curvilinear effect of transformational leadership via cognitive trust:

H3b. The inverted u-shape effect of cognitive trust mediates the relationship between transformational leadership and follower job performance.

Earlier work has hypothesized that cognitive trust will increase OCBs and affective organizational commitment (Yang & Mossholder, 2010; Zhu et al., 2013). It was argued that freed attentional resources should increase opportunities for organizational citizenship behavior and the resulting safe environment should then enhance follower work experience and the willingness to stay with the current organization. However, if cognitive trust is prone to the opportunism that it can drive followers to free-ride as hypothesized in H3b, it seems unlikely this cognitive trust would drive followers to put in extra effort in the form of OCBs. This rationale seems to be confirmed by the fact that the effect of cognitive trust on the relationship between transformational leadership and OCBs has indeed not been found (Yang & Mossholder, 2010; Zhu et al., 2013). Because of this, no effect of cognitive trust on the relationship between transformational leadership and OCB is expected.

It is more difficult to anticipate the effects of cognitive trust on the relationship between transformational leadership and affective organizational commitment. On the one hand the earlier described safe environment which supposedly results from cognitive trust is anticipated to increase follower willingness to stay with the current organization. While there is evidence to support this claim (Dirks & Ferrin, 2002; Hon & Lu, 2010; Nyhan, 1999), there is also contradicting evidence. A conducted review of 58 studies looking for antecedents of affective organizational commitment failed to identify cognitive trust in leader as an antecedent (Morrow, 2011). Similarly, the same work that failed to link cognitive trust to OCBs failed to identify cognitive trust as a mediator for the relationship between transformational leadership and affective organizational commitment (Yang & Mossholder, 2010; Zhu et al., 2013). With the

practical importance of affective organizational commitment due to a link with lower turnover intentions and higher performance of followers in mind (Cooper-Hakim & Viswesvaran, 2005; Riketta, 2008), this study therefore poses the research question:

RQ. How does cognitive trust affect the relationship between transformational leadership and affective organizational commitment?

2.5. Physical distance

As introduced, physically distant transformational leaders have been found less effective in increasing their followers' work outcomes than physically nearby transformational leaders (Howell et al., 2005). This decrease in effectiveness will be ascribed to a lowered affective trust in distant leaders, following from a decrease in leader-follower interaction.

Physical distance can simply be defined as how far something is removed from something else. This conceptualization is as simple as its operationalization is comprehensive. First, the context in which physical distance is examined has to be taken into account. Physical distance is for instance used in molecular biology, measuring the physical distance between nucleotides in amount of bases (Genovese et al., 2010), or in social psychiatry as an amount of chairs between a person and an anticipated psychiatric patient (Norman et al., 2010). Physical distance even has been measures in seconds, between two moving cars (Risto & Martens, 2013).

The context for this study is of course work and organizational psychology, examining the average physical distance between leaders and followers while they are at work. 'Average' is important, since this study does not regard real time distance between a leader and a follower during work. Even within the context of work and organizational psychology, different kinds of operationalizations are used. Scholars

have, amongst others, operationalized physical distance objectively as an amount of kilometers (Latané et al., 1995), working in the same country or not (Li et al., 2006) and working in the same city or not (Howell et al., 2005). Physical distance has also been operationalized subjectively by asking followers how close their workspace was to their leader's (very distant - very close) (Howell et al., 2005). This latter, subjective operationalization was found not to work whilst the objective operationalization did provide results. However, the objective measure, using a split between large and small distance, seems rather arbitrary and strongly influenced by city or village size. Many villages are located 5 minutes travelling from other villages, whilst a person living in Amsterdam could easily travel 45 minutes without leaving the city's boundaries. The splits furthermore have a low generalizability. Same city/different city for example, is a split used for a Canadian population which lived in a geographically very different country from the Netherlands, including very different urban planning.

A third option is chosen for this study. Next to objective versus subjective measures of physical distance, scholars have also had success operationalizing physical distance by perceived practical implications, such as the degree to which the leader is close enough to visit easily (Dayan & Di Benedetto; Hoegl & Proserpio, 2004). Since this circumvents generalizability issues, this option is adopted.

Physical distance, trust and leader-follower interaction frequency. Out of the two types of trust resulting from transformational leadership, affective trust seems to be influenced most strongly by physical distance. As stated earlier, affective trust is argued to build on leader-follower interaction frequency but people have less memorable interactions with others as physical distance increases (Latané, Liu, Nowak, Bonevento & Zheng, 1995). In addition, unplanned and informal leader-

follower communications are less frequent in remote settings (Kelley and Kelloway, 2012). As described earlier, less communication in physically distant leadership has already been found to lead to lower amounts of general trust in leader (Li et al., 2006). Furthermore, distance suggests more task rather than social exchange oriented behavior (Bailey & Kurland, 2002) because distant leaders focus more on the professional performance of their followers and less on the social aspects of work. All in all, it seems likely that physical distance negatively affects affective trust, through a decreased leader-follower interaction frequency. Cognitive trust is however not argued to be impacted by leader-follower interaction frequency since followers have been found to ascribe ability to leaders without interacting (much) with them (Howell & Shamir, 1998). This leads to the following hypotheses:

H4a. Physical distance negatively affects leader-follower interaction frequency

H4b. Physical distance negatively affects affective trust, through negatively affecting leader-follower interaction frequency

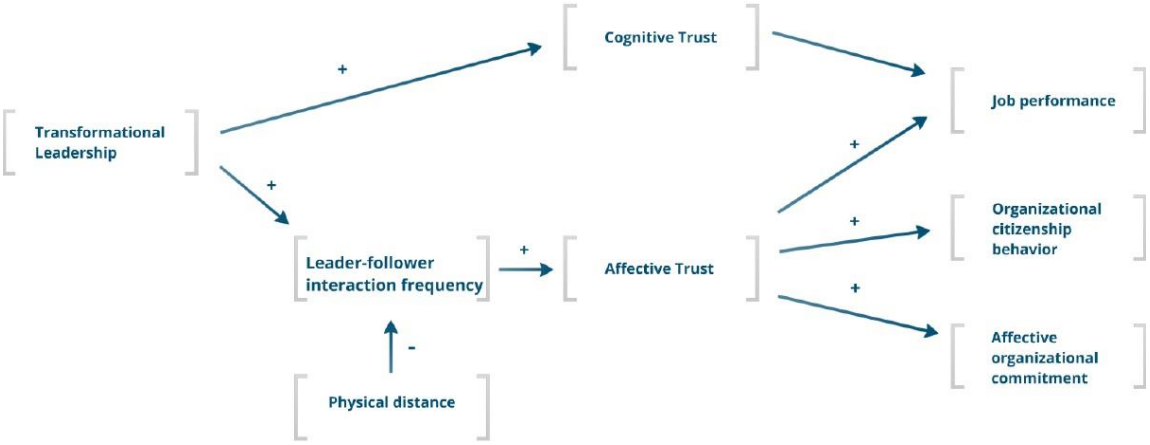
Combining previous hypotheses, the psychological mechanism behind the attenuating effects of physical distance on the positive relationship between transformational leadership and positive follower work outcomes is argued to be a lowered affective trust in leader due to a lowered leader-follower interaction frequency. Affective trust is a way for transformational leaders to exert their influence; leaders make followers feel they are genuine leaders and build a reciprocating emotional relationship. This makes followers feel safe and creates the need to reciprocate efforts from their leader, driving their job performance, organizational citizenship behavior and affective organizational commitment. By handicapping transformational leaders' means of driving affective trust, physical distance is argued

to negatively impact positive follower work outcomes. This study therefore hypothesizes that:

H4c. Physical distance negatively affects the follower work outcomes job performance, organizational citizenship behavior and affective organizational commitment, through negatively affecting leader-follower interaction frequency which in turn negatively affects affective trust.

The theoretical model comprising of H1a - H4c is depicted in Figure 1.

Figure 1. Theoretical model of the proposed relationships between transformational leadership and follower work outcomes.



Added value. By testing the described hypotheses this study addresses both practical and academic needs. The current increase in distant leading provides organizations challenges with regard to their leadership effectiveness; modern transformational leaders can use this study's results to more effectively lead their followers from a distance. From an academic point of view this study is the first to link the negative influence of physical distance on transformational leadership effectiveness to trust in leader. Additionally it adds to the relatively small amount of work looking at the different mediating effects of cognitive trust and affective trust in the relationship between transformational leadership and positive follower work outcomes.

3. Method

3.1. Participants

The current study aimed to investigate the negative influence of physical distance on transformational leadership effectiveness. The population of this study therefor comprises the managers and employees of two types of organizations. The first group of participants in this study consisted of store managers and their regional managers from a chain of bed shops. Second, the HR Director from a big facility services holding invited affiliated organizations to participate in this study. Personal invitations have been sent out to each respondent in this study. For the sake of external validity, both organizations represent a different field of work. The first organization focuses on sales while the second organization is engaged in service provision. The final data resulted from a survey conducted among 17 managers and 82 employees. Of the managers, 65% were men (*N*=11) and 35% were women (*N*=6). Their mean age was 41 years old (*SD*=7.05) and most managers had completed HBO (50%). Of the employees, 48% were men (*N*=39) and 52% were women (*N*=43). The mean age of employees was 39 (*SD*=9.43) and most employees had completed MBO (*N*=23) or HBO (*N*=21).

3.2. Operationalization

Participating followers have been asked to rate their leader's transformational leadership, the physical distance between them and their leader, their cognitive trust in their leader, their affective trust in their leader and their own affective organizational commitment, using an online questionnaire facilitated by Qualtrics. Using a different online questionnaire the leaders of participating followers rated their follower's job performance and organizational citizenship behavior. Followers were assigned a

unique ID with which their answers could anonymously be matched with the answers of their leaders.

3.1. Materials

As said before, the questionnaire used in this study for followers to rate their leaders concentrated on transformational leadership, physical distance, follower affective organizational commitment and both types of trust. Leaders in turn assessed their follower's job performance and organizational citizenship behaviour. All items except for leader-follower interaction frequency have been measured using a 5-point Likert scale, ranging from 1 = "Strongly disagree" to 5 = "Strongly agree".

Transformational Leadership. Transformational leadership comprises four aspects: idealized influence, intellectual stimulation, inspirational motivation and individualized consideration (Bass, 1985). These aspects have been measured using the Multifactor Leadership Questionnaire (MLQ form 5X) (Bass & Avolio, 1995) consisting of 20 items. A factor analysis proved these items to indeed form four components. Idealized influence had an eigen value of 4.78 (R^2=59.7), intellectual stimulation an eigen value of 3.04 (R^2=75.9), inspirational motivation an eigen value of 2.67 (R^2=66.6), and individualized consideration an eigen value of 2.78 (R^2=69.5). Together, the components formed a reliable scale (α=.96). An example of an item is "my leader takes time to find out what I need".

Affective trust. Affective trust has been measured using McAllister's (1995) affect-based trust scales. Five items were used. A factor analysis shows that except for the item 'I would have to say that we have both made considerable emotional investments in our working relationship', these items together proved to form one construct with an eigen value of 3.26 (R^2=54.4). It was therefore decided to leave this

item out. An example of the remaining items is "We have a sharing relationship. We can both freely share our ideas, feelings, and hopes" (α=.86).

Cognitive trust. Cognitive trust has been measured using McAllister's (1995) cognition-based trust scales. Six items were used that measured only one component with an eigen value of 2.98 (R^2=59.6). An example of an item is "This person approaches his/her job with professionalism and dedication" (α=.79).

Job performance. When possible, objective measures of job performance have been used. Examples are number of sales in the past semester or amount of hours worked by team, which were rated by leaders on a 5-point Likert scale ranging from 1 = "Far below the norm" to 5 = "Far above the norm". The amount of objective measures per team varied from zero to five. Regardless of the objective measures a three item scale measuring general performance has been used, as earlier used by Yang and Mossholder (2010). An example is "Fulfills responsibilities specified in job description" (α=.80). This scale proved to form one component with an eigen value of 2.15 (R^2=71.7).

Organizational citizenship behavior. Three scales of MacKenzie, Podsakoff and Fetter (1991) have been used to measure organizational citizenship behavior, comprising of *helping* (three items, ev = 2.18, R^2=72.5, α=.80), *civic virtue* (three items, ev = 1.78, R^2=59.6, α=.76), and *compliance* (three items, ev = 1.77, R^2=59.0, α=.65). Examples are "Helps out other group members if someone falls behind in his/her work.", "Makes suggestions about how he or she can improve own effectiveness." and "Always focusses on what is wrong with the situation, rather than the positive side (reverse scored)". Together, the scales provides a reliable measure (α=.81)

Affective organizational commitment. Six items from Meyer, Allen and Smith (1993) have been used to measure affective organization commitment. An example is "I would be very happy to spend the rest of my career with this organization" (ev = 2.78, R^2= 46.3, α=.76).

Physical distance. Three items from Hoegl and Proserpio (2004) were used, from which an example is "My leader worked directly in the vicinity, so that we could visit each other without much effort" (α=.74). A factor analysis proved these items to comprise one component with an eigen value of 2.00 (R^2=66.3).

Leader-follower interaction frequency. Average leader-follower interaction frequency has been measured using a sliding mechanism ranging from 1="rarely" to 100="often". Followers could indicate the amount of contact they had with their leader within the time span of an average week.

Controls. Medium, interaction content, length of leader-follower relationship and follower tenure have been measured as potential control variables. Medium was controlled for by asking followers how often they communicated with their leader per medium. Answer options were 'less than once a month', 'once or twice a month', 'once or twice a week', '3 or 4 times a week', 'once a day', 'more than once a day'. Categories were face-to-face, phone call, sms/whatsapp and e-mail.

Interaction content was measured using two scales of Burgoon and Hale (1987), both scored by followers on a 5-point Likert scale ranging from 1 = "Strongly disagree" to 5 = "Strongly agree. Unfortunately both scales proved unreliable. *Task versus social orientation* was measured using four items, from which an example is "In our contact my leader is more interested in a social conversation than the task at hand" (α=.28). *Formal/informal orientation* was measured using three items, for

instance "He/she was willing to self-disclose personal thoughts to me" (α=.11). Due to this statistical unreliability, interaction content was left out of further analyses.

3.2. Analysis

Beside the research topic this study gets its edge from the use of the modern analytical technique structural equation modeling (SEM). Both substantively and statistically, conclusions based on SEM gain weight versus those based on regression analysis. Although an experimental design remains the strongest design to test causal relations, correlational testing an entire model with SEM instead of testing individual associations does provide insight into the direction of associations between constructs (James & Brett, 1984; Kline, 2011). Next to the fact that this allows for stronger conclusions there is another substantive advantage: testing an entire model conveys a higher-level perspective to analyses (Kline, 2011). Testing individual associations may bring significant results but does not give insight in the significance of the combination of these individual associations which together represent a hypothesized model. SEM makes it possible for researchers to test all hypothesized associations simultaneously (Zhang & Kim, 2013).

Next to these substantive advantages, the use of SEM provides statistical advantages as well. SEM corrects for measurement errors in latent variables, by controlling for errors in used scales, random measurement errors and for unmeasured variance of other factors that can be of influence (James & Brett, 1984; Kline, 2011). Also SEM gives better estimates of effect sizes of individual variables (Kline, 2011).

Due to the described advantages, structural equation modeling will be used to estimate the combined path model embodying hypotheses H1a - H4c, as depicted earlier in Figure 1. As a first step however, correlations will be calculated between the

independent variables and the dependent variables in order to see which variables should be adopted in the final model (see table 1). After this, maximum likelihood estimation in EQS will give a first indication of the accuracy of the estimated model.

Fitness will be reported using the chi-square statistic of the model, which should be non-significant as this indicates that the model is not significantly different from the population. Additionally to this first indication, two approximate-fix indexes shall be reported: the root mean square error of approximation (RMSEA) with its confidence interval and the comparative fit index (CFI) to indicate approximate model fit. RMSEA should be below .05 as the higher the score, the worse the hypothesized model (Kline, 2011). CFI needs to be above .95 as higher values obtained with this measure, contrarily point to better fit of the proposed model (Ki & Hon, 2007). Next to the fit of the entire model the direct and indirect relations will be reported. Output of SEM will provide the significance for each of the hypothesized relationships, which per relationship of course should be $p \leq .05$ to indicate a significant relationship.

4. Results

4.1. Initial analyses

Controlling for confounding, no associations of control variables with dependent variables were found except for a weak negative correlation between leader age and follower job performance (r= -.286, p=.014) and a reasonable correlation between leader age and follower OCB (r= -.315, p=.007).

Thereafter, as a first step of specifying the estimated model, correlations of transformational leadership with the dependent variables (job performance, OCB, AOC) were calculated using SPSS. For a full overview of correlations between all variables, see Table 1. Effects from transformational leadership on these variables have been consistently found in so many different cultures and situations (Bass &

Table 1.
Correlation matrix with means and standard deviations

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Transf. leadership	3.65	.70	1.00	-	-	-	-	-	-	-
2. Physical distance	2.59	.88	-.04	1.00	-	-	-	-	-	-
3. Interaction frequency	61.59	25.18	.35**	-.43**	1.00	-	-	-	-	-
4. Cognitive trust	3.99	.67	.76**	-.16	.27*	1.00	-	-	-	-
5. Affective trust	3.87	.62	.62**	-.27*	.42**	.71**	1.00	-	-	-
6. AOC	3.85	.61	.38**	-.15	.24*	.32**	.34**	1.00	-	-
7. OCB	3.86	.46	.17	.11	-.05	.18	.13	-.04	1.00	-
8. Job Performance	4.21	.47	.02	.02	.11	.01	.13	.05	6.7**	1.00

Note. Correlations are based on SPSS correlations. $N = 82$, *$p<.01$, **$p<.001$.

Riggio, 2006; Judge & Piccolo, 2004; Walumbwa, Lawler & Avolio, 2007) that a lack of found effect should raise questions. Transformational leadership was found to only correlate with AOC (r=.375, p=.001). There appeared no significant correlations with both OCB and job performance. When subsequently analyzing the separate factors of OCB, no significant correlations were found with transformational leadership either. As including OCB and job performance in the analyses would therefore not yield any results, they were left out of the proposed model to be tested. These non-significant correlations and the subsequent decision of leaving both OCB and job performance out of the proposed model, will be more extensively elaborated upon in the discussion section.

4.2. Model estimation

The model as depicted in Figure 1, but without job performance and OCB, was estimated to define the fit between model and data. No special problems were encountered during optimization of the model but Mardia's kurtosis was returned as 5.59; additionally the excess kurtosis was confirmed by the Bonett-Woodward-Randall test. Models comprising of non-normal data are optimally tested using a combination of robust standard errors and the Satorra-Bentler statistic, which was then done.

The Chi-square of the model was found to be too high (χ^2 = 58.024 (Df = 10), p<.001, CFI =.693, RMSEA = .255 (.194-.314), shown by the significant p-value. Indeed, the standardized residual between cognitive trust and affective trust was relatively high (r=.607), indicating a relation between the two. Further analysis confirmed this; the Lagrange Multiplier Test showed the model to improve significantly when a path from cognitive trust to affective trust was added. Beside

statistical support and more importantly, the relationship between cognitive trust and affective trust has substantial theoretical ground. Earlier research has argued people to be only willing to invest in others via social exchange (affective trust), when they have seen those others to meet a baseline level of dependability and integrity (cognitive trust) (McAllister, 1995; Schaubroeck et al., 2011). Since this argumentation has also received strong empirical support, the path from cognitive trust to affective trust was added in a new model to be tested.

This new model fitted the data very well (χ^2 = 11.335 (*Df* = 9), *p*=.253, CFI =.986, RMSEA = .057 (.000-.144), notable by the high p-value of the Chi-square. Considering the values of both the RMSEA and the CFI, both fit statistics indicate a right amount of fit (Ki & Hon, 2007; Kline, 2011). Figure 2 depicts the final model with all the direct effects and their significance levels. Table 2 shows the correlations between all the variables as indicated by the structural equation model. This correlation matrix derived from SEM is given in addition to the correlation matrix derived from SPSS as depicted above. SEM is able to estimate the proportion of variance in the measured variable that is explained by the variance in the correlating variable while controlling for all other variables in the model, thereby estimating associations more reliable (Kline, 2011). Table 3 depicts the covariances, necessary to replicate the model.

4.3. Hypotheses testing

Hypotheses 1a and 1b were supported, predicting a positive effect of transformational leadership on affective trust in leader (β=.573, *p*<.001) and on cognitive trust in leader (β=.761, *p*<.001). Hypothesis 1c was also confirmed, stating

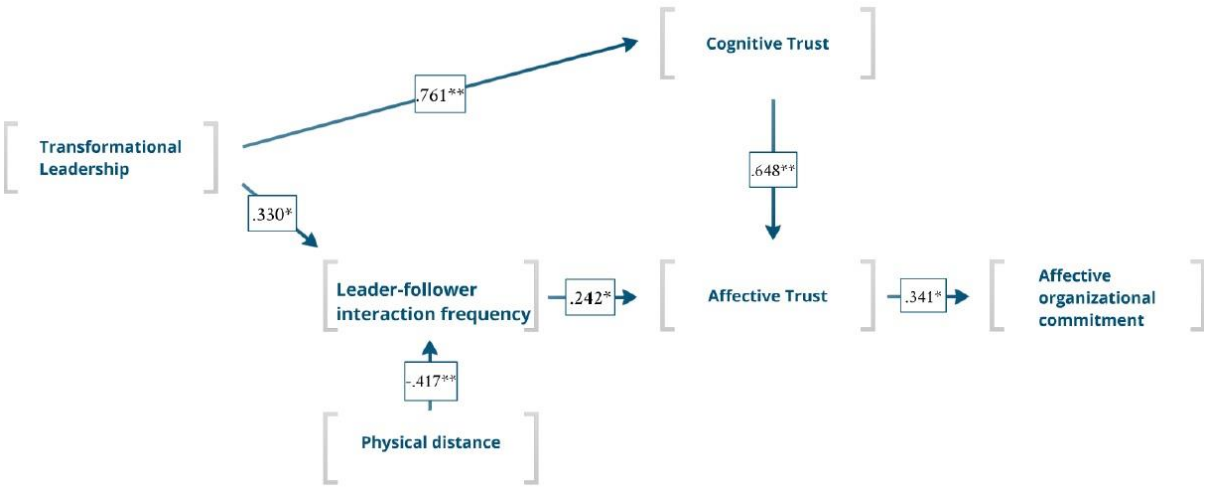


Figure 2. Final path model of the influence of affective trust on positive follower work outcome. *p<.01, **p<.001.

leader-follower interaction frequency to mediate the positive relationship between transformational leadership and affective trust in leader. The mediated path was confirmed to be significant (β = .079, p = .043). To confirm, a SPSS INDIRECT Bootstrapping Macro as developed by Preacher & Hayes (2008) indeed shows a significant, mediated path from transformational leadership to affective trust via leader-follower interaction, $t(2,79)$= 7.04, p<.001, 95% CI [.013, .163]. As with other bootstrapping macros to be described, 5000 bootstrap resamples were used. According to the Macro however, a direct path between transformational leadership and affective trust in leader remains (β = .477, p <.001), pointing to a partly mediated relationship. When adding this path to the structural equation model however, Chi-square does not significantly improve and the main effect of transformational leadership on affective trust in leader appears not significant (β=.108, p=.493). The fact that the path between transformational leadership and affective trust in leader appeared not completely mediated by leader-follower interaction frequency could be explained by (and serve as additional support for) the added path between cognitive trust and affective trust, as suggested by the Lagrange Multiplier Test and found

before by Schaubroeck et al. (2011) and MacAllister (1995). The direct effect of cognitive trust on affective trust was found to be strong (β=.648, p<0.001) and indeed, when using a multiple mediator Bootstrapping Macro (Preacher & Hayes, 2008), the path between transformational leadership appears fully mediated, t(3,78)= 7.04, p<.001, 95% CI [.292, .620], via both leader-follower interaction (β=.079, p=.029) and cognitive trust (β=.382, p<.001). The direct effect between transformational leadership and affective trust in leader now becomes insignificant (t= 0.91, p= .365).

As described earlier, the positive follower work outcomes job performance and OCB were left out of further SEM analyses. Following hypotheses were therefore tested as though they only contained the follower work outcome AOC. However, the linear regression results regarding the effects of transformational leadership on OCB and job performance will be reported in order to give a full overview of results. Hypothesis 2a was confirmed regarding the effect of affective trust on AOC; affective trust has been found to positively affect affective organizational commitment (β=.341, p=.004). However, no relationship was found between affective trust and OCB (β=.134), t (1,72) = 1.14, p = .258, 95% CI [-.074, .273], R^2=.02, or between affective trust and job performance (β=.125), t (1,72) = 1.06, p = .292, 95% CI [-.082, .270], R^2=.02. Hypothesis 2b, hypothesizing the effect of leader-follower interaction frequency on affective trust to mediate the positive relationship between transformational leadership and AOC, was also found to fit the data when looking at the structural equation model. Indeed, a further analysis of this subsequent indirect effect using a Bootstrapping Macro developed by Preacher and Hayes (2010) to estimate paths between variables through subsequent mediators (MEDTHREE) shows a mediated relationship, t(4,77)= 3.62, p< .001, 95% CI [.052, .298], between transformational leadership and AOC through first leader-follower interaction

Table 2.
Model correlation matrix with means and standard deviations based on SEM

Variable	Mean	SD	1	2	3	4	5	6
1. Transf. leadership	3.65	.70		-	-	-	-	-
2. Physical distance	2.59	.88	.00		-	-	-	-
3. Interaction frequency	61.59	25.18	.33**	-.42**		-	-	-
4. Cognitive trust	3.99	.67	.76**	.00	.25		-	-
5. Affective trust	3.87	.62	.57**	-.10**	.41**	.71**		-
6. AOC	3.85	.61	.20**	-.03	.14*	.24**	.34*	

Note. Correlations are based on SEM. $N = 82$, *p<.01, **p<.001.

Table 3.
Covariaton matrix

Variable	1	2	3	4	5	6
1. Transf. leadership	.50	-	-	-	-	-
2. Physical distance	-.03	.77	-	-	-	-
3. Interaction frequency	6.13**	-9.46**	634.05	-	-	-
4. Cognitive trust	.36**	-.09	4.46*	.44	-	-
5. Affective trust	.27**	-.15**	6.50**	.30**	.39	-
6. AOC	.16**	-.08	3.72*	.13**	.13*	.38

Note. Covariations are based on SEM. $N = 82$, *p<.01, **p<.001.

frequency and second affective trust (β=.108, p< .001). This indeed resulted in the direct relationship between transformational leadership AOC to become insignificant, t (4,77) = 1.90, p = .062, indicating full mediation. As expected based on the results concerning hypothesis 2a, no mediational effects were found concerning OCB (β=.115), t(4,77)= 1.00, p=.322, 95% CI [-.017, .036], and job performance (β=-.021), t(4,77)= -.18, p=.862, 95% CI [-.013, .033].

Hypotheses 3a and 3b were not confirmed. Cognitive trust was not found to drive job performance (β=.011), t (1,72) = .089, p = .929, 95% CI [-.166, .181], R^2=.00, and then, when studying the bootstrapping results, logically not to mediate the relationship between transformational leadership and job performance, t (2,70) = .75, p = .454, 95% CI [-.213, .215]. The explorative research question "How does cognitive trust affect the relationship between transformational leadership and affective organizational commitment?" however can be answered. Besides the mediating effect of cognitive trust on the relationship between transformational leadership and affective trust, according to the model, the effect of cognitive trust on affective trust mediated the relationship between transformational leadership and AOC. Indeed, when studying the Preacher and Hayes (2010) MEDTHREE mediation Bootstrapping Macro, a path between transformational leadership and AOC was mediated by first cognitive trust in leader and second affective trust in leader (β=.090, p<.001). Combined with the indirect effect found in hypothesis 2b, there are two routes from transformational leader to an increased AOC: one via cognitive trust to affective trust and one via leader-follower interaction frequency to affective trust (β=.195, p=.010).

Hypothesis 4a, regarding the negative effect of physical distance on leader-follower interaction frequency, was also supported (β= -.417, p<.001). Additionally

physical distance was found to negatively influence affective trust, through decreasing leader-follower interaction frequency (H4b) resulting in a significant mediation (β= -.101, p=.007). Finally, hypothesis 4c was also confirmed. The model showed physical distance to negatively affect AOC, through decreasing leader-follower interaction frequency which negatively affected affective trust in leader (β= -.034, p=.033). As there is only one possible route in the model from physical distance to AOC, no subsequent analyses had to be performed to confirm this effect.

4.4. Additional analysis

To gain insight into potential impact differences on affective trust between high and low physical distance for high versus low transformational leaders, hierarchical linear regression analysis was performed. In the first step, the standardized variables of transformational leadership and distance were entered after which in the second step their interaction was added, calculated by using the product of the standardized variables of both transformational leadership and distance. The relationship between distance and affective trust was moderated by transformational leadership, t (78) = 2.872, p = .005, 95% CI [.049, .271], R^2 = .495. In order to further specify this effect, simple slope analyses have been performed including the interaction between physical distance and high transformational leadership as well as the interaction between physical distance and low transformational leadership. In order to create both high and low physical distance as well as high and low transformational leadership the means of the variables have been used plus (in case of high) or minus (in case of low) one standard deviation. These analyses show no effect of physical distance on affective trust for high transformational leaders (β= .311), t (1,72) = -1.014, p = .314, 95% CI [.049, .271], but a marginally significant negative

effect of physical distance for low transformational leaders (β= .388), t (1,72) = -1.882, p = .064, 95% CI [.049, .271]. The moderation as depicted in Figure 3 indeed shows this. For the figure, the means of the variables have been used plus one standard deviation in the case of high distance and high transformational leadership and minus one standard deviation in the case of low distance and low transformational leadership.

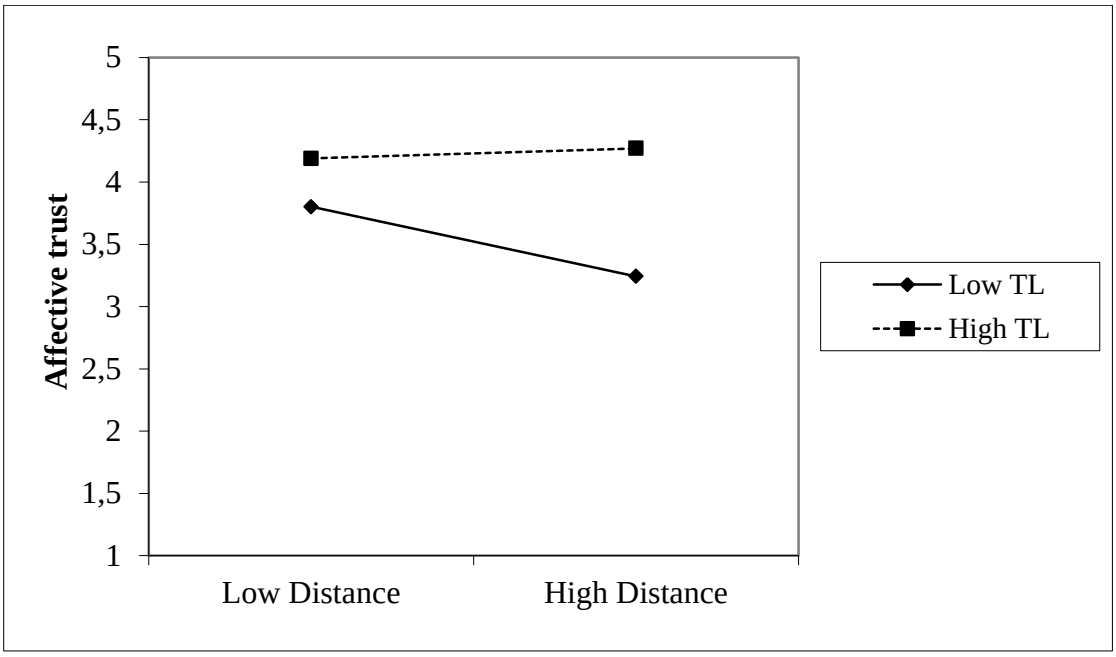


Figure 3. Moderation effect of transformational leadership on the relationship between distance and affective trust.

This means that transformational leaders seem to be found to drive affective trust regardless of distance, where lowly transformational leaders seem to suffer from physical distance. Results from the linear path model tests and earlier mediation analyses indicated leader-follower interaction frequency to mediate this effect, as shown in Figure 2.

It remains however interesting that employees of high transformational leaders are generally unaffected by physical distance with regards to their affective trust since

high transformational leaders were expected to be negatively influenced by physical distance as well. Because transformational leaders drive affective trust partly through leader-follower interaction frequency, a curved regression analysis was performed on the relationship between leader-follower interaction frequency and affective trust. The regression analysis comparing both a curved path and a linear path indicated that the data better fitted a curvilinear, quadratic model ($F(2,79)=11,172$, $p<.001$, $R^2=.22$) than a linear model ($F(1,80)= 16,626$, $p<.001$, $R^2=.17$), $\Delta R^2=.05$, $p=.009$. Figure 4 depicts this.

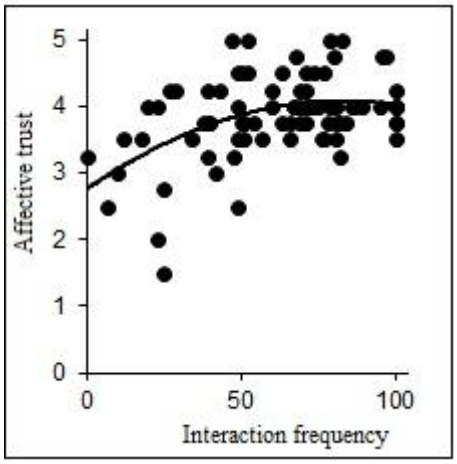


Figure 4. Quadratic relationship between leader-follower interaction frequency and affective trust.

The regression shows leader-follower interaction frequency to up to a certain level to drive affective trust, with the slope decreasingly increasing after a score of roughly 55. After finding this threshold with regard to interaction frequency, the average interaction frequencies of highly and lowly transformational leaders at high versus low physical distances were compared to this threshold. This was done using a univariate linear model with groups categorized with a median-split. This showed that although transformational leaders interact more with their followers at low physical distance ($M=70.179$, $SD=19.377$) than at high physical distance ($M=53.769$,

SD=24.884), $F(1,40)=5.307$, $p=.027$, $\eta^2= .120$, on average they do not interact much lower than the score of 55, protecting them from the negative effects of physical distance.

Medium used. As a final analysis, to see if certain media of communication were more effective than others in driving AOC through affective trust, mediation analyses were performed using the SPSS INDIRECT Bootstrapping Macro as developed by Preacher and Hayes (2008). Out of the interaction media phone call, sms/whatsapp, e-mail and face to face, only phone call returned a significant indirect effect ($\beta=.115$, $p=.043$). This implies the phone to be the most effective medium to interact with for leaders to drive AOC.

5. Discussion

The current study adds to our understanding of leader effectiveness in physically distant circumstances. While the physical distance between leaders and their followers has been found to be increasing (Antonakis & Atwater, 2002), this physical distance has also been found to negatively impact the effectiveness of transformational leaders (Howell et al., 2005). An increased understanding with regard to how and why is therefore valuable. Aiming to identify the psychological mechanism behind this attenuating effect of physical distance on the positive relationship between transformational leadership and follower work outcomes, the roles of cognitive and affective trust were examined. The linking role of affective trust between transformational leadership and positive follower work outcomes has been of particular interest. Affective trust has been found to be a key factor for leaders to drive positive follower work outcomes and leaders have been shown to drive this affective trust through leader-follower interaction frequency. This frequency

decreased as physical distance increased, thereby indirectly negatively impacting follower work outcomes.

This study presents an integrative model depicting the route from transformational leadership to positive work outcomes and the negative influence of physical distance thereon. Where models are often formed by assembling tested individual (mediating) effects, the model this study presents was composed using the stringent method of structural equation modeling. Next to numerous statistical advantages, this provided insight in the significance of the combination of the individual associations together representing the model (Zhang & Kim, 2013). The following section shall first reflect on the first part of the model, describing transformational leadership to lead to positive follower outcomes via two routes and types of trust. Findings linking physical distance to this first part of the model will then be discussed, resulting in an integrative model.

Consistent with earlier work and this study's expectations, transformational leaders were found to strongly drive their followers' cognitive and affective trust in them (H1a & H1b). Additionally, and also as expected, transformational leaders drove their followers' affective trust through frequently interacting with them (H1c). However, this effect was curved. Although high frequencies of interaction did not impede affective trust, a threshold was found from which more interaction no longer led to more affective trust. Beside the fact that one could intuitively expect followers not to appreciate their leader calling too often, other scholars have expected and found this effect as well (Antonakis & Atwater, 2002; Cardinal & Hatfield, 2000). Too much interaction is argued to make followers feel controlled and hindered in their tasks, a notion that has common ground with Hersey and Blanchard's (1982) theory of situational leadership. This theory argues that depending on followers' maturity, in

certain situations it can be more effective to interact less. It might be that followers interpret too much interaction as controlling and as a sign of a lack of trust from their leader, which they then to a certain degree reciprocate.

The fact that transformational leaders use their interaction frequency with followers to drive affective trust is just as interesting as the fact that these leaders contrarily drive cognitive trust without it. On a side note, while the SEM based Table 2 indeed shows an insignificant correlation between leader-followers interaction frequency, the SPSS based Table 1 contrarily shows a significant correlation. As mentioned earlier, SPSS only focuses on the association of two variables, where SEM has the ability to control for all the variables when calculating associations. The association is therefore deemed confounded by transformational leadership. Regardless of the practical implications following from this, it provides additional support for trust as a two-dimensional concept; different antecedents indicate different dimensions. It also provides insight into the differences between the two types of trust. The lack of association between cognitive trust and leader-follower interaction frequency may imply cognitive trust to be attributable. This notion finds support in a paradigm of Shamir (1995), which too describes a cognitive and an affective aspect, though studying charisma. Like cognitive trust, attributional charisma builds on followers' assessment of a leader's abilities. Shamir (1995) found a leader´s attributional charisma to be based on cues of team performance, image and hearsay, rather than on actual personal observations of the follower who perceives the charisma. This attribution bias of cognition based assessments might apply to cognitive trust as well. Leaders may build their followers' cognitive trust regardless of their interaction with followers; building the perceptions of their ability, dependability and integrity through hearsay, image and notions of team performance. In this case

cognitive trust would indeed not be expected to be related to leader-follower interaction frequency. However, the lack of association between cognitive trust and leader-follower interaction frequency could also simply mean that followers form an assessment of their leader's capabilities regardless of their interaction with their leaders. When followers see their leader perform poorly and therefore lack cognitive trust in him/her, an increased interaction with that leader might only show more of the poor performance. This would then not be expected to increase cognitive trust.

The lack of association between leader-follower interaction frequency and cognitive trust brings us to affective trust, which actually is driven by the amount of interaction between leaders and followers. Even when not taking into account the actual interaction content (either more socially versus task oriented or formal versus informal), this study found followers' affective trust to increase with an increase in leader-follower interaction frequency. This provides a nuance to the work of Li and colleagues (2006), who found leader-follower interaction frequency to increase general trust. Apparently the fact itself that leaders interact with followers gives followers the feeling that they are invested in.

With regard to the most effective medium to interact with, the phone was the only medium for which a significant indirect effect on AOC was found. The phone is therefore deemed the most effective medium to communicate with, which is very interesting with regard to practical implications. It does however not seem to provide insight with regard to effects of information content, as this study aimed to control for too. As described earlier, more traditional media like face-to-face and phone are not necessarily more emotional or personal than digital media (Derks et al., 2008; Walther, 1996), nor are they per se more effective (Dennis et al., 2008). Studies focusing on

these topics instead of just controlling for them are needed before further conclusions can be drawn.

Returning to affective trust, results from this study also indicated that followers not only felt invested in because of the frequent interaction between them and their leader but that they reciprocated these leader's efforts as well, in the form of affective organizational commitment. As proposed, affective trust was found to be driving AOC (H2a) and also to be the mediating link between transformational leadership and AOC (H2b). Interestingly, an additional mediating path from transformational leadership to AOC was found. Beside the proposed path from transformational leadership to leader-follower interaction frequency, affective trust and AOC, a path from transformational leadership to cognitive trust and then affective trust, leading to AOC was found. This additional finding of cognitive trust leading to affective trust (and not the other way around) further adds to our understanding of the antecedents and effects of trust.

With regard to antecedents, this study adds to the notion that cognitive trust precedes affective trust. Followers seem to be (either intentionally or unintentionally) quite rational about whom to affectively trust, in practice resembling to their choice in whom to socially invest. As said, the use of SEM provided strong statistical indication that cognitive trust precedes affective trust and not the other way around. Additionally, theoretical support for this claim is available. Followers' affective trust has previously been found to only increase after a baseline level of cognitive trust has been established (McAllister, 1995; Schaubroeck et al., 2011). This is argued to be a mechanism for followers to prevent harm due to a lack of their leader's ability or integrity while they are affectively trusting and therefore vulnerable. Moreover, scholars have shown cognition to precede affect with regard to other constructs as

well. Cognitive involvement in a charity for instance drives supporters' knowledge about the capabilities and actions of a charity, which if high enough could lead to their experience of an emotional appeal to the charity, referred to as affective involvement (Lazarus & Smith, 2008; Kim, 2008; Shang, Chen & Liao, 2006). As with trust, people want to assure themselves that their trustee is capable and acts in good faith before they are risking to get affectively attached. To conclude, this study provides additional support for cognition to precede affect. With regard to trust specifically, it additionally implies that followers look for assurances that their leader is able and possesses enough integrity not to disadvantage them before they socially invest in the relationship.

Next to the antecedents of cognitive and affective trust this study provides insight in their effects on follower work outcomes. The notion of cognitive trust leading to affective trust provides additional indication that although cognition is important, the affective side is often the decisive factor. Out of the two types of trust, this study's results indicate affective trust in the end to drive positive work outcomes, compliant with other research. Schaubroeck and colleagues (2011) for instance found affective trust to explain twice the variance in positive work outcomes as cognitive trust, whilst Zhu et al. (2013) even found cognitive trust to negatively influence follower work outcomes. Furthermore, other work emphasized follower work outcomes to be driven by affective aspects over cognitive aspects, such as (leader and/or follower) emotional intelligence (Wong & Saw, 2002), job engagement (Rich, Lepine, & Crawford, 2010), feelings of justice (Walumbwa, Cropanzano & Hartnell, 2009) and positive affect (Kaplan, Bradley, Luchman & Haynes, 2009). In sum, this study adds to earlier research with the notion that although leaders can be capable managers, leaders who are able to provide their followers a working environment in

which they feel well and safe and which facilitates them to fully focus on their work, are likely to be more effective.

Further elaborating on the effects of affective trust, next to AOC this study expected affective trust to drive job performance and OCB. This unfortunately was not found. To explore validity and reliability of the measures, correlations and alpha scores were examined. Since job performance and OCB correlate as would be expected, R=.670, p<.001 (Podsakoff, Whiting, Podsakoff, & Blume, 2009; Randall, Cropanzano, Bormann, & Birjulin, 1999) and the reported alpha scores indicate that the used scales are reliable too, the probability of a ceiling effect was explored as this is a known vulnerability of performance measures (Howell et al., 2005). High score averages and low standard deviations indeed indicated this ceiling effect for both measures, as reported below. Although a known risk, the fact that teams participated in this study on a voluntary basis made it difficult to prevent. Poorly performing teams might simply not have signed up for participation to prevent attention to their poor performance. As a final control, to see if the ceiling effect could indeed prevent results to be found in this research setting, the average scores and standard deviations from two other studies examining affective trust and follower work outcomes were examined (Schaubroeck et al., 2011; Zhu et al., 2013). If those studies suffered from the same ceiling effect but actually did find performance results, this would indicate that this study's lack of performance results might not be caused by the described ceiling effect. Regarding job performance averages were indeed much higher and standard deviations much lower in the current study (M=4.21, SD=.47) than in the study of Schaubroeck et al. (2011) (M=3.86, SD= .76) and by Zhu et al. (2013) (M=3.48, SD=.91). The same applies to OCB, as measured by this study (M=3.86, SD=.46) and Zhu et al. (2013) (M=3.39, SD=.80). Taking everything into

consideration, no theoretical assumptions are drawn from the lack of association between this the performance measures and other measures.

Adding up so far, a model describing how transformational leaders increase their followers' work outcomes has been discussed. Confirmation of this first part of the proposed integrative model, describing affective trust to be a key factor for transformational leaders to drive AOC, made it possible to interpret the negative influence of physical distance on leader effectiveness.

This influence of physical distance was earlier seen as a boundary effect for transformational leaders by a study of Howell and colleagues (2005), as far as I know the only study to examine the effects of physical distance on transformational leadership. They reached this rationale after they could only find a direct effect of transformational leadership on follower work outcomes under conditions of low physical distance. However, this study is the first to take underlying mechanisms into account.

Using SEM to test a complete model, also regarding affective and cognitive trust and leader-follower interaction frequency, showed that transformational leaders are actually more apt at leading from a distance than their non-transformational colleagues. With SEM, transformational leaders were shown to benefit AOC indirectly (H2b); since physical distance is depicted along the path from transformational leadership to AOC, its effects (both direct and indirect) have been controlled for as well. Transformational leaders were found to use their interaction frequency with their followers as a buffer against the negative effects of physical distance, thereby still increasing their followers' affective trust from a distance. Transformational leaders generally make sure they interact more frequently than the earlier described frequency threshold, so that the negative effect of physical distance

does not drop their interaction frequency below this threshold. Lowly transformational leaders interact less with their followers, so that the negative effect of physical distance does drop their interaction frequency below the threshold. Through this decrease in interaction frequency, physical distance impedes lowly transformational leaders' ability to drive affective trust and indirectly thereby AOC. Contrary to the findings of Howell and colleagues (2005), transformational leadership does benefit AOC under conditions of physical distance when controlling for indirect paths with SEM.

Integrating this insight in the model as earlier discussed results in the final integrative model as proposed by this study. The current study found the psychological mechanism behind the negative influence of physical distance on leader effectiveness, not necessarily on transformational leader effectiveness. Contrarily, due to driving affective trust through leader-follower interaction frequency, transformational leadership is shown to be an effective leadership style for leaders who are situated at physical distance from their followers.

5.1. Practical implications

As described, the ongoing increase in physically distant leadership gives the current study its practical relevance. The model as proposed was largely confirmed which results in a number of practical implications. First, this study supports the notion that out of the two types of trust, affective trust is the definitive driver of positive follower work outcomes. Leaders can focus on improving their own task related abilities but thereby only increase the effectiveness of themselves, which is one person. The current study suggests that instead leaders have the chance to

improve the effectiveness of many followers by providing a work environment in which they feel psychologically safe and in which they can fully commit to their work.

Second, this study provides leaders a way to do this. Frequently interacting with followers in a manner that is inspirationally motivating, stimulates intellect, inspires with vision and cares for individuals clearly makes followers feel invested in during their work, which could result in the improvement of their affective organizational commitment. With regard to the choice of interaction medium, results pointed to the usefulness of phone calls which were found to be more effective in predicting follower AOC than face-to-face communication. The measure was just a control variable in the current study so results should be interpreted with caution, but it does imply a very practical use. Instead of choosing for the time-consuming option of face-to-face communication, (distant) leaders could use the option of calling their followers. This saves a lot of time which the leader can use to interact more frequently with more team members.

Third, although the implications as described above are useful for all leaders, they are especially useful for leaders who lead from a distance. Mostly regarding the frequency of interaction, leaders seem to be able to communicate relatively frequently when they are physically proximate to their followers. At a distance however, this frequency was shown to suffer which indirectly resulted in negative effects for followers' affective organizational commitment.

Summing up, the short practical advice to leaders (especially distant ones) is therefore: lead transformationally, pick up the phone to interact frequently with your followers and show them you invest in them.

5.2. Limitations and strengths

Although promising results were found, this study has some potential limitations. For a first study combining two constructs it was useful not to invite a too diverse group of participants. With this in mind, while fostering an acceptable level of generalizability, participants from two different industries were asked to participate. However, proper validation amongst more participants in more different contexts is desirable before generally accepting the proposed model. Regarding the fact that other work concerning cognitive trust and affective trust was carried out in an industrial and in a banking setting in China (Schaubroeck et al., 2011; Zhu et al., 2011) it would be very interesting to see if the model also holds in those contexts.

Another possible limitation may be that this study did not find results for job performance or OCB. This lack of effect was ascribed to a ceiling effect and since results on AOC were found, conclusions regarding follower work outcomes were still drawn. It may however be the case that instead of a methodological effect something with a more theoretical base was found which was neglected. To test this, future studies could prevent participation to their study to depend on the decision of team supervisors who are anticipated to participate in the study. It could also help if performance data would be provided by somebody else than direct supervisors. Participation of followers who (mostly) get paid per delivered performance (sales targets, kilos processed) might be a solution, since performance data of these followers can be acquired at the department in charge of payroll. Finally it might be useful to measure both types of performance on a 7-point Likert scale to increase the likelihood of satisfactory variance (Cohen, Manion, & Morrison, 2011).

Looking at strengths of this study the use of SEM has already numerously been addressed. Still unaddressed though, is the strength this study has in comparison

to other studies using SEM. Where increasing amounts of studies flaunt with their use of SEM, in many cases their use of it is flawed. One often sees a proud presentation of a statistically significant Chi-square of a proposed model, while this actually means that the proposed model does not match the population and should therefore be rejected. Another widely seen flaw is the lack of a reported Chi-square combined with a lacking covariation matrix. A covariation matrix is enough to replicate the entire proposed model –and calculate its corresponding Chi-square. The current study suffers from none of the above flaws and therefore optimally benefits from the statistical strengths of SEM.

A second strength of this study is the fact that even though the amount of industries participants were employed in was limited, the spread within these industries was satisfying. Participants worked within different companies from one holding and therefore followers working in different niches participated. Participants worked amongst others in facility management, cleaning, specialty cleaning, hospitality services and so forth.

5.3. Future research

As mentioned earlier, frequency of interaction between leaders and followers may not be the only interaction-related construct to impact affective trust. Interaction content could intuitively be expected to have an effect as well. Two negative interactions with your leader a day could very well have a different effect from having two positive interactions a day. Burgoon and Hale (1987) described eight different types of information content, all which might have an effect on affective trust: *dominance*, *equality*, *immediacy/affection*, *receptivity/trust*, *similarity/depth*, *composure*, *formality* and *task orientation*. Out of these affective trust may be driven

by *receptivity/trust* (being sincere and open to others), *similarity/depth* (making others feel similar to yourself, acting as friends) and *equality* (removing hierarchical differences), since these are argued to make people like others and to increase their willingness to deepen a relationship (Burgoon & Hale, 1987). *Dominance* and *formality* may contrarily impede affective trust, since these are argued to keep others more at a social distance (Burgoon & Hale, 1987). With regard to *task orientation*, expectations are more clouded. Reliability of this scale was very low in the current study which may imply the need for the scale to be revised. *Task orientation* comprises the poles of social orientation versus task orientation but these may not necessarily be mutually excluding each other; task-oriented people might also have relational tendencies. Future research could more extensively examine the different kinds of interaction content and its different effects on affective trust, and whether interaction frequency plays a role in this.

In a similar vein the impact of communication medium can be examined more extensively. This study found results for phone calls as being most effective in predicting affective trust but no statistical indication regarding the direction of this effect was obtained. As described earlier, literature regarding mediated communication would not necessarily predict digitally mediated communication to be less rich or effective in potential than more traditional communication by phone or face-to-face. Other aspects might play a role as well. It might be that regardless of the full potentials of different media, people prefer separate media to transmit differing kinds of communication content. This has yet to be found out, specifically in relation to affective trust and leader-follower interaction frequency.

To conclude, this study presents a model regarding leader effectiveness and the negative effects of physical distance thereon. It identified the psychological

mechanism behind this influence, namely affective trust in the leader through leader-follower interaction frequency. The presented model is tested using one of the most stringent statistical tests available and with this combination of theory and statistics this study hopes to have provided a base for further work in the fields of (transformational) leadership effectiveness and of trust. Possible limitations of this study and imaginable other factors impacting affective trust or interaction frequency leave room for extensions to the model.

Appendix 1 - Measures in Dutch

Transformational leadership

Idealized influence

1. Praat met mensen over zijn/haar belangrijkste waarden en overtuigingen.
2. Maakt mensen trots dat ze in één adem met hem/haar genoemd worden.
3. Maakt duidelijk hoe belangrijk het is om een duidelijk doel voor ogen te hebben.
4. Maakt zijn/haar eigenbelang ondergeschikt aan dat van de groep.
5. Gedraagt zich op een manier die respect afdwingt.
6. Overweegt de morele en ethische consequenties van zijn/haar beslissingen.
7. Straalt overwicht en zelfvertrouwen uit.
8. Benadrukt hoe belangrijk het is om een gezamenlijke missie te hebben.

Inspiratonal motivation

1. Praat optimistisch over de toekomst.
2. Praat enthousiast over wat er bereikt moet worden.
3. Verwoordt een meeslepende visie op de toekomst.
4. Uit vertrouwen dat doelen bereikt zullen worden.

Intellectual stimulation

1. Onderzoekt of cruciale aannames nog van toepassing zijn.
2. Zoekt uiteenlopende invalshoeken bij het oplossen van problemen.
3. Zorgt ervoor dat mensen problemen van vele verschillende kanten bekijken.
4. Suggereert nieuwe manieren van kijken naar hoe taken volbracht moeten worden.

Individualized consideration

1. Besteedt tijd aan mensen dingen leren en coachen.
2. Behandelt mensen als individu, in plaats van zomaar een lid van een groep.
3. Houdt er rekening mee dat mensen verschillende behoeften, bekwaamheden en ambities hebben.
4. Helpt mensen hun sterke kanten te ontwikkelen.

Affective Trust

1. Mijn leidinggevende en ik hebben een wederzijdse relatie. Beide kunnen we onze ideeën, gevoelens en wensen naar elkaar uiten.
2. Ik kan moeilijkheden tijdens het werk onbelemmerd met mijn leidinggevende bespreken en ik weet dat hij/zij dan ook zal luisteren.
3. Mijn leidingevende en ik zouden het beide jammer vinden als een van ons tweeën ergens anders zou gaan werken en we dus niet meer zouden kunnen samenwerken.
4. Als ik mijn problemen met mijn leidinggevende zou delen, weet ik dat hij/zij opbouwend en zorgzaam zal reageren.

Cognitive trust

1. Mijn leidinggevende benadert zijn/haar baan professioneel en met toewijding.
2. Als ik kijk naar de resultaten van mijn leidinggevende, zie ik geen reden om te twijfelen aan zijn/haar competentie voor zijn/haar baan.
3. Ik kan ervan uitgaan dat mijn leidinggevende mij het werk niet moelijker maakt door onzorgvuldig te werk te gaan.

4. De meeste mensen, ook mensen die niet bevriend zijn met mijn leidinggevende, respecteren hem/haar als collega.
5. Mijn collega's die met mijn leidinggevende in contact staan, zien hem/haar als betrouwbaar.
6. Als mensen meer over mijn leidinggevende en zijn/haar achtergrond zouden weten, zouden zij zich meer zorgen maken over zijn/haar prestaties en die beter in de gaten houden.

Physical distance

1. Mijn leidinggevende werkt direct bij mij in de buurt waardoor ik zonder veel moeite naar hem/haar toe kan
2. Mijn leidinggevende werkt te ver van mij vandaan om projecten snel af te ronden
3. Het is moeilijk om spontaan face to face met mijn leidinggevende af te spreken voor bijvoorbeeld discussie of besluitvorming

Affective organizational commitment

1. Ik zou met plezier de rest van mijn carrière bij deze organisatie blijven werken
2. Problemen van het bedrijf voelen als mijn eigen problemen
3. Ik voel me niet echt thuis bij deze organisatie
4. Ik voel me niet emotioneel verbonden aan deze organisatie
5. Ik voel me erg opgenomen in het bedrijf
6. Deze organisatie betekent veel voor me

6. References

Amabile, T.M. (1998). How to kill creativity. *Harvard Business Review, 76,* 76–87.

Antonakis, J., & Atwater, L. Leader distance: a review and a proposed theory. *The Leadership Quarterly*, *13*(6), 673-704.

Avolio, B. J., & Bass, B. M. (1995). Individual consideration viewed at multiple levels of analysis: a multi-level framework for examining the diffusion of transformational leadership. *The Leadership Quarterly*, *6,* 199–218.

Avolio, B. J., Zhu, W., Koh, W., & Bhatia, P. (2004). Transformational leadership and organizational commitment: Mediating role of psychological empowerment and moderating role of structural distance. *Journal of organizational behavior*, *25*(8), 951-968.

Bailey, D.E., & Kurland N.B. (2002). A review of telework research: Findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior*, *23*, 383-400.

Bass, B. M., & Avolio, B. J. (1995). *Multifactor leadership questionnaire: Manual leader form, rater, and scoring key for MLQ (Form 5x-Short)*. Redwood City, CA: Mind Garden.

Bartram, T., & Casimir, G. (2007). The relationship between leadership and follower in-role performance and satisfaction with the leader: The mediating effects of empowerment and trust in the leader. *Leadership & Organization Development Journal*, *28*(1), 4-19.

Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: The Free Press.

Bass, B. M., & Avolio, B. J. (1994). *Improving organizational effectiveness through transformational leadership*. Thousand Oaks, CA: Sage.

Bass, B.M., & Riggio, R.E. (2006). *Transformational leadership* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.

Blau, P. 1964. *Exchange and Power in Social Life*. New York: Wiley.

Braun, S., Peus, C., Weisweiler, S., & Frey, D. (2012). Transformational leadership, job satisfaction, and team performance: A multilevel mediation model of trust. *The Leadership Quarterly*, *24*(1), 270-283.

Burgoon, J. K., & Hale, J. L. (1987). Validation and measurement of the fundamental themes of relational communication. *Communications Monographs*, *54*(1), 19-41.

Burke, C. S., Sims, D. E., Lazzaro, E. H., & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *The Leadership Quarterly*, *18*, 606-632.

Burns, J. M. (1978). *Leadership*. New York: Harper & Row.

Cardinal, L. B., & Hatfield, D. E. (2000). Internal knowledge generation: the research laboratory and innovative productivity in the pharmaceutical industry. *Journal of Engineering and Technology Management*, *17*(3), 247-271.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). London: Routledge.

Cooper-Hakim, A., & Viswesvaran, C. (2005). The construct of work commitment: testing an integrative framework. *Psychological bulletin*, *131*(2), 241.

Dayan, M., & Di Benedetto, C. A. (2010). The impact of structural and contextual factors on trust formation in product development teams. *Industrial Marketing Management*, *39*(4), 691-703.

Dennis, A. R., Fuller, R. M., & Valacich, J. S. (2008). Media, tasks, and communication processes: A theory of media synchronicity. *MIS quarterly*, *32*(3), 575-600.

Derks, D., Fischer, A. H., & Bos, A. E. (2008). The role of emotion in computer-mediated communication: A review. *Computers in Human Behavior*, *24*(3), 766-785.

Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology*, *87*, 611-628.

Genovese, G., Friedman, D. J., Ross, M. D., Lecordier, L., Uzureau, P., Freedman, B. I., ... & Pollak, M. R. (2010). Association of trypanolytic ApoL1 variants with kidney disease in African Americans. *Science*, *329*(5993), 841-845.

Farrell, J. B., Flood, P. C., Curtain, S. M., Hannigan, A. I. L. I. S. H., Dawson, J., & West, M. (2005). CEO leadership, top team trust and the combination and exchange of information. *Irish Journal of Management*, *26*(1), 22.

Festinger, L. *A theory of cognitive dissonance*. Stanford: Stanford University Press, 1957.

Hackman, J. R. (2002). *Leading teams: Setting the stage for great performances*. Boston, MA: Harvard Business School Press.

Hayes, A. F., Preacher, K. J., & Myers, T. A. (2010). Mediation and the estimation of indirect effects in political communication research. In E. P., & R. Lance Holbert (Eds), *Sourcebook for political communication research: Methods, measures, and analytical techniques.* New York: Routledge.

Hersey, P. & Blanchard, K. (1982). *Management of organizational behavior* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.

Hoegl, M., & Proserpio, L. (2004). Team member proximity and teamwork in innovative projects. *Research Policy*, *33*, 1153-1165.

Hon, A. H., & Lu, L. (2010). The mediating role of trust between expatriate procedural justice and employee outcomes in Chinese hotel industry. *International Journal of Hospitality Management, 29*(4), 669-676.

Howell, J.M., Neufeld, D. J., & Avolio, B.A. (2005). Examining the relationship of leadership and physical distance with business unit performance. *The Leadership Quarterly*, *16*(2), 273-285.

Howell, J. M., & Hall-Merenda, K. E. (1999). The ties that bind: The impact of leader-member exchange, transformational and transactional leadership, and distance on predicting follower performance. *Journal of Applied Psychology*, *84*(5), 680-694.

Howell, J. M., & Shamir, B. (1998). Pockets of fire: the potential and the risk. In F. Dansereau, & F. J. Yammarino (Eds.), *Leadership: the multiple-level approach (contemporary and alternative)*, 37-44, Stamford, CT: Jai Press.

Hui, C., Law, K. S. & Chen, Z. X. (1999). A structural equation model of the effects of negative affectivity, leader-member exchange, and perceived job mobility on in-role and extra-role performance: A Chinese case. *Organizational behavior and human decision processes*, *77*(1), 3-21.

James, L. R., & Brett, J. M. (1984). Mediators, moderators, and tests for mediation. *Journal of Applied Psychology, 69*(2), 307-321.

Joshi, A., Lazarova, M. B., & Liao, H. (2009). Getting everyone on board: The role of inspirational leadership in geographically dispersed teams. *Organization science*, *20*(1), 240-252.

Judge, T.A., & Piccolo, R.F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89(5), 755-768.

Jung, D., & Avolio, B.A. (2000). Opening the black box: An experimental investigation of the mediating effects of trust and value congruence on transformational and transactional leadership. *Journal of Organizational Behavior*, *21*, 949-964.

Kaplan, S., Bradley, J. C., Luchman, J. N., & Haynes, D. (2009). On the role of positive and negative affectivity in job performance: a meta-analytic investigation. *Journal of Applied Psychology*, *94*(1), 162.

Kelley, E., & Kelloway, E.K. (2012). Context Matters. Testing a Model of Remote Leadership. *Journal of Leadership & Organizational Studies*, *19*(4), 437-449.

Kelloway, E.K., Turner, N., Barling, J. & Loughlin, C. (2012). Transformational leadership and employee psychological well-being: The mediating role of employee trust in leadership. *Work & Stress: An International Journal of Work, Health & Organisations*, *26*(1), 39-55

Ki, E., & Hon, L. C. (2007). Testing the linkages among the organization-public relationship and attitude and behavioral intentions. *Journal of Public Relations Research, 19*, 1-23.

Kim, K. (2008). Analysis of structural equation model for the student pleasure travel market: Motivation, involvement, satisfaction, and destination loyalty. *Journal of Travel and Tourism Marketing*, *24*, 297-313.

Kline, R. B. (2011). *Principles and practice of structural equation modeling*. New York: Guilford Press.

Knoll, D. L., & Gill, H. (2011). Antecedents of trust in supervisors, subordinates, and peers. *Journal of Managerial Psychology*, *26*(4), 313-330.

Latané, B., Liu, J.H., Nowak, A., Bonevento, M., & Zheng, L. (1995). Distance matters: Physical space and social impact. *Personality and Social Psychology Bulletin*, *21*, 795-805.

Lazarus, R. S., & Smith, C. A. (2008). Knowledge and appraisal in the cognition-emotion relationship. *Cognition and Emotion*, *2*, 281-300.

Li, A.N., & Tan, H.H. (2012). What happens when you trust your supervisor? Mediators of individual performance in trust relationships. *Journal of Organizational Behavior*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/job.1812/full.

Li, J. J., Zheng Zhou, K., Lam, S. S., & Tse, D. K. (2006). Active trust development of local senior managers in international subsidiaries. *Journal of Business Research*, *59*(1), 73-80.

Liu, J., Siu, O.-L. and Shi, K. (2010). Transformational Leadership and Employee Well-Being: The Mediating Role of Trust in the Leader and Self-Efficacy. *Applied Psychology: An International Review*, *59*, 454-479.

Lowe, K. B., Kroeck, K. G., & Sivasubramaniam, N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the MLQ literature. *The Leadership Quarterly*, *7*(3), 385-425.

MacKenzie, S. B., Podsakoff, P. M., & Fetter, R. (1991). Organizational citizenship behavior and objective productivity as determinants of managerial evaluations of salespersons' performance. *Organizational Behavior and Human Decision Processes*, *50*, 123-150.

Mayer, R.C., Davis, J.H. and Schoorman, F.D. (1995). An integrative model of organizational trust. *Academy of Management Review*, *20*(3), 709-734.

Mayer, R. C., & Gavin, M. B. (2005). Trust in management and performance: who minds the shop while the employees watch the boss? *Academy of Management Journal*, *48*(5), 874-888.

McAllister, D.J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal, 38*, 24-59.

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78(4), 538-551.

Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of vocational behavior*, *61*(1), 20-52.

Morrow, P. C. (2011). Managing organizational commitment: Insights from longitudinal research. *Journal of Vocational Behavior, 79*(1), 18-35.

Ng, K. Y., & Chua, R. Y. J. (2006). Do I contribute more when I trust more? Differential effects of cognition- and affect-based trust. *Management and Organization Review*, *2*(1), 43-66.

Nijstad, B.A., De Dreu., C.K.W., Rietzschel, E.F., & Baas, M. (2010). Towards a dual-pathway to creativity model: Creative ideation as a function of flexibility and persistence. *European Review of Social Psychology, 21*, 34–77.

Norman, R. M., Sorrentino, R. M., Gawronski, B., Szeto, A. C., Ye, Y., & Windell, D. (2010). Attitudes and physical distance to an individual with schizophrenia: the moderating effect of self-transcendent values. *Social psychiatry and psychiatric epidemiology*, *45*(7), 751-758.

Nyhan, R. C. (1999). Increasing Affective Organizational Commitment in Public Organizations: The Key Role of Interpersonal Trust. *Review of Public Personnel Administration*, *19*(3), 58-70.

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.

Pillai, R., Kohles, J.C., Bligh, M.C., Carsten, M.K. & Brodowsky, G. (2011). Leadership in "Confucian Asia": A Three-country Study of Justice, Trust, and Transformational Leadership. *Organization Management Journal*, *8*(4), 242-259.

Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual-and organizational-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, *94*(1), 122-141.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879-891.

Randall, M. L., Cropanzano, R., Bormann, C. A., & Birjulin, A. (1999). Organizational politics and organizational support as predictors of work attitudes, job performance, and organizational citizenship behavior. *Journal of Organizational Behavior*, *20*(2), 159-174.

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, *53*(3), 617-635.

Risto, M., & Martens, M. H. (2013). Time and space: The difference between following time headway and distance headway instructions. *Transportation research part F: traffic psychology and behaviour*, 17, 45-51.

Riketta, M. (2008). The causal relation between job attitudes and performance: A meta-analysis of panel studies. *Journal of Applied Psychology*, *93*(2), 472-481.

Schaubroeck, J., Lam, S.S.K., & Peng, A.C. (2011). Cognition-based and affect-based trust as mediators of leader behavior influences on team performance. *Journal of Applied Psychology*, *96*(4), 863-871.

Shamir, B. (1995). Social distance and charisma: Theoretical notes and an exploratory study. *The Leadership Quarterly*, *6*(1), 19-47.

Spijkerman, C. (2013, February 25). Yahoo: 'Thuiswerkers, kom terug naar kantoor, of anders ontslag'. NRC Handelsblad. Retrieved from http://www.nrc.nl/carriere/2013/02/25/yahoo-thuiswerkers-kom-terug-naar-kantoor-of-anders-ontslag/

Walther, J. B. (1996). Computer-mediated communication impersonal, interpersonal, and hyperpersonal interaction. *Communication research*, *23*(1), 3-43.

Walumbwa, F. O., Cropanzano, R., & Hartnell, C. A. (2009). Organizational justice, voluntary learning behavior, and job performance: A test of the mediating effects of identification and leader‐member exchange. *Journal of Organizational Behavior*, *30*(8), 1103-1126.

Walumbwa, F. O., Lawler, J. J., & Avolio, B. J. (2007). Leadership, Individual Differences, and Work-related Attitudes: A Cross-Culture Investigation. *Applied Psychology*, *56*(2), 212-230.

Wang, S., Tomlinson, E. C., & Noe, R. A. (2010). The role of mentor trust and protégé internal locus of control in formal mentoring relationships. *Journal of Applied Psychology*, *95*(2), 358-367.

Wang, G., Oh, I. S., Courtright, S. H., & Colbert, A. E. (2011). Transformational leadership and performance across criteria and levels: A meta-analytic review of 25 years of research. *Group & Organization Management*, 36(2), 223-270.

Wang, H., Law, K. S., Hackett, R. D., Wang, D., & Chen, Z. X. (2005). Leader-member exchange as a mediator of the relationship between transformational leadership and followers' performance and organizational citizenship behavior. *Academy of management Journal*, *48*(3), 420-432.

Wasti, S. A., Tan, H. H., & Erdil, S. E. (2011). Antecedents of trust across foci: A comparative study of Turkey and China. *Management and Organization Review*, *7*(2), 279-302.

Wong, C. S., & Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The Leadership Quarterly*, *13*(3), 243-274.

Yang, J. & Mossholder, K.W. (2010). Examining the effects of trust in leaders: A bases-and-foci approach, *The Leadership Quarterly*, *21*(1), 50-63.

Yukl, G, A. (1998). *Leadership in organizations*. New Jersey: Prentice-Hall International editions.

Zhang, B., & Kim, J.-H. (2013). Luxury fashion shopping in China: Factors affecting attitude and purchase intent. *Journal of Retailing and Consumer Services*, *20*, 68-79.

Zhu, W., Newman, A., Miao, Q., & Hooke, A. (2013). Revisiting the mediating role of trust in transformational leadership effects: Do different types of trust make a difference? *The Leadership Quarterly*, *24*(1), 94-105.