Master Thesis

The relation between verbal and nonverbal leader behavior, perceptions of leadership style and leadership effectiveness: A mixed method study

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Abstract

The purpose of this study was to investigate and determine the influence of nonverbal behavior of hand gestures of team leaders on their followers and their trust in their leader. A sample of 44leaders were observed and filmed during regularly held staff meetings to minutely analyze their behavior afterwards. Displays of nonverbal and verbal behavior by the leader such as hand gestures, object manipulation, task-oriented and relation-oriented behavior were hypothesized to influence followers perceived cognitive and affective trust in their leader and leaders perceived leadership style. It was further hypothesized that the simultaneous occurrence of nonverbal and verbal behavior would facilitate the influence on perceived cognitive and affective trust and leadership style even further. Also surveys, filled out by the 44 leaders and their followers as well as experts was used to test the hypotheses large public-sector organization in the Netherlands. Findings revealed a significant link between the cognitive and affective aspect of trust and a significant relation between of both types of trust to leadership styles of transactional and transformational. Lastly it was shown that task-related behavior is related to transactional leadership style. Theoretical and practical

implications of these findings are discussed regarding nonverbal and verbal leadership behavior and selective positioning of human capital within organizations

Keywords: team performance, trust in leadership, nonverbal and verbal leader behavior, leadership style; video-method

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Content

Introduction

The nonverbal side in communication and its influence on organizational outcomes is rarely put in the spot light of research. Every verbal communication is accompanied by nonverbal behavior, ranging from body posture over gestures to the tone of the voice. The way a message is transferred from one person to another strongly influences the way the message is perceived and interpreted (Shannon & Weaver, 1949). Listeners may miss out on information if the speaker himself makes use of unfitting nonverbal behavior (e.g. hands in the pocket, facing away from the audience while talking). On the other hand it is also possible to gain attention of others by adjusting ones nonverbal behavior to catch the audience's eye to stir their interested for a topic (e.g. keeping eye contact with the audience, expressing enthusiasm by use of hand gestures). In other words, the way message is conveyed as just as important as the message itself, if not more. The distinction between leader and follower is used in the organizational context to define hierarchal roles. Leaders represent every individual who is tasked with the supervision and delegation of others (e.g. CEO, line manager, project leader). Followers are individuals of the work force who work under the supervision of a leader. The relation of followers and leaders and especially the perceived image of the leader which the followers have is like in all communication influenced by nonverbal behavior. Leadership in organizations and its effect on the organization and its members has been the topic of research for decades and still has not covered all aspects of the subject. Research of the past has been relatively one sided and focused mainly on actionable methods and tools that can be applied to facilitate organizational outcomes (Morgeson et al, 2010). Leaders in different management levels of an organization are placed in pivotal positions and represent the backbone of the organizational structure. They are often tasked with supervising their own team of employees (followers) in the form of team and project work to teach and operate (Hills, 2007). The aspect of the nonverbal behavior such as gestures and body language that takes up a major part during communication has yet to be integrated in into the context of organizational theories. Management scholars have called for more research on how nonverbal interactions impact people at work, specifically in the context of leadership effectiveness (Bonaccio, O'Reilly, O'Sullivan, & Chiocchio, 2016; Darioly & Schmid Mast, 2014; Riggio & Reichard, 2008).

Nonverbal behavior is an inseparable part of communication and can take the form of an accent, substitution, complementation, repletion or contradiction (Shannon & Weaver, 1949). People unconsciously keep on sending and receiving nonverbal signals while talking

which adds additional information to messages and extends their context with the primary goal of transferring information about intentions, attitudes and personality (Ambady, Bernieri, & Richeson, 2000). We are constantly sending out these nonverbal cues that, in most cases unconsciously, are read and interpreted by the people around us (Goffman, 1959). Tapping on someone's shoulder to congratulate him for a job well done is an example for an accentuation. The verbal message of the congratulation is supported by the personal note of physical contact. A substitution fully replaces the need for a verbal message. This behavior can be seen when someone nods to show agreement of someone's spoken statement. Raising ones shoulders is an example of a complementation to express that the answers to a question is unknown. A repetition emphasizes the message much like a repeated head shake to express a disagreement. Contradicting nonverbal behavior expresses the opposite of the verbal aspect and can be seen when someone puts up a forced smile to hide is true opinion of someone else's bad idea. It is impossible to separate the verbal and nonverbal part of a communication even of the nonverbal part is rarely consciously observed by all involved parties (Knapp et al., 2013). Only few researchers have used observational methods to assess the influence of nonverbal behavior of leaders up to this day (Van der Weide & Wilderom, 2004; Hoogeboom & Wilderom, 2015). Moreover, no field study made the connection between nonverbal behavior of leaders and their perceived leadership effectiveness. This leaves the question open to what degree nonverbal behavior actually influences organizational outcomes. Body language and gestures are a major part of communication that can facilitate how a leader is perceived in a group setting. The active use of nonverbal behavior that has been proven to positively contribute to performance by a leader could extend the current understanding of effective techniques to improve a team's relationship and effectiveness. The now occurring question for this research is how leaders expressed nonverbal and verbal behavior influences their followers' perceived trust in them, leaders perceived leadership style and their teams' performance? The goal for this paper is to threefold: (1) review the management and organizational behavior literature on the relation between micro-behavior, team performance, trust in leadership and leadership style, (2) provide empirical evidence for the impact of both verbal and nonverbal leader behavior on how leaders are perceived by their followers and (3) formulate practicable actions for leaders to facilitate their team's performance. Observed verbal and nonverbal behavior of leaders will be tested on their individual and combined influence on team performance, trust which followers have in their leader and leaders perceived leadership style.

Theoretical Framework

Followers' team performance and trust in their leader

Leadership plays a major role in facilitating performance and reaching organizational goals. It is necessary to differentiate and define the role leader and followers have in an organization. A leader is an individual who gain the support of others and guides them towards the accomplishment of a common task (Chemers, 1997). Followers are subordinates of leaders that work under or alongside them to achieve a goal (Chemers, 1997). They are considered to possess a range of specific skills which complement the leader to fulfill a task (Uhl-Bien et al., 2014). Good leaders can inspire their followers, raise their enthusiasm for a project and influence team performance. It has also been presented that leaders in the form of direct supervisors play a more important role for followers trust than the overall organizations guidance (Dirks & Ferrin, 2002). In other words, leaders on all management levels can influence an organization's performance.

Team performance can be greatly influenced by the trust that followers have in their leader (Sharkie, 2009). For example, Webber (2002) points at the importance of a trustful climate for cross-functional teams to overcome challenges of team structures that are formed of multiple departments and hierarchy levels. Trust itself is differentiated as cognitive trust and affective trust. The influence of a leaders expressed nonverbal behavior and leadership effectiveness can be split into the categories of how the leader's trustworthiness, competence and capabilities are perceived by others and the real world influence leaders have on followers in the form of work performance or motivation (Kaiser, Hogan, & Craig, 2008). Both aspects of leaders influence, perceived and real world, often correlate with one another, thus that followers perception of a supervisors leadership abilities can influence followers own commitment and work motivation.

Trust is composed of the two aspects of cognitive and affective trust. Cognitive trust refers to the capabilities that leaders expresses and the trust that followers put into him, based on their skills (McAllister, 1995). Affective trust refers to a trust relation based on emotions and personal preferences (McAllister, 1995). Creating an affective trust relationship aligns with the findings of Bass (1985) in which a charismatic leader invokes the feelings of loyalty and devotion towards a shared goal. Furthermore, it is important for followers to connect with a leader and have a shared pool of morals to perceive him as charismatic (Keyes, 2002). The important aspect of charismatic leaders is that they are seen as confident, capable and strong by their followers, which makes them seem trustworthy in the eyes of their followers

(Antonakis et al., 2011). Leaders who are perceived as trustworthy by their followers can seemingly achieve a better team performance in their group of followers. In this study, the following hypothesis is proposed to regarding the relation between followers perceptions trust in their leader and their team's performance.

H1: Leaders who are perceived as more trustworthy during periodically held staff meetings are more likely to stimulate better team performance in their followers.

The relation between followers trust in leadership and perceptions of leadership

Two major leadership styles have been identified as transformational and transactional. Leaders may vary in their own style and government, but everyone has the tendency to lean to one type or the other.

Transactional leadership style was first developed and introduced by Burns (1978) and consists of (1) contingent reward leadership, (2) management by exception (active) and (3) management by exception (passive) (Bass & Avolio, 1995). The first dimension, contingent reward, is a constructive transaction between leader (the organization) and follower (the employee). Terms and job descriptions that form the obligations of the follower are clarified and leaders pay the followers effort based on fulfilling their obligations as agreed upon (positive reinforcement). The active management by exception relate to leaders who monitors their followers performance and takes corrective actions to steer them in the right direction (negative reinforcement) to meet the agreed upon obligations and quality standards. The passive version of management by exception refers to a leader that takes action after goal or quality standard is not met or a mistake has already happened (feedback) (Bass & Avolio, 1995).

This leadership style can be seen as a give and take relationship between leader and follower (employee). Leaders identify the needs of their followers and attempts to satisfy them in exchange for work in the form of productivity. Followers' incentives for their work have been determined to extend beyond their salaries and have taken the form of a social exchange concept (Festing & Schäfer, 2014). Social exchange theory describes the give and take relationship between two or more parties. In this case, between the employee and the employer. Employees contribute to an organization with their skills to realize an organizational outcome, may it be a product or a service and the employers reward their productivity with a salary. With that, a relationship between both parties is established, exchanging work for a salary (Festing & Schäfer, 2014).

General characteristics of transactional leadership style are the focus on short time goals like projects which are conducted in a cleat structure with pre-determined procedures. Abiding to regulations and their correct execution has a strong part in transactional leadership which makes it predestined in the context of highly technical or bureaucratic sectors. Due to the nature of stiffness, inflexibility and an opposition to change renders transactional leadership weak against unplanned changes to the original planned process (Burns, 1978), unlike the transformational leadership style that facilitates inspiration and change (Brown, 2008). Well-structured organizations with a clear hierarchy and task distribution profit from the efficiency oriented transactional leadership style for short term projects with clear defined criteria's. Long term projects or innovative processes profit more from transformational leadership style in which followers are motivated for the cause and inspired to contribute ideas and change for the organizational outcome.

Transformational leadership style consists of the four dimensions of inspirational motivation, individualized consideration, idealized influence and intellectual stimulation (Brown, 2008). Inspirational motivation describes the degree to which leaders' actions motivate their followers for a cause, mostly by attaching a sense of meaning to their tasks. Leaders' individualized consideration is expressed by giving a follower their attention and addresses their personal needs. Leaders may be seen as a mentor or coach by their followers. A followers' trust in their leader, which has the follower look up to their leaders and strive to resemble them in their capability as a leader is sorted under idealized influence. Taking followers opinions into consideration is regarded as intellectual stimulation as the leader strives to bring forth the followers innovative and productivity (Brown, 2008). **Table 1** summarizes the key points of transactional and transformational in a quick overview (appendix A).

How leaders' capabilities in each of these areas are perceived by their followers depends on their personal ability to excel in communication to lead a group to reach an organizational goal (Burns, 1978 as cited by Northhouse, 2015). Research has already established a link between the effect of transformational leadership style of leaders and the role performance of their followers, indicating that transformational leadership style can facilitate team performance by empowering followers and developing their trust in their leader for organizations with a high degree of standardization, formalization and control (Bartram & Casimir, 2007). Furthermore, the relation between transformational leadership style on followers' in-role performance is mediated by leadership trust and empowerment (Bartram & Casimir, 2007). Empowerment as a tool to influence performance of followers

was also found and conformed by other researchers. Oldham and Hackman (2010) point in the same direction of empowerment to influence performance with their Job Characteristics Theory in which motivation and performance is influenced by (1) skill variety, (2) task identity, (3) task significance, (4) autonomy, (5) job-based feedback. Allowing followers more freedom in the way they execute their task has been demonstrated to effect performance (Bartram & Casimir, 2007). Trust in leadership has been shown to mediate the effect of transformational leadership on role performance of followers. Additionally, the relation between transformational leadership and followers' satisfaction with their leader is also partially mediated by followers trust in their leader (Bartram & Casimir, 2007). It seems that transformational leadership has more effect on followers' role performance when leaders are more trusted and their followers are more satisfied with him. The following hypothesis is proposed to test the relationship between followers trust in their leader and their perceived transformational leadership style:

H2a: Leaders who are perceived as more trustworthy by their followers are more likely to be perceived as a transformational leader.

Employees have the need to be recognized by their organization as part of their job satisfaction. Investing resources in the form of time and training in the form of development opportunities builds a relational psychological contract between follower and leader. Organizations with development programs attract more talent due to the opportunity of advancement within the organization and have a better chance to retain talents and prevent them from moving to competitors by nurturing a trustful relationship between employer and employees (Festing & Schäfer, 2014).

A trustful relationship between leader and followers is recognized as an important factor for the effectiveness of leadership styles. Transformational leadership style is facilitated by followers trust in the leader (Bass, 1990). This research will try to confirm the relation between transformational leadership style and followers trust in their leader and compare it to the relationship between transactional leadership and followers trust in their leader to see if it is also important for other leadership styles and to what degree. The following hypothesis regarding followers trust in their leader and their perceived transactional leader ship style is proposed to test the importance of trust:

H2b: Leaders who are perceived as more trustworthy by their followers are more likely to be perceived as a transactional leader.

Nonverbal leadership behavior, leadership style and followers trust in their leader

There is some research that examined which (combination of) nonverbal and verbal behavior can be beneficial for leaders and their followers (Bass, 1998; Tskhay, Xu, & Rule, 2014).. For example, leaders expressed confidence can be perceived as dominant or powerful which will make them look more trustworthy towards their followers. Other important factors for someone's capability to lead followers are enthusiasm and charisma (Bass, 1998; Tskhay, Xu, & Rule, 2014). Enthusiasm can be displayed by leaders via the use of more active gestures compared to simply sitting still and listening or talking to their followers. Using body language such as gestures and expressions, also contribute to a leader being perceived as charismatic (Bono & Ilies, 2006). The way a message is transferred from one person to another and the underlying nonverbal cues that are being sent have a strong impact on the leader's perceived attitude and charisma (Howell & Frost, 1998). A non visionary message expressed in a strong way has more effect than a visionary message expressed in a weak way (Holladay & Coombs, 1994). The way a message is transferred and expressed from one person to another by underlying nonverbal cues is more important than the quality of the message itself.

The present study will combine verbal and nonverbal aspect of a leader's behavior during team meetings to determine the influence that hand gestures have on a leader's communication skills. Verbal output of the leaders will be categorized as task oriented behaviors, counter-productive behavior, relation-oriented behavior and listening behavior. Leaders will be sorted in regard to their perceived leadership style (transactional vs. transformational) and have their behavior analyzed to determine if certain verbal and nonverbal behavior, or a combination of both, contributes to the effectiveness of any of these leadership styles. Both leadership styles will be tested on the aspect of perceived cognitive and affective trust that followers have in their leader. Trust in leadership has been determined to be a vital factor to facilitate team performance (Sharkie, 2009).

Followers' perception of their leaders in the form of their competences and influence of over others style is affected by the verbal and nonverbal behavior a leader uses (Carli et al., 1995). According to these findings, leaders are perceived as more likable and persuasive when they express social or task-oriented nonverbal behavior over purely dominant or submissive behavior which points at the importance of nonverbal behavior in organizational context and

the relationship between leaders and followers (Carli et al., 1995). Leaders' supportiveness can be conveyed to their followers by nodding, smiling and keeping eye contact with them (Remland et al., 1983). Another nonverbal behavior which can influence perception is the use of hand gestures. The delivery of a compelling idea can be enforced by hand gestures and is argued to be an aspect of a charismatic leader (Frese et al., 2003; Talley & Temple, 2015). Leader's use of nonverbal behavior in the form of hand gestures influences how followers perceive them. It is now interesting to determine if and to what degree leaders observed hand gestures can influence how their leadership style is perceived by followers. The degree to which hand gestures can influence the perceived leadership style of leaders will be tested by the following proposed hypotheses:

H3a: Leaders who use hand gestures more frequently are more likely to be perceived as transactional leaders by their followers.

H3b: Leaders who use hand gestures more frequently during are more likely to be perceived as transformational leaders by their followers.

Hand gestures have already been noted to be an influence on how someone is perceived by others (Carli et al., 1995). The findings from Oostethof and Todorov (2008) revealed that humans evaluate others based on the two fundamental dimensions of dominance and trustworthiness. Dominance is one personality trait which is a factor a leader can use to gain influence within a group (Anderson & Kilduff, 2009). Luhmann (2000) states that dominance and power are used in communication to convince others to accept decisions and follow someone's ideas which is an important criterion for effective leaders. An indicator for a leader's perceived dominance and influence within a group is their habit of object manipulation, the degree to which they touche objects that stand in no relevance to the current situation or work (Maricchiolo et al., 2011). Part of this research will try to determine if the dimension of dominance can be linked to trust by comparing leaders who express dominant nonverbal behavior in the form of object manipulation with the trust they receive from their followers. Do leaders who appear to be more dominant through is nonverbal behavior perceived as more trustworthy by their followers? The following hypothesis is proposed to test if dominant leaders appear more dominant and capable to their followers by expressing object touch behavior and therefore appears more trust worthy:

H4: Leaders who use object touch more frequently are more likely to receive more cognitive and affective trust from their followers.

Verbal behavior and leadership style

A frequent use of, not only eye contact, smiles and head nods, but also hand gestures have shown to be a positive influencing factor that individuals use to evaluate each other and have a positive impact on the perceived capabilities of one another (Hall et al., 2005). A positive opinion about others' capability and a task oriented mindset are important factors when a group of individuals strives towards the same goal to solve a problem. Multiple verbal facets are traditionally related to effective leadership such as planning, correcting, information sharing, directing, planning and scheduling of processes are one of the basic task-oriented behaviors to drive meetings and manage resources (Newitt, 2009; Hannah et al., 2014; Mumford& Fried, 2014; Burke *et al*., 2006; Howell & Avolio, 1993). It has also stated before that handing others an explicit explanation of their task through information sharing will lead to greater task productivity than a vague task description (Bass, 1990; DeRueet al., 2011). Information sharing in team settings can generally be defined as stating facts (Greenhalgh & Chapman, 1998). Providing others with detailed guidance for specific tasks falls under the category of directing (House, 1996). Altogether, task-oriented behavior will be defined as a sum of correcting, delegating, planning of the current meeting and information sharing behaviors. In addition, verifying of facts and voiced opinions on the organizations long-term strategy are deemed to be an important part of task-oriented behavior and will be added to the definition. The following hypothesis is proposed to test the relationship between task-oriented verbal behavior and transactional leadership style:

H5a: Leaders who use task-oriented verbal behavior more frequently are more likely to be perceived as a transactional leader by their followers.

The relation of task-oriented behavior also be tested on its influence on transformational leadership style to see if this verbal indicator is leadership style specific. Therefore the following relation relationship between task-oriented behavior and transformational leadership is proposed:

H5b: Leaders who use task-oriented verbal behavior more frequently are more likely to be perceived as a transformational leader by their followers.

Perceived trust can also be stimulated by verbal behavior such as relation oriented behavior which appeals to the personal relationship of leader and follower. Research has shown that teachers who act more caring are perceived as more credible and trustworthy by their students (Teven & Hanson, 2004). This research will try to confirm a similar relationship between leaders and follower in an organizational environment. Relation-oriented behavior is being used as indicator for leader's affection of their followers in this research. Relation-oriented behavior will be defined as the micro behaviors of humor, sharing of personal information which neither contribute directly to the progress if the meeting, attentive listening and positive feedback (Bass & Bass, 2008; Keyton & Beck, 2009). The following hypothesis is proposed to determine if leaders who engage in relation-oriented behavior receive more perceived trust by their followers:

H6: Leaders who display relation-oriented behavior more frequently are more likely to receive more cognitive and affective trust from their followers.

Leader's concurrent use of verbal and nonverbal behavior

Nonverbal and verbal communications are defined as two separate entities, yet they often occur at the same time. It is therefore interest to test if the above proposed relations are being influenced by leader's simultaneously use of nonverbal and verbal behavior. Both, a leader's use of hand gestures as a nonverbal behavior and task-oriented verbal behavior will be tested individually in their relations to transactional and transformational leadership style. Henceforth simultaneously occurrence of nonverbal and verbal behavior should lead to an effect on leadership style which is stronger than each behavior on its own. The following hypotheses are proposed to test the relation between the nonverbal behavior of hand gestures in combination with task-oriented verbal behavior and transactional and transformational leadership style:

H7a: Leaders who use more hand gestures in combination with task-oriented are more likely to be perceived as a transactional leader by their followers.

H7b: Leaders who use more hand gestures in combination with task-oriented behavior are more likely to be perceived as a transformational leader by their followers.

Followers' cognitive and affective trust in their leader is proposed to be facilitated by a leader's nonverbal object touch behavior and relation-oriented verbal behavior. The perceived influence of an individual in a group can be facilitated by the nonverbal behavior of object manipulation (Maricchiolo et al. 2011). However, the research of Maricchiolo et al. (2011) concluded that the object manipulation resulted in a higher score for perceived influence when the verbal dominance of the speaker is low. Individuals who engage more in relation-oriented behavior appear more credible and trustworthy than those that focus less on relation-oriented behavior (Teven & Hanson, 2004). Both aspects, object manipulation and relation-oriented behavior are deemed to facilitate followers perceived trust in their leader. The following hypothesis will test if leaders can gain influence in the form of trust from their followers through object manipulation in combination with relation-oriented behavior:

H8: Leaders who use object touch more frequently while displaying relation-oriented behavior are more likely to receive more cognitive and affective trust from their followers.

The final model includes all variables with their expected relationships can be seen in figure 1. Hand gestures and task-oriented behavior are expected to facilitate transactional leadership style which relates to cognitive and affective trust. Furthermore, follower perceptions of cognitive and affective trust in their leader are also expected to be influenced by leader's frequency and duration of self touch, object touch and relation-oriented behavior during meetings.

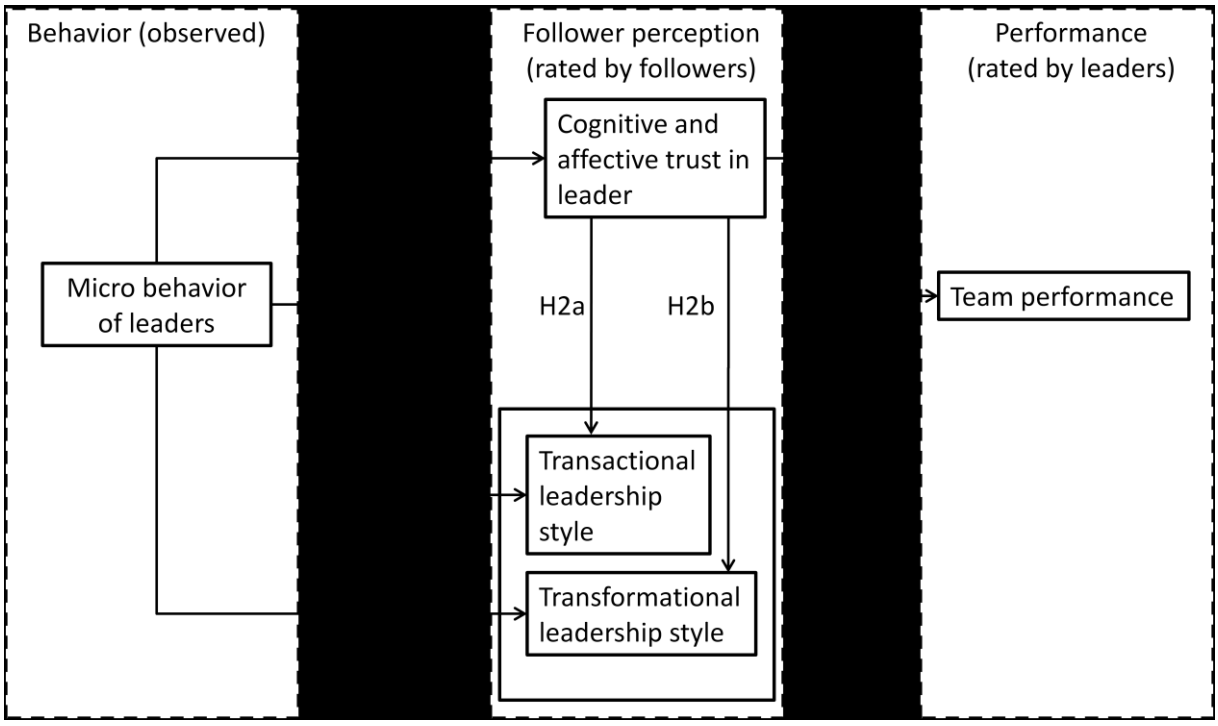

Figure 1: Model of expected relationships between verbal and nonverbal leader behavior, follower perceptions of trust in their leader, leadership style and team performance

Method

Design

Multiple sources were used to gather the data for the research. Leaders in periodically held staff meetings were filmed to analyze and code their nonverbal behavior. The leaders and their followers were asked to fill out a survey right after the meeting to evaluate the leader and the meeting, including variables such as followers cognitive and affective trust in their leader, pro-active behavior of the followers, team information sharing and goal orientated leadership style. Furthermore, team performance was evaluated by an individual expert. A pre-selected coding scheme was used to code the leader's nonverbal behavior. Both, the coded nonverbal behavior and the results from the survey were linked together to draw conclusion regarding the influence of the leader's nonverbal behavior. Surveys data was not available for every leader, thus the sample varies sometimes from 44 to 41 as seen in the descriptive statistics.

Sample

The sample size consists of 44 videos of periodically held team meetings and focuses on their corresponding team leaders. All videos were taken in one organization in the Netherlands.

The meetings were coded in their full length and had an average length of 1 hour and 30 minutes. The shortest video has a length of 38 minutes and the longest reaches a length of 2 hours and 32 minutes. A total of 541 surveys were filled out by leaders and followers. 36 surveys had to be removed because they were filled out less than 50% and were deemed unusable for the study. Another 12 were removed due to straight lining; all answers were the same and it was obvious that they were not properly filled in. Lastly, 6 more were removed because the participant was not a normal member of the recorded team and only participated in this specific meeting. Ultimately, a total of 484 surveys were used for the study. 42 of these surveys were filled put by leaders and 439 by their followers. Leaders had an average age of 50.45, ranging from 27 as the youngest leader to 64 as the oldest. Ten of the recorded leaders were female and 35 male, with a ratio of 77.8% male to female. Followers had an average age of 49.53 ranging from 19 to 65. Gender distribution for the follower has a ratio of 67.4 with 286 male and 143 female respondents.

Measures

Team performance. Team performance ($\alpha = .825$) was measured based on five questions regarding the followers capabilities and performance. These questions about the team performance were filled out by the leader. An example item from the list is degree to which employees develop new solutions (Subramaniam & Youndt, 2005). The survey followed a Likert scale (Likert, 1932) with a values ranging from one to seven. A second measure of team performance was used to compare the reliability of the variable. Additionally to leaders rating their followers' team performance, an expert was rating the team performance as well. Questions were directed at followers work quality and numbers of mistakes and measured in a 1 to 10 scale, with 1 representing a low performance on a certain criterion and 10 meaning a high score on a performance measurement. These criterion consisted of questions such as the standard on which the team operates and the amount of mistakes that they make. Both measurements were used for the correlation analysis to determine if the ratings of leaders and expert varied ($r(44) = .17$, $p > .05$).

Cognitive and affective trust in the leader. Six questions assessed the followers cognitive trust in their leaders ($\alpha = .92$). One example item is the degree to which followers believe that their leader approaches their work with professionalism and dedication (McAllister, 1995). Followers affective trust in their leader was measured with a subscale of

five items (α = .87) with questions such as the degree to which followers feel that they can freely share their ideas and talk about difficulties. Jointly these question asses the level to which followers feel comfortable to share their expectations, feelings and ideas (McAllister, 1995). The interclass correlation coefficients for cognitive trust were .17 for ICC1 and .76 for ICC2. Affective trust had an ICC1 of .12 and an ICC2 of .65. ICC values for cognitive trust exceeded the threshold of .7 and ended in the *good* area of reliability. Affective trusts ICC was with .65 slightly below the threshold which puts it in the area of moderate reliability (Koo & Li, 2016; Lance, Butts, & Michels, 2006)

Leadership Style. The leadership style measurement in this research was transactional and transformational leadership style (Bass & Avolio, 1995). Transactional and transformational leadership was measured by a subscale of 28 questions based on the MLQ survey to identify if the leaders tends to be more transactional oriented and/or transformational (Bass & Avolio, 1995). The surveys were structured in the form of Likert scales ranging from one to seven (Likert, 1932). The value seven meant that a participant completely agrees to the statement in the survey while the other end of the scale, one, meant that the completely disagrees. The measurement for transformational leadership reached a Cronbach's alpha of .90 and transactional Cronbach's alpha reached a value of .81. Team internal level of agreeableness was determined by accessing the interclass correlation coefficients (ICC1 and ICC2). Transformational leadership style had an ICC1 of .10 and an ICC2 of .72. Transactional leadership had an ICC1 of .15 and an ICC2 of .73. Both ICC went above the threshold of .7 and can be considered to have good reliability (Koo & Li, 2016; Lance, Butts, & Michels, 2006).

Leader micro-behavior. The coding of the video files was done with Noldus Observer XT. This software was designed for collecting, managing, analyzing and presenting observational data (Noldus et al., 2000). Noldus XT makes it possible to load multiple videos at once and to play them at the same time. This made it possible to load videos from different angles of the meetings to analyze as many nonverbal behaviors of the leader's as possible and avoid parallax errors while evaluating them. Parallax errors occur when the perceived angle of a gesture is misinterpreted by a shifted camera view (e.g. misreading the time by looking at a watch from the side).

Nonverbal behaviors were assigned to a specific key on the computer keyboard and were used to define the beginning and ending of a behavior while the video is being played in

the form of an event in an event log. The final event log covered all nonverbal behaviors, including their frequencies and their duration. Two coders were coding the nonverbal behavior of the leader separately and discussed their results to form one coding log to gain inter-coder reliability. A post discussion with the project's supervisor resulted in the final event log for the coding. Video coding was used to capture every nonverbal behavior of the leaders. The rewinding and slowing down of videos allowed for a more accurate coding than fast paced real-life observations. Moreover, two coders were coding the same nonverbal behavior for inter coder-reliability. Training, consisting of sample videos, was used so that both coders had a similar understanding and agreement of the displayed nonverbal behavior in the form of hand gestures.

The agreement between both coders was trained to reach an average Kappa level of at least .7 (Hayes & Krippendorff, 2007); before the actual coding of this studies videos began. Kappa from the actual coding reached from .53 to .98 with an average of .76. The average Kappa was in the "fair" section of the evaluation scale (Landis & Koch, 1977). Discussions between both coders and mutual agreement of the observed behavior lead to the development of the golden file for each video which represented the final coding. The golden file had an agreement of 100% and had therefore reached the excellent section of the evaluation scale (Landis & Koch, 1977).

All information from the survey that was relevant for this research was evaluated by the leader and the followers of a meeting. The nonverbal behavior, expressed by the leader is analyzed by coding leader's behaviors in the video files. Hand gesture are categorized in five mutual-exclusive gestures with a default of no gestures, palms up, palm downwards, mixed palms. Additionally, three touch gestures will be coded; object touch, self touch head and self touch body. The coding scheme is divided into three touch behaviors which were coded from the beginning of their occurrence till they ended each time. These touch behaviors are self-touch head, object-touch and self-touch body. The other variables were measured by leader and followers through a survey. Leaders evaluated their followers' team performance while follower evaluated their leader's leadership style and trust. Making use of multiple sources for the data collection decreased the common source bias.

Hand gestures were measured by summating the separate behaviors of upwards, downwards/inwards and mixed hand gesture together. Each of these behaviors were measured in their frequency and their duration in seconds with Noldus Observer XT and converted into SPSS. Object manipulation conducted by leaders were measured with Noldus Observer XT

and converted into SPSS. Object touch data was measured in frequency of their occurrence and their duration in seconds.

Task-oriented behavior refers to the content of a leader's message that contains information that are relevant for work related subjects such as distribution of tasks and sharing of task related information, The verbal variable for task-related behavior is composed of multiple subcategories to operationalize their measurement. Starting with correcting others during meetings, delegating of tasks or work, verification of tasks and assignments, remarks regarding the planning or execution of the current meeting, sharing of information regarding the topic at hand and voiced opinions about the organizations long term plans and strategies (Newitt, 2009; Hannah et al., 2014; Mumford & Fried, 2014; Burke *et al*., 2006; Howell & Avolio, 1993; Bass, 1990; DeRueet al., 2011; Greenhalgh & Chapman, 1998; House, 1996).

Relation-oriented behavior relates to the engagement of a conversation which is not directly linked to the task at hand or does not contribute anything towards the goal of the current meeting like asking about individuals well being or making a humorous remark. The variable was measured by a person giving positive feedback, sharing personal information, paying selective attention and expressing humor (Bass & Bass, 2008; Keyton & Beck, 2009).

The combinations of nonverbal and verbal behavior will be tested for the duration. The existing data set for verbal behavior did not make it possible to combine it with the nonverbal data set in such a way that frequency of simultaneous occurring behaviors could be measured. The durations on the other hand could be combined with each other, thus that a comparison will be possible. All observed behaviors were standardized for the analysis to compensate for the difference in video length. The standardization was done in the form of a standard score (z-score). Possible bias from the standardization in the form of a magnitude change in the regression coefficients will be picked up in the discussion (Kutner et al. 2004). A complete overview (Table 2 in appendix A) sums up all dependent and independent variables. Each variable is represented with a short example of how each variable is measured.

Video-Observation Software

The coding of the touch behavior and the hand gestures were coded with the Noldus Observer Software. Noldus Observer XT is commonly used software for collecting, analyzing, managing and presenting observational data (Noldus, Trienes, Hendriksen, Jansen, & Jansen, 2000). The software makes it possible to load multiple videos at the same time, thus allowing to observe the participant from different angles. Two individual coders rated the nonverbal behavior of the leader separately after training sessions. The training sessions were

used to train both coders to the same level and establish a common agreement of the seen gestures and behaviors of leaders. Inter-coder reliability had reached an agreement level which represented a Kappa of .8 before the actual coding of the videos begun to raise reliability (Hayes & Krippendorff, 2007). Inter-coder reliability made it possible to minimize biases compared to a single user and contributed to the reliability of the codings.

Data Analysis

The event log of the Noldus observation software was extracted into SPSS files to test the above stated hypotheses. In the first step, a correlation analysis between all variables was conducted to test for possible inter-relations. A linear relationship between the frequency of the leaders' nonverbal behavior in the form of hand gestures and their influence on their followers was expected. A linear regression was used to test the relationship between the independent variables of frequency of gestures, self-touch, object-touch, upward oriented palms and downward/inward oriented palms and the dependent variables of leadership style and cognitive and affective trust. All direct relationships will be tested separately based on the frequency and duration of leaders expressed nonverbal behavior. It could be the case that a leader has a habit of using only very few gestures, but these gestures are being used over an extended period of time; henceforth leaving a stronger impression. The same could be true for the other way around; a leader might use an intensive amount of gestures which only last for a few moments. The simultaneous occurrence of verbal and nonverbal behavior will be tested based on their duration were it was possible to measure the time when both happened at the same time. Additionally, an analysis will be conducted to compare the most effective teams with the least effective teams.

Teams are divided into two categories depending on their score in team performance. 15 leaders and their teams are picked for each category. Both categories will be compared to see if there are any differences in the observed micro behavior of leaders. Additionally, leaders will be ranked based on their score on transformational and transactional leadership style to determine behavior that is atypical for certain leadership styles.

Results

Descriptive statistics and correlations

A total of 57.31 hours of periodically held staff meetings was coded. Nonverbal behavior was observed a total of 17,980 times and verbal behavior was observed a total of 7,665 times. A detailed table with the descriptive statistics can be found in table 3 in appendix A.

The first conducted test for correlation tested for any correlation without grouping the observed behavior together. Hand gestures were tested in their separate form (e.g. upwards, downwards/inwards, mixed hand gestures). The same was done for behavior that fall under the category of task and relation oriented behavior. (see **table 22-24** in appendix A). An interesting finding was that correcting a follower had a negative correlation to transactional leadership and trust. Both types of trust, cognitive and affective, show a negative sign, but only cognitive has been listed as significant. Additionally, the duration of verifying facts and information had a negative correlation on transactional leadership as well. None of the other verbal or any of the nonverbal behaviors had a correlation to the depended variables. No major correlation was found in the majority of the independent variables as standalone items, thus that analysis continued by grouping micro behavior under the variables of hand gestures, task-oriented and relation oriented behavior.

Table 4 and 5 in appendix A show the correlation between dependent and independent variables for verbal and nonverbal frequencies and durations. As expected, cognitive trust is statistically significant related to affective trust ($r(44) = .89$, $p < .01$). Transformational leadership style has a strong relation to both cognitive ($r(43) = .86$, $p < .01$) and affective trust ($r(43) = .85$, $p < .01$). A more moderate, yet still statistical significant correlation, can be seen for transactional leaderships style and cognitive ($r(43) = .62$, $p < .01$) and affective trust ($r(43) = .52$, $p < .01$). Furthermore, both leadership styles correlate with each other at a statistically significant level ($r(43) = .65$, $p < .01$). Hand gestures have shown a moderate correlation to object touch ($r(43) = .39$, $p < .01$)for their frequency measure. The frequency of task-oriented behavior shows a negative correlation to relation-oriented behavior ($r(44) = -.37$, $p < .05$). The measurements in duration did not reveal any other correlations. Lastly, the two different ratings for team performance do not correlate with each other on a significant level. It must be concluded that they each measure a different aspect of team performance to some degree. However, neither of the two ratings for team performance show a correlation to the other variables. It was necessary to decide with measure for team performance would be used for the rest of the analysis. The decision fell on leader rated team performance for the following reason that leaders know their followers better and longer than an external viewer and will be able to rate more accurately. It may be the case that their ratings a slightly biased to make

their teams and themselves look better, but that could not be confirmed in the scope of this research and it will be assumed that their ratings are precise.

Main Regression analyses

Followers team performance and trust in their leader

The linear regression for leaders perceived cognitive and affective trust and their followers team performance reveals an explained variance of under .00 between the predictors for cognitive trust ($F(1,43) = .13$, $p > .05$)) and a explained variance of .07 for affective trust ($F(1,43) = .594$, $p > .05$)). H1 proposed that leaders' perceived trust would stimulate their followers' team performance. **Table 6** (appendix A) shows that this hypothesis could not be supported for cognitive trust ($\beta = .06$, $p = .72 > .05$) and affective trust ($\beta = .12$, $p = .45 > .05$) and had to be rejected for self touch measured in duration.

The relation between followers trust in leadership and perceptions of leadership

The linear regression for leaders perceived cognitive and affective trust and their perceived transformational leadership style reveals an explained variance of .73 between the predictors for cognitive trust ($F(1,43) = 113.05$, $p < .01$)) and a explained variance of .72 for affective trust ($F(1,43) = 106.92$, $p < .001$)). H2a proposed that leaders perceived transformational leadership style is facilitated by the cognitive and affective trust which he received from their followers. **Table 7** (appendix A) shows that this hypothesis could be supported for cognitive trust ($\beta = .86$, $p = < .001$) and affective trust ($\beta = .85$, $p = < .01$).

The linear regression for leaders perceived cognitive and affective trust and their perceived transactional leadership style reveals an explained variance of .388 between the predictors for cognitive trust ($F(1,43) = 25.96$, $p < .01$)) and a explained variance of .27 for affective trust ($F(1,43) = 14.91$, $p < .01$)). H2b proposed that leader's perceived transactional leadership style is facilitated by the cognitive and affective trust which he received from their followers. Table 8 (appendix A) shows that this hypothesis could be supported for cognitive trust ($\beta = .62$, $p = < .01$) and affective trust ($\beta = .52$, $p = < .01$).

Nonverbal leadership behavior, leadership style and followers trust in their leader

The linear regression for leaders use of hand gestures and their perceived transactional leadership style reveal an explained variance of .012 between the predictors for hand gestures

measured in frequency ($F(1,43) = .47$, $p > .05$)) and a explained variance of under .00 for hand gestures measure in duration ($F(1,43) = .10$, $p > .05$)). H3a proposed that leader's use of hand gestures is related to their perceived transactional leadership style. **Table 9** (appendix A) shows that this hypothesis could not be supported for hand gestures measured in frequency ($\beta = .11$, $p = .5 > .05$) and duration ($\beta = .05$, $p = .75 > .05$) and had to be rejected.

The linear regression for leaders use of hand gestures and their perceived transactional leadership style reveal an explained variance of under .00 between the predictors for hand gestures measured in frequency ($F(1,43) = .02$, $p > .05$)) and a explained variance of under .00for hand gestures measure in duration ($F(1,43) = .12$, $p > .05$)). H3a proposed that leader's use of hand gestures is related to their perceived transactional leadership style. **Table 10** (appendix A) shows that this hypothesis could not be supported for hand gestures measured in frequency ($\beta = -.13$, $p = .73 > .05$) and duration ($\beta = -.06$, $p = .88 > .05$) and had to be rejected.

Regression results for leaders expressed object touch behavior measured in frequency and their followers cognitive and affective trust in him reveals an explained variance of .01 between the predictors for cognitive ($F(1,43) = .52$, $p > .05$)) and a explained variance of .04 for affective trust ($F(1,43) = 1.72$, $p > .05$)). Leaders use of object touch behavior measured in duration shows an explained variance of .015 between the predictors for cognitive ($F(1,43) = .63$, $p > .05$)) and a explained variance of .04 for affective trust ($F(1,43) = 1.24$, $p > .05$)). The proposed relationship between expressed object touch behavior and their followers level of cognitive and affective trust in their leader in H4 could neither be supported for cognitive trust ($\beta = -.11$, $p = .47 > .05$) and affective trust ($\beta = -.2$, $p = .2 > .05$) for hand gestures measured in frequency nor for cognitive trust ($\beta = -.12$, $p = .43 > .05$) and affective trust ($\beta = -.17$, $p = .27 > .05$) when measured in duration (**table 11** in appendix A).

The linear regression for leaders task-oriented verbal behavior and their perceived transactional leadership style reveal an explained variance of under .00 between the predictors for task-oriented behavior measured in frequency ($F(1,43) = .08$, $p > .05$)) and a explained variance of .03 for task-oriented behavior measure in duration ($F(1,43) = 1.46$, $p > .05$)). H5a proposed that leader's task-oriented verbal behavior is related to their perceived transactional leadership style. **Table 12** (appendix A) shows that this hypothesis could not be supported for task-oriented behavior measured in frequency ($\beta = .04$, $p = .78 > .05$) and duration ($\beta = -.19$, $p = .23 > .05$) and had to be rejected.

The linear regression for leaders task-oriented verbal behavior and their perceived transformational leadership style reveal an explained variance of under .00 between the

predictors for task-oriented behavior measured in frequency ($F(1,43) = .4$, $p > .05$)) and an explained variance of under .00 for task-oriented behavior measure in duration ($F(1,43) = .09$, $p > .05$)). H5a proposed that leader's task-oriented verbal behavior is related to their perceived transformational leadership style. **Table 13** (appendix A) shows that this hypothesis could not be supported for task-oriented behavior measured in frequency ($\beta = -.1$, $p = .53 > .05$) and duration ($\beta = .05$, $p = .76 > .05$) and had to be rejected.

Regression results for leaders displayed relation-oriented behavior measured in frequency and their followers cognitive and affective trust in him reveals an explained variance of .01 between the predictors for cognitive ($F(1,43) = .48$, $p > .05$)) and a explained variance of .016 for affective trust ($F(1,43) = .67$, $p > .05$)). Leaders displayed relation-oriented behavior measured in duration shows an explained variance of under. 00 between the predictors for cognitive ($F(1,43) = .04$, $p > .05$)) and a explained variance of under .00 for affective trust ($F(1,43) = 83.99$, $p > .05$)). The proposed relationship between expressed relation-oriented behavior and their followers level of cognitive and affective trust in their leader in H6 could neither be supported for cognitive trust ($\beta = .06$, $p = .49 > .05$) and affective trust ($\beta = .06$, $p = .42 > .05$) for relation-oriented behavior measured in frequency nor for cognitive trust ($\beta = -.02$, $p = .85 > .05$) and affective trust ($\beta = .00$, $p = .99 > .05$) when measured in duration (**table 14** in appendix A).

Leaders concurrent use of verbal and nonverbal behavior

The linear regression for use of hand gestures in combination with task-oriented behavior and their perceived transactional leadership style reveal an explained variance of under .00 between the predictors ($F(1,43) = .02$, $p > .05$)). H7a proposed that leader's use of hand gestures in combination with task-oriented behavior is related to their perceived transactional leadership style. **Table 15** (appendix A) shows that this hypothesis could not be supported for hand gestures in combination with task-oriented behavior ($\beta = .02$, $p = .90 > .05$) and had to be rejected.

The linear regression for use of hand gestures in combination with task-oriented behavior and their perceived transformational leadership style reveal an explained variance of under .00 between the predictors ($F(1,43) = 1$, $p > .05$). H7a proposed that leader's use of hand gestures in combination with task-oriented behavior is related to their perceived transformational leadership style. **Table 16** (appendix A) shows that this hypothesis could not be supported for hand gestures in combination with task-oriented behavior ($\beta = -.15$, $p = .32 > .05$) and had to be rejected.

The linear regression for use of object touch in combination with relation-oriented behavior and their followers cognitive and affective trust in him reveal an explained variance of under .00 between the predictors for cognitive ($F(1,43) = .79$, $p > .05$)) and affective trust $F(1,43) = 1.87$, $p > .05$)). H8 proposed that leader's displayed object touch in combination with relation-oriented behavior is related to their followers' cognitive and affective trust in him. **Table 17** (appendix A) shows that this hypothesis could not be supported for hand gestures in combination with task-oriented behavior for cognitive ($\beta = -.07$, $p = .38 > .05$) and affective trust ($\beta = -.09$, $p = .18 > .05$) and had to be rejected.

Comparison analysis

The last analysis consists of the comparison of the 15 most effective and the 15 least effective teams rated on team performance. It has to be noted that the variables which originated from the observation were standardized to compensate for a variation in observation length and make direct comparison possible. Negative values for mean values are the result. ANOVA tests are used to determine significant differences between groups. The comparison of the best and poorer performing teams showed no significant difference in followers trust in their leader, leader's leadership style or their expressed micro behavior (**table 18** in appendix A).

Comparing the 15 leaders who scored the highest on transactional leadership with the 15 leader who scored lowest on the leadership style revealed a difference in cognitive and affective trust (**table 19** in the appendix A). Leaders with the best scores in transactional leadership receive more cognitive and affective trust than leaders with poorer scores in transactional leadership style.

The comparison based on transformational leadership style revealed that similar result as the comparison for transactional leadership. Leader who scored high on transformational leadership style receive more cognitive and affective trust from their followers than leaders who scored low on transformational leaderships style (**Table 20** in appendix A). **Table 21** sums up all tested hypothesis as an overview of the analysis results and shows that the hypothesis regarding task-oriented behavior and a leaders tendency for transactional leadership style were confirmed.

Discussion

The question of how leaders expressed nonverbal and verbal behavior influences their followers' perceived trust in them, leaders perceived leadership style and their teams' performance could only be answered to some degree. Most direct effects of single verbal or nonverbal behavior could not be confirmed, yet it was possible to draw conclusions on the results. This study used two sources to collect data for its analysis. Video observation made it possible to rate the leader's nonverbal behavior and compare these findings with the result from the survey. A correlation analysis revealed that cognitive and affective trust is strongly correlated with each other which align with the research of Morrow et al. (2004) in which they state that both dimensions of trust are not necessarily independent from each other and are not mutually exclusive. The results also indicated that both leadership styles, transformational and transactional, are strongly linked to cognitive and affective trust. Transformational even more so than transactional. It is not unsurprising that these leadership styles require a trustful relationship between leaders and followers. Especially the transformational leadership style, in which goal achievement and follower motivation take up a fundamental role (Bass, 1990). Followers need to trust their leader to be willing to come forth with new solutions.

Furthermore, leader's who displayed more hand gestures during the meetings also showed more object touch behaviors, which can be explained by the fact that leaders had the tendency to keep on using hand gestures even though they had an object, like a pen, in their hand. It was also shown that a leader correcting a follower, which is a verbal behavior, had a negative influence on the leaders perceived transactional leadership style. Correcting behavior is commonly accepted as part of task-oriented behavior (Newitt, 2009; Hannah et al., 2014; Mumford & Fried, 2014; Burke *et al*., 2006; Howell & Avolio, 1993; Bass, 1990; DeRueet al., 2011; Greenhalgh & Chapman, 1998; House, 1996). Yet it does appear to be the case that being corrected diminishes follower's opinion of their leaders perceived transactional leadership style. Having a look at the relationship and importance of trust and leadership style might explain the negative relation of correcting and transactional leadership style. Being correcting is much likely perceived as something negative by followers and could therefore be battering away at the trust relationship between leader and follower. However, in this case the negative relation should be visible for transformational leadership style as well which is not the case.

Future research should be advised to rethink the nature of task-oriented behavior and differentiate between behaviors which are perceived as positive and negative by followers. Dividing task-oriented behavior and positive and negative perceived behavior will make it

possible to explain while leaders overall relation-oriented behavior is perceived differently even though they show the same frequency or duration of relation-oriented behavior than others. The issue is that the commonly used concept of relation-oriented behavior is a mix of positive and negative perceived micro behaviors which shift the perception of followers depending on which aspect leader's focus.

The regressions for H1 showed that the relation between a trusting relationship between followers and their leader resulting in a better team performance could not be confirmed. Followers trust in their leader alone does not suffice as an indicator to predict followers' team performance. One explanation for this is that trust does not have a direct influence on team performance, but rather influences how leaders and their leadership styles are perceived by followers. Trustful and enthusiastic leaders will motivate and excite their followers which in turn facilities team performance (Peterson, 2007).

The hypotheses 2a and 2b could be confirmed. Trust plays an important role for transactional and transformational leadership. Transformational leadership style had an even stronger relation to trust than transactional leadership which confirms the findings of Bass (1990). Even though trust is being thought of as less decisive for transactional leadership, it has been shown that trust is an influence factor aside from the already known contingent reward theory (Bass & Avolio, 1995).

Furthermore, the results indicated that nonverbal leader behavior did not predict either follower perceptions of leadership style or trust. This runs counter to earlier findings by Giffords' (1994) and Ekmans' (1976) who found that the usage of open gestures over a resting body language and pointing hand gestures speak for powerful and confident individuals, yet none of these aspects appear to be crucial factors to differ between transformational or transactional leadership style. Hand gestures alone are not enough to perceive an individual as a confident individual. The body language necessary to perceive someone as confident includes other variables such as posture and facial expressions (Lee et al., 2013). Evaluating and explaining leader's level of trustworthiness or leadership style is not possible based on singly selected behavior. It is necessary to interpret the overall verbal and nonverbal behavior to be able to conclusively evaluate leader's perceived trust and leadership style.

None of the verbal behaviors could be proven to be indicators of either leadership style or trust either. Task-oriented behavior is seen as one of the core components of transactional leadership style in which actions such as delegating tasks and information sharing are main driver of meetings (Newitt, 2009; Hannah et al., 2014; Mumford& Fried, 2014; Burke *et al*.,

2006; Howell & Avolio, 1993; Bass, 1990; DeRueet al., 2011; House, 1996). The findings could not confirm with this relation and determine that task-oriented behavior is typical for transactional leadership style. Appealing to the trust between leader and follower with relation-oriented verbal behavior could also not be confirmed. Even tough, relation-oriented behavior consisted of factors such as humor or the sharing of personal information as stated by Bass and Bass (2008); Keyton and Beck (2009), no influence on followers trust in their leader could be concluded in this research.

The combination of simultaneously expressed nonverbal and verbal behavior did not show in any statistical significant result either. Neither the use of hand gestures, task-related verbal behavior or both in combination are enough to have had an influence on leader's perceived leadership style. The last of hypothesis had its focus on leaders object touch behavior in combination with relation-oriented behavior and their influence on cognitive and affective trust. Relation-oriented behavior is one way to build a trustful relationship between individuals. Humor during meetings and non-task related conversations such as talking about private matters or another's well-being are typical aspects of relation-oriented behavior (Anderson & Kilduff, 2009; Bass & Bass, 2008; Keyton & Beck, 2009). Maricchiolo et al. (2011) suggested that object touch as nonverbal behavior, facilitating a leaders standing in the group, does not need to stand in any relation to verbal communication to make an impact. H8 focused on the simultaneous occurrence of object touch and relation-oriented behaviors influence on cognitive and affective trust. Both regressions resulted in a statistically non-significant outcome. The combination of object touch together with relation-oriented behavior did not show any additional results and was statistically non-significant. Even though the point was to find evidence that the addition of verbal aspects (relation-oriented behavior) to object touch does not have any significant change according to literature. It is difficult to argue that it was proven that the verbal part does not change the relation between object touch and cognitive and affective trust after these two had already shown a statistically non-significant relation.

Splitting the sample into categories of high and low scorings on team performance and leadership style revealed that no behavior micro behavior was atypical for the better or poorer performing teams. Furthermore, no micro behavior was significantly different for either transactional or transformational leadership style. It is therefore not possible to determine if certain micro behaviors are indeed more atypical for a specific leadership style. What could be determined by the comparison is that cognitive and affective trust were significantly difference for both groups. Cognitive and affective trust is higher for leaders who score higher

on the corresponding leadership style than leaders who score lower on it. These findings confirm the results of the regressions conducted under H2 and show once more that trust is indeed a factor influencing the perception of leadership style.

In summary, only the relation between followers trust in their leader and transactional and transformational leadership style could be confirmed with the regressions and only the comparison of groups' revealed differences in micro behavior. All other regressions revealed an extremely small significance level which questions the underlying literature used to formulate the hypotheses. Not the literary integrity itself is questioned but the simplicity in which the relation between nonverbal communication and its outcome is described. Human behavior is too complex to describe relation with nonverbal and verbal relations. Future research should take a step back and look at the broader picture to formulate more complex models to describe and explain linkages between nonverbal and verbal human behavior. Nonverbal behavior of others is constantly observed and evaluated on an unconscious level (Knapp et al., 2013). They way individuals evaluate one another is influence by a whole set of behaviors, ranging from verbal to nonverbal. Trying to explain an outcome such as followers trust in their leader by settling on a single verbal or nonverbal behavior of leaders means that all other behaviors are neglected for the analysis. It is necessary to incorporate more than one behavior to explain human behavior and perception. Future research should not only focus on separate nonverbal behavior areas like hand gestures, facial expression and body posture, but rather combine single behaviors from all areas into behavior clusters and patterns to explain outcomes, since the perceived opinions of others is a summation of an individual's entire behavior and not only of individual behaviors.

Limitations

This research makes use of multiple sources to collect data to reduce bias. However, each source comes with its own set of possible bias. One of the most common biase is the observation bias. Leaders could be expected to act different from their normal behavior due to the knowledge that they are being observed and filmed. However, Alterations in behavior during video tape observation only occurs within the first minutes of an observation after which the observed individuals fall back into their normal behavior patterns (Wiemann, 2006). It is also possible that their behavior was altered by the fact that they knew that their followers were going to fill out a survey regrinding the meeting after it had ended. Cronbach alpha levels measure the collective level of agreeableness of all groups and all score in the range from acceptable ($0.7 \leq \alpha < 0.8$) to good ($0.8 \leq \alpha < 0.9$) (DeVellis, 2012). The interclass

correlation coefficients fall slightly short to reach the threshold of .8, but are still within the moderate range (Lance et al., 2006). Bias from the video coding was reduced by having two coders train with the coding scheme to gain a common understanding of leaders expressed nonverbal behavior. Each coder rated the video separately which resulted in an agreement of 74.44%. All further disagreements where solved during discussion meetings to finalize the video coding.

Another possible bias regarding the observation method surfaced during the coding and questions the reliability of the groups meeting set up. Nonverbal and verbal behavior of leader was coded accurately whenever it occurred, but the surveys question the followers' perceived impression of their leader and may vary from actual facts. For example, hand gestures were, to a part, composed of downwards gestures which occur when leaders are pointing their hand towards an individual person. That individual will subconsciously fully grasp that gesture while other members of the meeting may not even notice the gesture since it does not involve them. Future research should control for this by extending the follower survey with questions regarding the leaders' visibility to the follower during the meetings. Followers can also be asked to rate the intensity and frequency of their leaders nonverbal or verbal behavior. Comparing followers' opinion about their leaders' behavior intensity serves as another control variable.

Same is possible for self touch or object touch gestures, not all meeting rooms were optimal to such a degree that the leaders were visible from all sides by their followers and gestures were not observed by followers. This means that it is possible that the influences of some behaviors were perceived to a smaller degree by followers, because they had an obstructed view of their leader and did not see all their behaviors.

The variation in group size played a huge role in this, the larger the group and the room; the less obvious did the leaders gestures became to their followers. Test environment of the observation should, at least to some degree, be standardized for future research to gain a more objective of followers' perception of their leader. Team size should vary as little as possible and the seating of leader and follower in the room should be taking into account to ensure an unobtrusive view for participants.

Surveys, especially those asking the surveyed to rate another person, come with possible bias. The surveyed might not feel comfortable giving their honest opinion about their supervisor and be afraid of possible back leashes even though the survey is fully anonymously. Standardization of the observations has the possibility to influence regression coefficients to some degree should predictor variables correlate with one another (Kutner et

al., 2004). However, this issue was deemed to be negligible for this study due to the fact that the correlations between (observed) predictors were non-significant and weak for the majority (table 3). Further analysis in the form of regressions showed that the influence of verbal and nonverbal behavior as standalone predictors' minimalistic explained variances to explain models of human behavior. It is therefore concluded that possible correlation bias did not impacted the analysis to a noticeable degree.

Generalizability must also be questioned due to the fact that the study was only conducted within one organization from a single country. Nonverbal behavior is strongly influenced by an individual's cultural background (Tsai et al., 2016). The degree to which leaders smile varies with the values of their nations. Leaders of nations which value positive states and high arousal are more prone to smile than leaders of nations that value low arousal positive states and calm behavior. It is therefore important to be aware of cultural differences when extrapolating the result to other countries.

Future research and practical implications

There are two things that can be taken from this research. First of all followers do not seem to consciously differentiate between cognitive and affective trust. Both aspects of trust are strongly correlated on significance level of $p < .01$. Leaders can make use of this by appealing to the aspect of trust that they are more familiar with or focus training on the aspect in which they can still improve. Leader's perceived empathy has been proven to facilitate followers trust in their leader, showing that the affective trust can be influenced by leader's behavior (Guinalíu & Blasco, 2016). A more general approach, spanning cognitive and affective aspects, was given by Hurley (2006) who states that (1) leader's willingness to take risks, (2) their degree of expresses optimism, (3) leaders influence over others, (4) openness, (5) willingness to express thoughts and feelings and (6) degree to which leaders are concerned over what the boss thinks are all aspects which facilitate trust. Leader may be lacking in the emotional area of trust and therefore score lower on affective trust, but they can make up for it by demonstrating their capabilities as a leader on a proficiently area to make up for their shortage in emotional management. Furthermore it was found that transformational leadership style has stronger correlation with trust (cognitive and affective) than transactional leadership. Organizations can make use of that knowledge when forming project teams and assigning team leaders. Goal oriented and innovative projects should be armed with team leaders who have proven to be well trusted by their followers in the past. Organizations could benefit by training their management, may it be direct supervisors or project leaders, by incorporating

trust building nonverbal behavior into their leading style to influence their teams' performance. Marketing has been applying psychological concepts and theories for a while already to influence customers purchase behavior (Goldfarb & Tucker, 2011). The same applies to politicians who undergo personalized training to work on their body language for public speeches.

Constructs for nonverbal behavior in organizational leadership and its impact has hardly been put to the test and is lacking in studies (Morgeson et al, 2010). Collaboration between different departments requires an extensive amount of communication and the need to share information. That is even truer when the project at hand spans over multiple subjects. For example medicine meets engineering to develop new devices to assist or improve current practices. Members of both divisions are experts in their own field, but need to rely on the input of the other members to formulate ideas to reach a new solution to a problem. Follower's cognitive and affective trust in their leader could already be proven to be a factor to facilitate team information sharing which is a fundamental aspect of comprehensive topics (Dreisibner, 2017). For this reason, I propose that organizations adopt a three step program to improve their team work by placing the right person at the right spot. The first step consists of assessing the tendencies and leader capabilities individuals in management level currently have. Leaders who have been determined to receive more trust from their followers should be chosen whenever a project requires a transformational approach as trust correlates stronger with transformational leadership than it does with transactional leadership. Previous literature has broadly discussed the importance of trust in organizations and determined it to be one of the crucial factors which influence an organizations performance (Guinalíu & Jordán, 2016). A tendency of transformational over transactional leadership is preferred as these leaders are more goal-oriented and have a higher tendency to explore new paths. The Multifactor leadership questionnaire (MLQ) has been proven to be a reliable indicator for individuals' leadership capabilities and should be used in the first step to determine the organizations current human resources (Bass & Avolio, 1995). The second step covers nurturing of the talents that which surfaced in the first step. Additional training to train leadership capabilities is required to fit the organizations image and climate. Some organization may have a more liberal approach for projects which comes with a lot of freedom for all participants while other organization have projects group on a shorter leash with more direct supervision. Depending on the field of work, government regulation may even require the organization to follow specific proceedings to work in that specific work area (e.g. testing of new medicine, chemical products or power plants). In the third and last step, the now trained leaders are

being placed in charge of project groups or teams that the organization considers to be challenging in so far that multiple fields have to be bridged to create a common knowledge pool to formulate a result. Being able to motivate their followers and to create a vision is a fundamentally part of such innovative processes and aids leaders to expedite team performance (Brown, 2008). Organizations adopting this approach will benefit by allocating leaders to projects that fit best with their leadership style. Innovative projects are being guided by leaders who are more transformational and whose enthusiasm motivates their followers to strive towards new solution. Leaders who fall under the transactional leadership style category will shepherd projects that are more limited by regulations and procedures to ensure quality and control.

Conclusion

Literature keeps pointing out how important and influential nonverbal behavior is on how someone is perceived by others. However, it was only possible to confirm the relation between followers trust in their leader and transactional and transformational leadership style in the scope of this research. It was not possible to confirm other single verbal and nonverbal behaviors that serve as influencers on cognitive and affective trust that followers adduce to their leaders. Human behavior exceeds the simple linear relationship of one nonverbal behavior showing an impact on cognitive and affective trust and has to be seen as complex summation of multiple behaviors. One thing that could be confirmed within the scope of this study is the strong correlation between trust in leadership and leadership style. Both leadership styles, transformational and transactional, have shown a statistical significant relation to cognitive and affective trust. The former mentioned leadership style, namely transformational has demonstrated an even stronger correlation to trust than transactional leadership style did. It does seem reasonable that transformational leadership style with its goal oriented structure with a focus on the outcome is stronger related to trust than transactional. New and innovative approaches require a trustful relationship between leader and follower, thus followers can bring in their ideas and speak their mind knowing that their leaders willing to listen to them and back up new ideas. The three step program that has been introduced as a result of this research can help organizations to better allocate their human resources to facilitate team performance and effectively of projects.

Neither hand gestures, object touch, task-oriented or relation-oriented behavior alone or in combination act as clear indicators for trust or an atypical leadership style. At this point, it is suggested to move away from simple models and see a bigger picture. It is necessary for

further research to expand the model with more behaviors to grasp human behavior and determine which factors, in combination, explain the cognitive and affective trust which followers place in their leader. A single verbal or nonverbal behavior is not enough to explain follower's perceived trust in their leader or to draw conclusions about their leadership style. Human behavior is more complex than this. All nonverbal behavior such as hand gestures, body postures and facial expressions together are necessary to explain human behavior. The model becomes even more complex when the verbal aspect of communication is thrown into the mix. Only by combining multiple nonverbal and verbal behaviors together and evaluating a leader's complete behavior will it be possible to accurate draw conclusions about how they are perceived by their followers. The proposition for future research is to include the areas of hand gestures, body postures and facial expressions in combination with verbal behavior for further analysis to determine if a broader view of behaviors will offer a better explanation of human behavior and perception of behavior. It is also be a good idea to dive deeper into literature of psychological studies to build conjunctions between psychological research and business oriented environments.

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Appendix A

Table 1:

Key points of transactional and transformational leadership style

Transactional leadership	Transformational leadership
Process and control oriented	Goal and result oriented
Give and take relationship between leaders and followers. Needs of followers are identified and satisfied by leaders in exchange for their work.	Inspirational motivation: leaders' actions motivate their followers to follow a vision
(1) Contingent reward leadership: followers fulfill conduct their work as obligation for their payment.	Leaders' individualized consideration: Each follower receives attention and personal needs are addressed
(2) management by exception (active): management monitors followers and takes corrective actions to guide work processes	Idealized influence: Followers look up to their leader and strive to follow their example
3) management by exception (passive): Management controls outcomes and quality after goal is reached	Intellectual stimulation: Listening to followers opinions to compel them to develop new ideas

Table 2

Summary of measured variables with example

Category	Variable	Example	Source
Team performance	Team performance (leader rated)	Leader rate their team based on question such as the degree to which followers come up with new solutions for problems (Subramaniam & Youndt, 2005)	Leader rate their followers
	Team performance	Expert rates the team performance based criteria such as on the quality of the work and number of mistakes committed by team members (Gibson et al., 2009)	Expert rates followers

Category	Variable	Example	Source
Trust	Cognitive trust	Measured with survey filled out by participants of the meeting with questions such as the degree to which leaders engage work with professionalism (McAllister, 1995)	Followers rating of their leader
	Affective trust	Measured with survey filled out by participants of the meeting with questions such as the degree to which leaders engage work with professionalism (McAllister, 1995)	Followers rating of their leader
Leadership style	Transformational leadership style	Based on Multifactor Leadership Questionnaire (Bass & Avolio, 1995)	Followers rating of their leader
	Transactional leadership style	Based on Multifactor Leadership Questionnaire (Bass & Avolio, 1995)	Followers rating of their leader
Nonverbal leader behavior	Upwards palms	Leaders make a hand gesture with one or both hand with upward oriented palms	Observation
	Downward/inward palms	Leaders make a hand gesture with one or both hands with downward or inward oriented palm. The gesture is inward oriented when the palm of their hand faces them while the back of their hand is faced away from their body	Observation
	Mixed palms	Leaders do a hand gesture were their palms are neither unambiguously upwards, downwards or inwards oriented like showing a size of an object by having the palms of their hands face each other while the hands is held vertically	Observation
	No gesture	No explicit hand gesture is expressed and hands are resting	Observation
	Object touch	Leaders touch an object that is not used for any task like fidgeting with a pen or a coffee cup without drinking from it	Observation
	Self touch	Leaders touch their head with their hand to	Observation

Category	Variable	Example	Source
	head	scratch it or lean their head on their hands	
	Self touch body	Leaders touch themselves on any location other then the head like scratching their arm.	Observation
Verbal leader behavior	Task-oriented behavior	Composed of times a subject got corrected by someone, work delegation, work/task verification, procedures of the current meeting, information sharing, and opinions about long term strategies	Observation
	Relation-oriented behavior	Composed of positive feedback, personal information sharing, attentive listening and expressed humor.	Observation

Table 3

Descriptive Statistics

	N	Minimum	Maximum	Mean	SD
Team performance (leader rating) (1-7)	43	3.6	6.80	5.43	.80
Team performance (expert rating) (1-10)	41	4.25	8.00	7.02	.77
Cognitive trust (1-7)	44	4.44	6.5	5.63	.52
Affective trust (1-7)	44	4.73	6.43	5.72	.45
Transformational leadership (1-7)	43	4.04	6.11	5.35	.43
Transactional leadership (1-7)	43	4.15	6.61	5.26	.50
Object touch (frequency)	43	3	165	42.53	37.06
Object touch (duration in seconds)	43	20	2.69	778.10	710.47
Self touch (frequency)	42	11	235	77.1	39.48
Self touch (duration in seconds)	42	129.28	2925.94	823.3	618.86
Hand gestures (frequency in seconds)	43	53.00	677.00	239.42	136.55
Hand gestures	43	126.35	1752.11	729.84	408.00

	N	Minimum	Maximum	Mean	SD
(duration)					
Task-oriented behavior (frequency)	44	52	289	149.18	63.33
Task-oriented behavior (duration in seconds)	44	462.02	4918.4	1530.59	819.57
Relation-oriented behavior (frequency)	44	4	117	25.02	21.74
Relation-oriented behavior(duration in seconds)	44	10.22	1686.92	172.59	288.11
Hand gestures in combination with task-oriented behavior (duration in seconds)	44	0	.83	.24	.16
Object touch in combination with relation-oriented behavior (duration in seconds)	44	0	.89	.17	.18

Table 4

Correlation table of key variables measured in frequency

	1	2	3	4	5	6	7	8	9	10
Team performance (leader rating) (1)	-									
Team performance (expert rating) (2)	.17	-								
Cognitive Trust (3)	.06	.25	-							
Affective trust (4)	.12	.28	.89**	-						
Transformational leadership style (5)	.06	.23	.86**	.85**	-					
Transactional leadership style (6)	-.07	.19	.62**	.52**	.65**	-				
Object touch (7)	-.09	.05	-.11	-.20	-.08	.11	-			
Self touch (8)	-.05	-.02	.00	.06	.05	-.03	-.04	-		
Hand gestures (9)	-.07	.04	-.10	-.14	-.03	.11	.39*	.30	-	
Task-oriented behavior (10)	-.06	.11	-.13	-.09	-.10	.04	.50**	.18	.41**	-
Relation-oriented behavior (11)	.03	.17	.11	.13	.19	.13	.43**	.25	.38*	.42**

Note: N= 44.

	1	2	3	4	5	6	7	8	9	10

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5

Correlation table of variables measured in duration (seconds)

	1	2	3	4	5	6	7	8	9	10	11	12
Team performance (leader rated) (1)	-											
Team performance (expert rated) (2)	.17	-										
Cognitive Trust (3)	.06	.25	-									
Affective trust (4)	.12	.28	.89**	-								
Transformational leadership style (5)	.06	.23	.86**	.85**	-							
Transactional leadership style (6)	-.07	.19	.62**	.52**	.65**	-						
Object touch (7)	-.09	.14	-.12	-.17	-.06	.12	-					
Self touch (8)	-.12	.07	.14	.23	.16	.08	-.26	-				
Hand gestures (9)	.03	.10	-.10	-.08	-.05	.05	.09	.01	-			
Task-oriented behavior (10)	-.13	.06	-.05	.07	.05	-.19	.28	.09	.44**	-		
Relation-oriented behavior (11)	.01	.09	-.03	.00	.08	-.16	.20	-.01	.21	.57**	-	
Hand gesture in combination with task-oriented behavior (12)	.09	.01	-.20	-.24	-.15	.02	-.19	-.05	.56**	-.25	-.22	-

	1	2	3	4	5	6	7	8	9	10	11	12
Object touch in combination with relation-oriented behavior (13)	-.18	.10	-.14	-.21	-.04	-.02	.76**	-.31*	-.10	.02	.03	-.15

Note: N= 44.

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 6

Regression analysis between cognitive and affective trust and team performance

	Team performance			
Variable	B	SE B	β	Sig.
Cognitive trust	.04	.10	.06	.72
Affective trust	.07	.09	.12	.45
R^2 (cognitive)		.00		
R^2 (affective)		.01		

Table 7

Regression analysis between cognitive and affective trust and transformational leadership style

	Transformational leadership style			
Variable	B	SE B	β	Sig.
Cognitive trust	1.05	.10	.86	.00
Affective trust	.88	.09	.85	.00
R^2 (cognitive)		.73		
R^2 (affective)		.72		

Table 8

Regression analysis between cognitive and affective trust and transactional leadership style

	Transactional leadership style			
Variable	B	SE B	β	Sig.
Cognitive trust	.66	.13	.62	.00
Affective trust	.46	.12	.52	.00
R^2 (cognitive)		.39		
R^2 (affective)		.27		

Table 9

Regression analysis between hand gestures and transactional leadership style

	Transactional leadership style			
Variable	B	SE B	β	Sig.
Hand gestures (measured in frequency)	.24	.35	.11	.50
Hand gestures (measured in duration)	.11	.35	.05	.75
R^2 (frequency)		.01		
R^2 (duration)		.00		

Table 10

Regression analysis between hand gestures and transactional leadership style

	Transformational leadership style			
Variable	B	SE B	β	Sig.
Hand gestures (measured in frequency)	-.06	.38	-.03	.88
Hand gestures (measured in duration)	-.13	.38	-.05	.73
R^2 (frequency)		.00		
R^2 (duration)		.00		

Table 11

Regression analysis between object touch and cognitive and affective trust

	Cognitive Trust				Affective Trust			
Variable	B	SE B	β	Sig.	B	SE B	β	Sig.
Object touch (measured in frequency)	-.06	.08	-.11	.47	-,09	.07	-.20	.20
Object Touch (measured in duration)	-.06	.08	-.12	.43	-.08	.07	-.17	.27
R^2 (frequency)		.01				.04		
R^2 (duration)		.02				.03		

Table 12

Regression analysis between task-oriented verbal behavior and transactional leadership style

	Transactional leadership style			
Variable	B	SE B	β	Sig.
Task-oriented behavior (measured in frequency)	.02	.08	.04	.78
Task-oriented behavior (measured in duration)	-.09	.08	-.19	.23
R^2 (frequency)		.00		
R^2 (duration)		.03		

Table 13

Regression analysis between task-oriented verbal behavior and transformational leadership style

	Transformational leadership style			
Variable	B	SE B	β	Sig.
Task-oriented behavior (measured in frequency)	-.04	.07	-.10	.53
Task-oriented behavior (measured in duration)	.00	.07	.05	.76
R^2 (frequency)		.01		
R^2 (duration)		.00		

Table 14

Regression analysis between relation-oriented verbal behavior and cognitive and affective trust

	Cognitive Trust				Affective Trust			
Variable	B	SE B	β	Sig.	B	SE B	β	Sig.
Relation-oriented behavior (measured in frequency)	.06	.08	.11	.49	,06	.07	.13	.42
Relation-oriented behavior (measured in duration)	-.02	.08	-.03	.85	.00	.07	.00	.99
R^2 (frequency)		.01				.02		
R^2 (duration)		.00				.00		

Table 15

Regression analysis between hand gestures in combination with task-oriented behavior and transactional leadership style

	Transactional leadership style			
Variable	B	SE B	β	Sig.
Hand gestures in combination with task-oriented behavior	.01	.08	.02	.90
R^2		.00		

Table 16

Regression analysis between hand gestures in combination with task-oriented behavior and transformational leadership style

	Transformational leadership style			
Variable	B	SE B	β	Sig.
Hand gestures in combination with task-oriented behavior	-.07	.07	-.15	.32
R^2		.02		

Table 17

Regression analysis between object touch in combination with relation-oriented behavior and cognitive and affective trust

	Cognitive Trust				Affective Trust			
Variable	B	SE B	β	Sig.	B	SE B	β	Sig.
Object touch in combination with relation oriented behavior	-.07	.08	-.14	.38	-.09	.07	-.21	.18
R^2		.02				.04		

Table 18

Comparison of followers trust, leaders leadership style and leader micro-behavior between 15 most effective and 15 least effective teams

	Most effective teams (n = 15)		Least effective teams (n = 15)	
	Mean	SD	Mean	SD
Cognitive trust	5.64	.53	5.59	.50
Affective trust	5.73	.44	5.67	.45
Transformational leadership style	5.36	.41	5.29	.51
Transactional leadership style	5.21	.51	5.25	.40
Object touch (frequency)	.01	.87	.02	.91
Object touch (duration in second)	-.01	1.00	-.04	.80
Self touch (frequency)	-.21	.61	-.09	.97
Self touch (duration in seconds)	-.18	.66	.03	1.18
Hand gestures (frequency)	-.08	1.01	-.11	1.26
Hand gestures (duration in seconds)	-.06	.98	-.29	1.14
Task-oriented behavior (frequency)	.03	1.10	-.14	0.98
Task-oriented behavior (duration in seconds)	-.22	.51	-.07	1.33
Relation-oriented behavior (frequency)	.01	.86	-0.17	.61
Relation-oriented behavior (duration in seconds)	-.15	.29	-.18	.40
Hand gestures in combination with task-oriented behavior	.03	1.10	-.14	.98
Object touch in combination with relation-oriented behavior	-.22	.51	.07	0.33

Table 19

Comparison between leaders who scored high and low on transactional leadership style, team performance, trust and their micro behavior

	High score on transactional leadership style (n = 15)		Low score on transactional leadership style (n = 15)	
	Mean	SD	Mean	SD
Team Performance	5.55	.89	5.58	.80
Cognitive trust*	6.08	.30	5.26	.58
Affective trust*	6.10	.20	5.49	.46
Object touch (frequency)	-.09	.82	-.29	.69
Object touch (duration in second)	-.05	.62	-.25	.89
Self touch (frequency)	-.40	.63	-.01	.50
Self touch (duration in seconds)	.21	1.44	-.20	.33
Hand gestures (frequency)	-.12	1.35	-.31	.71
Hand gestures (duration in seconds)	-.32	.89	-.27	.70
Task-oriented behavior (frequency)	-.15	.72	-.06	.78
Task-oriented behavior (duration in seconds)	-.29	.45	.18	.82
Relation-oriented behavior (frequency)	.06	.97	.10	.86
Relation-oriented behavior (duration in seconds)	-.16	.25	.29	1.00
Hand gestures in combination with task-oriented behavior	-.23	.87	-.34	.60
Object touch in combination with relation-oriented behavior	-.19	.63	-.12	.86

* $p < .05$

Table 20

Comparison between leader who scored high and low on transformational leadership style, team performance, trust and their micro behavior

	High score on transformational leadership style (n = 15)		Low score on transformational leadership style (n = 15)	
	Mean	SD	Mean	SD
Team Performance	5.48	.25	5.32	.83
Cognitive trust*	6.18	.25	4.91	.38

	High score on transformational leadership style (n = 15)		Low score on transformational leadership style (n = 15)	
	Mean	SD	Mean	SD
Affective trust*	6.15	.15	5.14	.35
Object touch (frequency)	.08	1.29	.54	1.01
Object touch (duration in second)	.16	.97	.45	1.30
Self touch (frequency)	-.03	.71	-.14	.59
Self touch (duration in seconds)	.26	1.40	-.40	.39
Hand gestures (frequency)	-.40	.93	.04	.71
Hand gestures (duration in seconds)	-.46	.85	-.18	.68
Task-oriented behavior (frequency)	.06	.73	.44	.78
Task-oriented behavior (duration in seconds)	.00	1.01	.14	.63
Relation-oriented behavior (frequency)	.39	1.69	-.07	.89
Relation-oriented behavior (duration in seconds)	.24	1.77	.14	1.07
Hand gestures in combination with task-oriented behavior	-.34	.83	-.08	.66
Object touch in combination with relation-oriented behavior	-.17	.72	.20	.83

* $p < .05$

Table 21

Summary of tested hypotheses

Hypothesis	Result
H1: Leaders who are perceived as more trustworthy during periodically held staff meetings are more likely to stimulate better team performance in their followers.	Not supported
H2a: Leaders who are perceived as more trustworthy by their followers are more likely to be perceived as a transformational leader.	Supported
H2b: Leaders who are perceived as more trustworthy by their followers are more likely to be perceived as a transactional leader.	Supported
H3a: Leaders who use hand gestures more frequently are more likely to be perceived as transactional leaders by their followers.	Not supported

Hypothesis	Result
H3b: Leaders who use hand gestures more frequently are more likely to be perceived as transformational leaders by their followers.	Not supported
H4: Leaders who use object touch more frequently are more likely to receive more cognitive and affective trust from their followers.	Not supported
H5a: Leaders who use task-oriented verbal behavior more frequently are more likely to be perceived as a transactional leader by their followers.	Not supported
H5b: Leaders who use task-oriented verbal behavior more frequently are more likely to be perceived as a transformational leader by their followers.	Not supported
H6: Leaders who display relation-oriented behavior more frequently are more likely to receive more cognitive and affective trust from their followers.	Not supported
H7a: Leaders who use more hand gestures in combination with task-oriented behavior are more likely to be perceived as a transactional leader by their followers.	Not supported
H7b: Leaders who use more hand gestures in combination with task-oriented behavior are more likely to be perceived as a transformational leader by their followers.	Not supported
H8: Leaders who use object touch more frequently while displaying relation-oriented behavior are more likely to receive more cognitive and affective trust from their followers.	Not supported

Table 22
Correlation table of dependent and independent variables with all subcategories of the micro behaviors of object and self touch

	1	2	3	4	5	6	7	8	9	10	11
Team performance (leader rated) (1)	-										
Team performance (expert rated) (2)	.17	-									
Cognitive trust (3)	.06	.25	-								
Affective trust (4)	.12	.28	.89**	-							
Transformational leadership (5)	.06	.23	.86**	.85**	-						
Transactional leadership (6)	-.07	.19	.62**	.52**	.65**	-					
Object touch (frequency) (7)	-.09	.05	-.11	-.20	-.08	.11	-				

	1	2	3	4	5	6	7	8	9	10	11
Object touch (duration) (8)	-.09	.13	-.12	-.17	-.06	.12	.82**	-			
Self touch body (frequency) (9)	-.08	.09	.01	.11	.13	.07	-.14	-.17	-		
Self touch body (duration) (10)	-.24	.19	.13	.26	.26	.22	-.22	-.20	.65**	-	
Self touch head (frequency) (11)	.03	-.17	-.01	-.05	-.10	-.16	.13	-.05	.07	-.25	-
Self touch head (duration) (12)	.12	-.12	.04	.02	-.08	-.16	-.12	-.10	-.16	-.24	.53**

Note: N = 44.
**. Correlation is significant at the 0.01 level (2-tailed).

Table 23
Correlation table of dependent and independent variables with all subcategories of the micro behaviors of upwards, downwards/inwards, mixed clasped hands and no gesture

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Team performance (leader rated) (1)	-														
Team performance (expert rated) (2)	.17	-													
Cognitive trust (3)	.06	.25	-												
Affective trust (4)	.12	.28	.89**	-											
Transformational leadership (5)	.06	.23	.86**	.85**	-										
Transactional leadership (6)	-.07	.19	.62**	.52**	.65**	-									
Upwards (frequency) (7)	.05	.05	-.08	-.07	.02	.10	-								
Upwards (duration) (8)	.03	.02	-.13	-.08	-.04	.06	.93**	-							
Downwards/inwards (frequency) (9)	-.04	.10	.08	.00	.11	.18	.56**	.52**	-						
Downwards/inwards (duration) (10)	.08	.16	.09	.08	.11	.14	.23	.26	.76**	-					
Mixed palms (frequency) (11)	-.13	-.03	-.19	-.22	-.12	.04	.56**	.46**	.65**	.32*	-				
Mixed palms (duration) (12)	-.03	.02	-.21	-.18	-.18	-.05	.36*	.38*	.59**	.55**	.8**	-			
No gesture (frequency) (13)	-.05	.17	-.11	-.11	-.03	.04	.67**	.58**	.63**	.24	.85**	.66**	-		
No gesture (duration) (14)	.17	.03	-.09	-.06	-.13	-.22	.12	.10	.02	-.09	.23	.22	.42**	-	
Clasped hands (frequency) (15)	-.13	-.08	-.16	-.12	-.10	.04	.21	.12	.51**	.35*	.63**	.43**	.31*	-.14	-
Clasped hands (duration) (16)	-.19	.05	-.04	.10	.07	.02	-.20	-.20	.04	.09	.14	.07	-.06	-.12	.64**

Note: N = 44.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 24

Correlation table of dependent and independent variables with all subcategories of the micro behaviors of task-oriented behavior in frequency

	1	2	3	4	5	6	7	8	9	10	11
Team performance (leader rated) (1)	-										
Team performance (expert rated) (2)	.17	-									
Cognitive trust (3)	.06	.25	-								
Affective trust (4)	.12	.28	.89**	-							
Transformational leadership (5)	.06	.23	.86**	.85**	-						
Transactional leadership (6)	-.07	.19	.62**	.52**	.65**	-					
Correcting (frequency) (7)	.07	.11	-.33*	-.28	-.28	-.38*	-				
Delegating (frequency) (8)	-.14	.10	-.03	.09	.12	-.06	.03	-			
Verifying (frequency) (9)	-.03	.14	.15	.09	.16	.18	-.11	.63**	-		
Planning of current meeting (frequency) (10)	.04	.06	-.11	-.03	-.05	.02	.10	.68**	.58**	-	
Information sharing (frequency) (11)	-.10	.04	-.19	-.15	-.20	.09	.09	.28	.41**	.32*	-
Opinions of long-term strategy (frequency) (12)	-.06	.17	.09	.14	.14	-.16	.21	.45**	.02	.12	.14

Note: N = 44.

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 25

Correlation table of dependent and independent variables with all subcategories of the micro behaviors of task-oriented behavior in duration

	1	2	3	4	5	6	7	8	9	10	11
Team performance (leader rated) (1)	-										
Team performance (expert rated) (2)	.17	-									
Cognitive trust (3)	.06	.25	-								
Affective trust (4)	.12	.28	.89**	-							
Transformational leadership (5)	.06	.23	.86**	.85**	-						
Transactional leadership (6)	-.07	.19	.62**	.52**	.65**	-					
Correcting (duration) (7)	.04	.11	-.18	-.13	-.15	-.32*	-				
Delegating (duration) (8)	-.19	.04	.02	.15	.16	-.11	.34*	-			
Verifying (duration) (9)	-.03	.06	-.07	-.03	.00	-.36*	.66**	.35*	-		

	1	2	3	4	5	6	7	8	9	10	11
Planning of current meeting (duration) (10)	.03	.01	.06	.17	.12	-.27	.38*	.61**	.46**	-	
Information sharing (duration) (11)	-.16	.00	-.10	.01	-.02	.03	.23	.59**	.08	.03	-
Opinions of long-term strategy (duration) (12)	-.03	.17	.10	.11	.13	-.10	.31*	.63**	.33*	.39**	.46**

Note: N = 44.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 26
Correlation table of dependent and independent variables with all subcategories of the micro behaviors of relation-oriented behavior in frequency

	1	2	3	4	5	6	7	8	9
Team performance (leader rated) (1)	-								
Team performance (expert rated) (2)	.17	-							
Cognitive trust (3)	.06	.25	-						
Affective trust (4)	.12	.28	.89**	-					
Transformational leadership (5)	.06	.23	.86**	.85**	-				
Transactional leadership (6)	-.07	.19	.62**	.52**	.65**	-			
Humor (frequency) (7)	-.09	.03	.11	.16	.14	.08	-		
Personal information sharing (frequency) (8)	-.18	.01	.00	.05	.15	.05	.25	-	
Attentive listening (frequency) (9)	.13	.20	.09	.05	.13	.10	.19	.30*	-
Positive feedback (frequency) (10)	.03	.16	.06	.13	.15	.13	.49**	.22	.42**

Note: N = 44.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 27
Correlation table of dependent and independent variables with all subcategories of the micro behaviors of relation-oriented behavior in duration

	1	2	3	4	5	6	7	8	9
Team performance (leader rated) (1)	-								
Team performance (expert rated) (2)	.17	-							
Cognitive trust (3)	.06	.25	-						
Affective trust (4)	.12	.28	.89**	-					
Transformational leadership (5)	.06	.23	.86**	.85**	-				
Transactional leadership (6)	-.07	.19	.62**	.52**	.65**	-			

	1	2	3	4	5	6	7	8	9
Humor (duration) (7)	-.09	.03	.11	.16	.14	.08	-		
Personal information sharing (duration) (8)	-.04	-.06	.04	.11	.13	-.18	.67**	-	
Attentive listening (duration) (9)	-.09	-.05	.02	.08	.14	.01	.28	.56**	-
Positive feedback (duration) (10)	.04	.21	.18	.21	.27	.06	.48**	.78**	.61**

Note: N = 44.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).