The effect of smiling and body lean on leadership effectiveness and perceived work climate

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ABSTRACT
Over the years nonverbal behavior has received more and more interest from researchers particularly in the field of psychology and business. This study investigates to what extent the nonverbal behavior of a leader relates to follower perceptions of their leadership effectiveness and how it may affect work climate. The sample used for this study consists of 20 leaders and 192 followers. Data was obtained from different data sources such as (1) follower ratings and (2) video-based observations of regular supervisor-led staff meetings. The nonverbal behavior of the leaders during these staff meetings was meticulously coded by Bachelor and Master students of the university. After testing the proposed hypotheses, a significant relationship was found between the extent to which the leader displayed closed smiles during the meeting and the follower perceptions of Positive Affect. Implications of the findings are discussed and suggestions for further research are given at the end of this paper.

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1. INTRODUCTION

Over the years nonverbal behavior (in the remainder of this paper referred to as NVB) has received more and more interest by researchers, mainly in the field of psychology and ethology (Ellgring,1997). In psychology, nonverbal behavior is often used to comprehend and enhance the interaction among people, for example between therapists and their patients but also between parents and their children.

Nonverbal behavior as well as verbal behavior are part of human communication, where human communication is said to be "one of those activities that is intertwined with all of human life [...] " (Littlejohn, & Foss, 2008). Communication is said to be intertwined with all of human life as people are always confronted with communication. As there is no counterpart to behavior such as non-behavior, a person is always behaving and thus communicating (Del Rio, 2012). According to Palta **(**2007) more than half (55%) of the communication is done nonverbally (e.g. body language), whereas only 7% of communication is directed to verbal behavior. The remaining percentages (38%) are related to the voice and tone. Hence 93 per cent are related to NVB. This statistic is commonly cited and it accentuates that NVB is seen as more important than VB. As said by Peter F. Drucker, "the most important thing in communication is hearing what isn't said" and therefore he refers indirectly to nonverbal behavior as most important in communication. Although human communication consists not only of nonverbal behavior, it will be the topic of interest within this paper. As defined by Darioly and Mast (2014) nonverbal behavior is "any behavior other than speech content". This is in line with the definition of Ekman and Friesen (1969), which states that nonverbal behavior is "any movement or position of the face and/ or the body" (Ekman & Friesen, 1969). Verbal behavior on the other hand refers to the communication with words, sounds and language (Skinner, 2014) and is complemented and substituted by nonverbal behavior. Sometimes it can also happen that NVB contradicts VB. The use of NVB is also described by Parker (2009), who says that it can be used to (1) reinforce, (2) support and (3) emphasize the message. Depending on the intention to use NVB, verbal behavior and nonverbal behavior are either aligned, the verbal action is supported by nonverbal cues or the message is emphasized through nonverbal behaviors such as hand gestures. An example is the head nod which is often used when the response is a yes. Thus, it is used when you agree on something, whereas the head-shake often implicates disagreement and hence a no.

It is assumed that nonverbal signals appear more spontaneous than verbal ones. Consequently, nonverbal behavior is harder to imitate and is said to be more believable (Knapp, 2013). The believability of the nonverbal behavior is underlined by Patterson (1983), who says that "the information you receive from a person's nonverbal behavior is more representative of the true characteristics, attitudes and feelings of a person than that offered verbally". Nonverbal behavior, such as smiling, is said to be generally used unconsciously, whereas verbal behavior is used consciously. That does not mean that NVB cannot been used consciously. If people are for example infuriated and angry at someone, they want to display that. Consequently, a person, who is not pleased with the situation can make an angry face consciously to let the other person see their anger. So, in this situation nonverbal behavior is displayed with intention.

Nonverbal behavior often seems simple, when looking at various studies (Palta, 2007; Ekman & Friesen, 1969). It is far more complex than one might think. Questions one needs to consider when talking about nonverbal behavior are for example: What happens when communication takes place via a telephone meeting and not in a face-to-face meeting? How do the leader as well as their followers cope with the absence of some nonverbal behaviors? Within a normal telephone meeting (not skype or any visual mean, which allows seeing the conversational partner), the decoding of the body language of the other person is not possible. This makes it harder to understand what the other person actually means. It is said that people who cannot see the other person are not able to decode the nonverbal behavior compensate verbally for the information. This means that the information, normally displayed by nonverbal means such as gestures and body posture is substituted by verbal behavior (Krauss, Chen, & Chawla, 1996). An option to make the encoding and decoding of the other person possible, although it is not a face-to-face meeting, is the computer-mediated communication (CMC), which is used by virtual teams (Darioly & Mast, 2014). The CMC refers to communication between people, who are for example separated in space. This method allows them to communicate for instance via video, mail or even via chat. Through the option of a video conference as well as possible audios, it is possible to encode and decode some nonverbal behaviors.

The objective of this paper is to find out to which extent the nonverbal behavior of a leader relates to follower perceptions of their leadership effectiveness and to the work climate. The drafted research question to address this problem is the following:

"To what extent do expressions of nonverbal leader behavior (specifically body orientation and mouth movements) during regular staff-meetings relate to follower perceptions of their leadership effectiveness and subsequently to their work's climate?"

As shown in prior researches, the leadership style as well as the nonverbal behavior differs between men and women (Siegman and Feldstein, 2014; Eagly, Johannesen-Schmidt, 2001; Eagly, Karau, Makhijani, 1995; Paustian-Underdahl, Walker & Woehr, 2014). Men are said to be dominant, self -confident and masterful whereas women are described as more supportive, kind and sympathetic (Eagly, 1990). Next to the difference in leadership between men and women, the nonverbal behavior differs as well. For example, men are considered to have a more open body posture than women when talking to someone (Cashdan, 1998).

It is important to take gender into account, when trying to understand the role of NVB in leadership effectiveness and work climate, because of the difference in nonverbal behavior of men and women. Behaviors considered to be effective for men could be ineffective for women. This might be the same for the work climate, as it is said that men are caused faster by discomfort, when someone gets too close to them. Displayed behaviors by women with a positive effect on the followers might have a negative effect on followers when displayed by men. Gender differences in nonverbal behavior as well as leadership might affect the working environment in a different way and thus it is important to take gender as variable into account while conducting research.

As there has been a lot of research on gender differences in leadership and nonverbal behavior, which shows the importance of taking gender into account, the following sub question was derived to explore more on this aspect:

Sub question 1: 'Do male and female leaders differ in their nonverbal expressions during a meeting?'

Further, derived sub questions, with the intention to support the answering of my research question can be found below:

Sub question 2: Which specific nonverbal leader behaviors are related to perceptions of leadership effectiveness?

Sub question 3: Which specific nonverbal leader behaviors are related to follower perceptions of positive work climate?

Sub question 4: Is the relationship between nonverbal leader behavior and follower perceptions of positive work climate mediated by their leadership effectiveness?

2. LITERATURE REVIEW

To be able to answer the research question and its four sub-questions as complete as possible literature will be reviewed. As there is a lack of literature about nonverbal behavior within the business field, the literature which will be used is mostly psychology, organizational behavior as well as leadership literature. The first section of the literature review will deal with leadership and the effectiveness of leaders. After that the nonverbal behavior of leaders will be described. Within the same section, the demographic variable 'Gender' will be integrated to see how nonverbal leader behavior differs between men and women. In the last section of the literature review, literature about work climate in regard to leadership effectiveness and nonverbal behavior will be discussed.

2.1 Leadership

Leadership is an important subject in psychology (Hogan, Curphy and Hogan,1994) and has been a topic of interest for many of hundred years (Bolden, 2004). Since then scholars have started to define leadership. Nowadays there are hundreds of definitions of leadership, of which most involve the same components (Riggio, 2016), which are for example the aim of achieving a goal together by coordinating the group (Hogan, 1994).

As defined by Chemers (1997) leadership is "a process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a common task". This is in line with the definition of the researchers Hogan, Curphy and Hogan (1994) who say that leadership involves "persuading other people to set aside, for a time, their individual concerns and to work towards a common goal that is important for the welfare of the group". Although leadership was defined slightly different by various scholars, it was found out that leaders are always defined as the ones who lead the group to achieve the common goal. Next to that it is mentioned that the leaders are liable for the success as well as for the failure of their team, alternatively for the organization (Meindl, 1990). Leaders are not only responsible for the outcome (success, failure) of the organization, they are also able to influence the emotional climate of the team (Humphrey, 2002). There are several ways of how a leader can lead a group and there is not only one 'right' leadership style. As stated by Goleman (2001) different situations require different leadership styles. Indicated by Taberno, Chambel, Curral et al. (2009), leadership can either be divided into task-oriented leadership or relationship-oriented leadership. And although these leadership behaviors differ in a way, they both can be related to leadership effectiveness (Riggio, 2016).

Whereas task oriented leadership focuses rather on completing the project on time, sticking to deadlines and achieving desired results, relationship-oriented leadership focalizes on the motivation as well as the satisfaction of the group. Next to that, relation oriented leaders help to facilitate the interaction between the team members. An example which is considered as being a task-oriented leadership is the following: If a project is not finished on time, it could be the fault of the leader as he might have underestimated the time needed to complete the project successfully. It might also be that the group members are responsible for the delay, as they did not stick to their internal deadlines. Nevertheless, a leader's task is it to make sure that the project is finished on time. If a group member does not work appropriate and is so called 'free-riding', it is the task of the leader to report it to the superior, so that such a problem of not finishing on time, does not occur. In regard to the relation-oriented leadership, the following could be taken as an example: A relation-oriented leader, as opposed to a task-oriented leader cares about the relationship with his team (followers). This means that the leader sits together with the team to foster a good relationship and hence have a good working environment. An example for a leader, who is interested in building good relationship with their followers and also inspires and motivates them is considered to be a transformational leader. As the variable of interest within this study is work climate and thus related to positive as well as negative emotions of the followers, the relationship-focused behavior is of more importance in this study.

To understand what leadership effectiveness is, it is good to look at the quite recently published definition by Riggio (2016) who stated that leadership can be viewed as "a set of qualities that reside in the leader that make him or her effective at leading groups" (Riggio, 2016). The importance and impact of effective leadership on team dynamics (McGrath, 1984) and organizational performance (Riggio, 2008) has been emphasized by numerous scholars. But at what point is a leader considered to be effective and when ineffective? And how is the effectiveness of the leader determined?

One way to find out whether a leader works effectively, is to look at the accomplishment of the team. Leaders are often evaluated by peers, superiors and subordinates as the performance of a team is rather difficult to assess (Hogan, Curphy and Hogan, 1994). This complies with the definition of Kaiser (2008). According to Kaiser (2008) leadership effectiveness can be defined and measured differently in regard to some studies. Leadership effectiveness can be defined either by (1) evaluating the leader on important leadership traits, skills and competences (Kaiser, 2008) or (2) as a function of follower outcomes such as commitment or team performance. The latter one is used to see how satisfied and motivated the followers are with the leader. Now some ways, which are used to measure the effectiveness of a leader are known. The question 'What makes a leader effective?' remains still unanswered.

According to Noureddine (2015) an effective leader is someone who is able to "influence, motivate and direct others to achieve expected goals". Often effective leaders are considered to be charismatic and motivated. Next to that, effective leaders are said to have a clear vision of what they want to achieve. Another characteristic of the effectiveness of a leader is high Emotional Intelligence (Goleman, 2001; Darioly & Mast, 2014; George, 2000) whose importance is emphasized by various studies on leadership (Pryke, Lunic, Sulafa, 2015; Darioly & Mast, 2014). As stated by Goleman (2001) a great leader is recognizable by the emotional intelligence, whereby emotional intelligence is defined as the "subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990). The term Emotional Intelligence was first presented by Salovey and Mayer (1990) and afterwards modified by different scholars (Goleman, 1998; Salovey & Mayer, 2016). Salovey and Mayer (1997) developed the Four-Branch model to explain what Emotional Intelligence means and quite recently they reformulated their model to add different thoughts to it (Salovey & Mayer, 2016). Within their Four-Branch model, Salovey & Mayer (2003)

differentiated between the (1) Perception, the (2) Use, the (3) Understanding and the (4) Managing of emotions, which are seen as key duties of leaders (Humphrey, 2002). The leaders who are able to identify, use, understand and manage their own emotions, as well as the ones of their followers are considered to be effective (Goleman, 1998b).

Anyhow, leaders are not always effective. According to Toor and Ogunlana (2009), negative characteristics lead to being an ineffective leader. A leader who does not provide a supportive and friendly environment is considered to be ineffective. Characteristics of an ineffective leader are for example that he is unable to build a consistent team and that he does not really care about his followers. Further communication and relationship with its followers is important to identify the effectiveness of the leader. If leaders cannot communicate and have also a bad relationship with their followers, they are considered to be ineffective (Engle & Lord, 1997). Leadership ineffectiveness is also linked to trust. If a follower cannot trust the leader and thus is not listening to what is being said, the leader is considered to be ineffective. The importance of trust in leadership has been emphasized in various literatures (Dirks & Ferrin, 2002, Burke, Burke, Sims, Lazzara and Salas, 2007).

Research has shown that the expression of emotions plays an important role when it comes to the formation of followers' perceptions of leadership effectiveness as well as in the mood of the followers (Bono & Ilies, 2006, Ilies et al, 2012). As said by Goleman (2001) a leader with high Emotional Intelligence is said to be effective.

Based on the previously discussed theory, the following hypothesis can be derived:

H1: Expressions of smiling behavior is positively related to follower perceptions of their leadership effectiveness

2.2 Nonverbal leader behavior

Nonverbal behavior refers to the movement of the body as well as the face (Ekman & Friesen, 1969) and can be divided into different categories such as: (1) Gestures, (2) Facial expression, (3) Body posture (4) Eye behavior (Knapp, Hall & Horgan, 2014). The behaviors displayed by these nonverbal means are related to leadership effectiveness (Darioly & Schmid Mast, 2014; Talley & Temple, 2015).

When analyzing the nonverbal behavior in a regular staff meeting it can be observed that people display different behaviors. This means that leaders can either have an expansive or constricted body posture, lean forward or backward, use a different number of hand gestures. Besides that, people within a meeting, leader as well as followers, can have an open smile, a closed smile and look towards or away from the group. These behaviors are examples for nonverbal behavior. Depending on the leader some nonverbal behaviors are displayed more often than others.

Till now it cannot be generalized whether verbal or nonverbal behavior is more important. Concerning ambiguous situations NVB is more important than VB. When people are suspecting the verbal message of the other person, they often focus on the nonverbal behavior (Mehrabian, 1972). As people tend to pay more attention to actions and therefore to the nonverbal behavior of a person, it is important to match the nonverbal behavior with the verbal message. This is also undermined by Remland (1981)who states that when verbal and nonverbal cues are contradicting, followers tend to have more confidence in the nonverbal cues.

In the everyday life, people are confronted with the nonverbal behavior of other individuals, no matter whether in a team meeting or for example when talking to someone on the street. Nonverbal behavior is said to be of great importance when it comes to human interaction (Ekman, 2004). Next to that NVB is important when human relations are concerned and emotions are expressed (Patterson, 1978).

Another question that remains unanswered is the importance about nonverbal behavior in leadership. First, effective leaders are considered to be responsible for directing, motivating and coordinating the group to achieve a common goal (Hogan & Kaiser, 2008) and the communicating (encoding and decoding) of nonverbal messages to followers is part of their role. As encoding and decoding of nonverbal behaviors is related to Emotional Intelligence (Darioly & Mast, 2014), it is important for effective leadership (George, 2000). As said by Uhl- Bien (2004) the nonverbal interpersonal skills of leaders are crucial for an effective relationship between leaders and followers.

Leaders influence and facilitate individuals (Yukl, 2012). This is possible as they are using nonverbal behavior to convey their verbal message to their followers (Bonaccio et al., 2014). Besides that, leaders can decide how they utilize their nonverbal behavior. Nonverbal behavior can either be used to (1) underline the verbal message, to (2) substitute, to (3) complement, to (4) accent or to (5) contradict the verbal message (Bonaccio et al, 2014). It is important for a leader to make use of nonverbal behavior. Besides that, leaders are seen as trustworthy when they are able to communicate nonverbally (Yukl, 2010). Next to that, nonverbal behavior highly affects how the leader is perceived by their followers. Further it impacts the outcome of the followers and is beneficial for the leaders and team members to display effective nonverbal behavior. The impact of the leader's emotional display on their followers is undermined by various studies within the management literature (Pryke, Lunic, Sulafa, 2015). In regard to that, it is also important to say that a leader is able to positively influence the behavior of his followers as well as the relationship with them (Humprey, 2002; Pirola-Merlo et al., 2002). The followers can be affected, positively as well as negatively by the NVB, by for instance the facial expression of the leader (Goleman, 1998). It is also said that the leader's nonverbal behavior leads to a greater team spirit (Yukl, 2010).

Regarding the nonverbal behavior of the leader it is interesting to take into account the study done by Remland (1983) and Burgoon, Birk and Pfau (1990). Results from the study done by Remland (1983) showed that leaders who speak with a soft voice, smile, nod and direct themselves towards their team, are perceived more supportive by their followers than when they would do the contrary. Leaders who do not smile, lean back and look away from their followers and consequently avoid eye contact are considered to be nonsupportive. Supportive leaders can also be described as being warm, whereas nonsupportive leaders are perceived being cold, by followers. The nonverbal behavior does not only characterize the leader, but it also impacts the follower outcomes. Supportive leaders are said to have a positive impact on the followers as opposed to nonsupportive leaders. Mostly followers who worked with a supportive leader were satisfied and wanted to work with the leader again. Followers with a nonsupportive leader did not really look forward to work with this leader again. The nonsupportive leader did not have a good impact on the team and therefore the work climate was considered to be negative (Tjosvold, 1984). Results from the study done by Burgoon, Birk and Pfau (1990) showed that leaders who are fluent in speaking and who also use facial expressions are seen as being more convincing than leaders who stutter and also do not use facial expressions. As discussed prior, NVB is really important for the expression of emotions. Besides

that, the displaying of emotions is important in regard to the followers' perception of leadership effectiveness. Based on previously discussed theory, the following hypotheses can be derived:

H1: Expressions of smiling behavior is positively related to follower perceptions of their leadership effectiveness

H1a: Forward leaning is positively related to follower perceptions of their leadership effectiveness

2.2.1 GENDER IN RELATION TO NONVERBAL BEHAVIOR AND LEADERSHIP

This section will deal with the question, whether male and female leaders differ in their nonverbal expressions during a meeting. It was decided to incorporate gender as (demographic) variable within the study as behaviors considered to be effective for men could be ineffective for women.

There has been done a lot of research about the gender differences. Not only in regard to behavior, but also in regard to personality as well as communication. (Hyde and Linn, 1988; Feingold, 1994; Hall, 1978). In 1978 Hall published his research on the gender effects in decoding nonverbal cues. Only one year later the research on gender differences in verbal ability was published by Hyde and Lynn. Five years after that, in 1994, researcher Feingold studied the personality between males and females. These studies undermine that the difference between gender is of great importance. The impact of nonverbal behavior on team climate, taking into account the differences in gender, is considered to be a research gap, on which more research will be necessary. It is interesting to take the differences between sexes into account while during this research.

As already shown in prior researches, nonverbal behavior as well as leadership styles between men and women differ (Siegman and Feldstein, 2014; Eagly, Johannesen-Schmidt, 2001). For example, male managers are described by being competitive, whereas female managers are characterized by solving problems based on intuition as well as empathy (Lewis, P., Goodman, S., Fandt, P., & Michlitsch, 2006). Regarding, the nonverbal behavior of men and women it can be mentioned that males for example have a more open posture when talking than women have (Cashdan, 1998) Their appearance as being open, is associated to dominance. This dominance is mostly accompanied by the constant eye contact of men. In reviewed literature men are described as dominant, assertive, self-sufficient, self - confident, independent and masterful (Eagly, 1990). Women on the other hand are described as more kind, supportive, warm and sympathetic (Eagly, 1990). These qualities go also in hand with the nonverbal behavior. Females tend to smile more often than males and also use more eye contact (Lewis, Goodman, Fandt, Michlitsch, 2006). Besides that, women speak softer and with a higher voice than men (Lewis, P., Goodman, S., Fandt, P., & Michlitsch, 2006).

Further females, in contrast to males, have less constant eye contact with their counterpart. Regarding the personal space, men have a greater personal space than women. This means that men are caused faster by discomfort when someone gets too close to them. This might be a barrier when working together and the work climate might be affected in a negative way. Negatively because female and male teammates might get in trouble when it comes to personal space. When one of them, might be comfortable with the closeness, the other one might feel alright with the situation. The relation between leadership, NVB and gender is said to be complex and multifarious (Darioly & Mast, 2014). Based on previous assumptions, the following hypothesis can be proposed:

H1b: Female leader tend to display open smiles during the meeting more often than male leaders

2.3 Work Climate

Till now there has not been done much research about work climate. Work climate refers to the atmosphere at work perceived by employees and can be seen as a medial outcome of effective leadership (Ariñez et al, 2002).

There have been scholars who differentiated between Positive Affect (PA) and Negative Affect (NA), where affect labels the mood and emotions (Watson, Clark and Tellegen,1988; Diener et al., 1999). The Positive as well as the Negative Affect make up the PANAS schedule, which is a scale to assess the mood of people (Watson, Clark and Tellegen, 1988), where both affects represent a different dimension. Moods and emotions influence the work climate and therefore the PANAS schedule can be used to assess the work climate. Positive affect for example refers to pleasurable engagement, such as joy, enthusiasm and interest (Diener et al., 1999; Watson, Clark and Carey, 1988). Happy people express more positive than negative affect. In addition, teams, who have leaders with a positive mood, are said to produce a friendly atmosphere, which is why the coordination among team members is said to be high (Sy, 2005).

The Positive and Negative affect are used to assess whether the work climate is positive or negative. The climate and effectiveness of the working environment is framed by the perceptions of leaders, managers and employees in the company (Otara, 2011). Perceptions have been crucial in understanding human behavior already for a long time (Otara, 2011). Leaders are accountable for the success, but also for the failure of the teams as well as the organizations (Meindl, 1990). Their task, besides directing, motivating and coordinating the group, is also to keep the team together by for example solving misunderstandings or by facilitating the interaction between team members (Hogan & Kaiser, 2008). Their actions and behavior, verbal but also nonverbal, are important for the team. The importance of the nonverbal behavior is emphasized by Poel, Poppe and Nijholt (2008) who say that the nonverbal behavior of a leader influences whether a meeting is successful or not.

As said by Robert Stringer "What the boss of a work group does is the most important determinant of climate". The importance of leaders in regard to work climate is emphasized. Leader's behavior as well as their mood have an influence on their followers (Sy, 2005; Goleman, 1998; Lewis, 2000; (Baeza, Lao, Meneses & Romá, 2009). Leaders are able to influence emotions in team processes, which is of relevance for the work climate (Parker, 2009, Bono & Illies, 2006). Next to that the personality of the leader is of great importance as it has an influence on the dynamics within the team and consequently on the performance of the organization (Hogan and Kaiser, 2005). For example, when leaders are cheerful and happy, it is likely that their followers also experience a more positive mood. The term Emotional contagion can be mentioned here. Emotional contagion refers to the behavior and emotions of someone that directly triggers the emotion of someone else and is said to highly impact the work climate (Johnson, 2008). In the context of emotional contagion, nonverbal behavior plays an important role. For example, facial expressions as well as the body orientation of someone provide information about their mood and depending on the mood, different behaviors are displayed (Sy, 2005). Positive mood is mostly displayed by nonverbal behaviors such as smiling and open posture (Ekman,1982), whereas negative mood is often displayed by nonverbal behaviors such as

backward lean and constricted body posture. Regarding the nonverbal behaviors, it needs to be mentioned that leaning forwards indicates interest, whereas leaning backwards might be linked to escaping the conversation and thus it is often associated to showing no interest (Gibson, 2015). One needs to be careful with leaning forward, as leaning to much forward can already be seen as violation of the personal space. The same accounts for looking towards the group which indicates interest as well, until the looking turns into starring at someone. As found out, leaders, who utilize nonverbal behavior while interacting are often seen more positively by their followers (Richmond and McCroskey, 2008), which might enhance the work climate as well. For a positive climate and the wellbeing of the team, it is also crucial for leaders and followers to have a good relationship (Schaefer and Moos, 1996). Consequently, a bad working relationship between leaders and followers would contribute to a negative climate. Leaders, who are considered to be good or effective provoke trust in followers, which then is likely to result in positive outcomes and a positive climate (Riggio, 2016). Due to the display of emotions the performance of an individual as well as of an organization can be influenced. Consequently, a smile for example might lead to better outcomes and a better climate within the group (Rafaeli & Sutton, 1989). As said by Tee and Ashkansay (2008), the quality of the relationship between team members (followers) is influenced by the display of emotions by individuals. Further they found out, that leaders in positive mood groups were considered to be more effective than the leaders in negative mood groups (Tee and Ashkansay, 2008). Effective leaders are often able to minimize the consequences of a negative event (Pirola, 2002). If a leader is considered to be unsupportive and hence does not care about the team, the work climate would be resulting in a negative work climate. A possibility to avoid a negative climate and the resulting bad performance is to create a supportive climate. A climate which is considered to be supportive facilitates the sharing of information of the members (Pagano, 2017). Often the supportive climate is augmented by nonverbal cues that do not convey the sense of controlling and being in a higher position.

Based on previously discussed theorizing, the following hypotheses can be derived:

H2: Expressions of smiling behavior positively influences the follower perceptions of the work climate (PANAS positive)

H2a: Forward leaning positively influences the follower perceptions of the work climate (PANAS positive)

H2b: Backward leaning is positively related to follower perceptions of the work climate (PANAS negative)

H3: The relationship between the leaders' forward leaning and team climate is mediated by the follower perceptions of leadership effectiveness

H3a: The relationship between the leaders' expressions of smiling and team climate is mediated by the follower perceptions of leadership effectiveness

3. RESEARCH MODEL

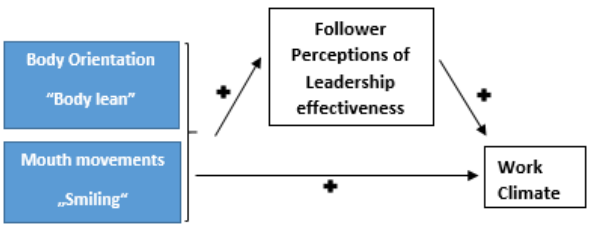

Figure 1. Research model

4. METHODOLOGY

4.1 Design

This study applies a mixed method design which means that the collection and analysis of qualitative as well as quantitative data is integrated within the research (Stentz et al, 2012). The data sources used for the present research are (1) Follower ratings and (2) Video-based observations. The follower ratings are used to measure the followers' perception of leadership effectiveness, whereas the video observations are useful to be able to code the leader's nonverbal behavior during regular staff meetings and also to identify the behaviors of the followers. For this study, only the leader's nonverbal behavior is the topic of interest. Nonverbal behavior can be segmented into four types of behavior such as gazing, facial expression, hand gestures and body posture. These four nonverbal behaviors were divided among six third year students and four master students from the University of Twente to code as efficient as possible. The coding was done in pairs of two in order to avoid subjectivity bias and after all the videos were coded, the information was shared among the students. For analytical purpose and the identification of relationships between the leader's nonverbal behavior and some outcome variables, the received behavioral data was statistically examined.

By using various methods and sources, the common source bias is reduced (Podsakoff, 2012). This allows for more reliable results. If only one method is used as source of information, reliability cannot be guaranteed due to the variations from source to source.

4.2 Sample

The original sample consisted of 110 leaders from a public organization. Based on visibility of nonverbal cues, a sub sample of 20 leaders (192 followers) was selected for this study.

Regarding the number of females and males within this sample, it is obvious that only 3 of the 20 leaders were women, whereas 17 were men. These leaders were on average 53 years (ranging from 34 to 64; SD=9). On average, the leaders have been in leadership positions for fifteen years (ranging from 3 to 32 years; SD= 9). The corresponding follower sample consisted of 192 followers, whereof 133 were males and only 59 were females. Their age varied from 25 to 64 (Average: 49; SD=10) and they have been employed at the organization on average 24,7 years (SD=13,7). It can be concluded that the sample consisted of more men than women, in regard to both, the leaders and followers.

The data was obtained during regular staff meetings of a large public-sector organization from a M1, M2 or M3 level of management. The leaders as well as their team (followers) were videotaped during the meeting and after the meeting the followers were asked to fill out a survey to for example rate the effectiveness of the leader. The data is considered to be secondary data as it was not gathered by myself.

4.3 Measures

From the given variables of the dataset of a Public Organization, the following variables were chosen:

- Positive/ Negative Affect Schedule (Work Climate)
- Leadership Effectiveness

To investigate the relation between nonverbal behavior, leadership effectiveness and team climate, which are addressed in this paper, specific nonverbal behaviors were picked. The

nonverbal behaviors chosen for this research were 'Body Orientation' and 'Mouth movements'. The nonverbal behavior 'Body orientation' was divided into the three following sub behaviors: 'Expansive body posture', 'Constricted body posture' and 'Body lean movements. The second behavior chosen for the study was the behavior 'Mouth movements' which was segmented into 'No mouth movement', 'Open smile', 'Closed smile' and 'Lip corners down'.

4.3.1 Positive and Negative Affect Schedule (Work Climate)

The team climate was measured using the Positive and Negative Affect Schedule, briefly worded PANAS, which is a scale that is used to assess the mood as well as the emotions within the team (Watson et al., 1988). This scale consists of 20 adjectives, which describe different sensations and feelings. Thereof, ten are related to the Positive Affect and ten to the Negative Affect. Within the PANAS scale the following adjectives, such as excited, strong, inspired, enthusiastic, determined and active, are used to assess the Positive Affect (Watson, Clark and Tellegen, 1988). Whereas, Negative Affect is associated with unpleasable engagement and thus encompasses negative mood states such as fear and anxiety. The Negative Affect is measured with the PANAS schedule, where ten adjectives as for example: distressed, upset, guilty, scared, nervous, and afraid are used to assess the Negative Affect.

In the present study, a shortened number of items of the PANAS scale was used. For assessing the Positive Affect, the following four adjectives were used: interested, inspired, enthusiastic and proud. The Cronbach's Alpha of this scale was 0.872, which indicates a high reliability of this measurement. For the Negative Affect scale, the following adjectives were used: irritable, upset, scared and nervous. The Cronbach's Alpha of this scale was a bit lower than for the positive affect ($\alpha = .77$). An important point which needs to be mentioned before using this scale is that the instructions have to be read before using it. This is due to the answers which can either be based on the way you are feeling now or about how you felt. The responses will be scored on a 5-point scale, where the categories range from 1 (very slightly/not at all) to 5 (extremely). The answers, regarding the positive emotions will be added up. The higher the score the higher the positive affect is. This is the same for the negative affect, where lower scores represent lower levels of negative affect and a high score represents a higher level of negative affect.

4.3.2 Leadership effectiveness

Leadership effectiveness was measured using follower and expert ratings. These ratings were used to assess the effectiveness of the leader. While conducting this research, only the follower ratings were of interest and the expert ratings were excluded.

An example statement for the leadership effectiveness within these ratings is 'I lead my team effectively' and the responses can differ on a 6-point scale from completely agree to completely disagree (Bass & Avolio, 1995). In the current dataset, effective leadership is reflected by a set of questions that were measured by the Multifactor Leadership Questionnaire shortly referred to as MLQ. This measurement method is based on the perception of the followers.

4.3.3 Nonverbal behavior of leaders

A sub sample of 20 tapes was selected from the dataset of a Public Organization. Prior to the staff meetings three cameras were installed at different places in the room. This was necessary to observe the nonverbal behavior of the leader. The forward leaning as well as the backward leaning behavior of the leader might not be seen from the front perspective. Whereas hand gestures might be better observable with the help of a camera positioned at the side. For analyzing the behavior of the leader, a pre-developed coding scheme was created by the (lead) researcher. When using the coding scheme, it was important to know that some nonverbal cues are mutually exclusive, which means that they cannot occur at the same time. For instance, a person cannot have a closed and an open smile at the same time. This is applicable for the gazing behavior as well, as a person cannot look towards and at the same time look away from the group. The tapes were coded independently in pairs of six third year bachelor and four master students, which means that except the behavior hand movements one pair focused and hence coded one behavior. Prior to the coding of the videos with the software program The Observer XT' (Noldus, Trienes, Hendriksen, Jansen, & Jansen, 2000), one had to do a training session to get familiar with the coding software. As the coding of the videos was done independently, a post video discussion was done for each tape to receive a reliability of almost hundred per cent. To assess the inter-rater reliability, the observations were compared with the help of the Interrater-Analysis. This analysis showed on which movement the two coders disagreed and on which they agreed. When the disagreements were of high significance, the tape was reviewed, discussed and recoded until a reliability of almost hundred per cent of agreement was obtained. The resulting tape was saved as 'Golden file'. When the hundred per cent were still not achieved due to discrepancies, the file was rechecked by the creator of the coding scheme, the (lead) researcher.

It cannot be said that the agreements between coders were generally high or low for a particular nonverbal behavior, as this really differed from tape to tape. For body orientation the average percentage of agreement, prior to the discussion was 58,85%. After discussing, the average percentage of agreement was 92,03. For hand movements, an average agreement of 59,75% was achieved prior to the discussion and an average agreement of 94,46% was obtained after the post discussion. Lastly, the average percentage of agreement for facial expression was 49,81% before discussing with the coding partner and 94,75% were obtained after the discussion. From these findings, it can be concluded that the average agreement of facial expression was the lowest for the pre-as well as the post discussion, as compared to body orientation and hand movements. While coding and comparing the coding results, it was noticed that some nonverbal behaviors were more difficult to code. For instance, the students being responsible for the coding of the hand movements had more disagreements than for example the students who were coding eye gazing. This is reasonable, as it is easier to identify whether a leader is looking towards or away from the group than differentiating between mixed, upward and downward palm as well as between object touching and self-touching.

While performing the Interrater Analysis, it was also important to understand Kappa. Kappa, also known as Cohen's Kappa, is a statistical measure for interrater reliability. It is used for measuring the agreement between observers and also considers that observers sometimes agree or disagree by chance. 0 indicates agreement which is equivalent to chance, whereas Kappa equal to 1 indicates perfect agreement between observers (Vierra and Garret, 2005). A detailed interpretation of Kappa can be found in Appendix A3. The average Kappa for Hand movements, prior to the discussion, was 0.529 and after the discussion it was 0.9335. The agreement changed from being moderate to almost perfect (see Appendix A3). For the nonverbal behavior facial expression, Kappa changed from 0.367 to 0.933 after the post discussion. The

agreement changed from being fair to almost perfect. Lastly, the Kappa for body orientation showed a moderate agreement (0.5215) prior to the discussion and an almost perfect agreement after the post discussion (0.9095).

The average duration of the meeting was one and a half hour. Due to time issues, it was decided to code only the first half an hour from the staff meeting which allowed us to code more videos. After all behaviors have been coded, the obtained data was put into SPSS to investigate the relationship between nonverbal behavior, leadership effectiveness and team climate.

5. RESULTS

To be able to investigate the relationship between NVB, Leadership Effectiveness and Work Climate, one had to test the reliability of the follower surveys first. This was done with Cronbach's Alpha, which is a common measure of reliability and is highly used when multiple Likert questions are present (Peterson, 1994). To identify Cronbach's Alpha for Leadership effectiveness four questions were used. The result showed a Cronbach's Alpha of .887, which is an indication for a high level of internal consistency. After that a reliability analysis was performed for the follower ratings of PANAS positive and PANAS negative, which are used to measure the work climate. In the present study, a reduced number of items of the PANAS scale, proposed by Watson, Clark and Tellegen (1988) was used. For the Positive Affect the following four adjectives were used: interested, inspired, enthusiastic and proud ($\alpha = .87$). Thus, these ratings are also considered to be very reliable. The last reliability analysis was calculated for the dimension Negative Affect. Within this study a reduced number of the PANAS scale was used. The descriptors used were: scared, upset, nervous and irritable and the resulting Cronbach's Alpha had a value of .78, which is an indicator of high reliability.

After having done the reliability analysis for all the ratings of the three variables, it can be concluded that all three scales are reliable measurements and are allowed to be used for further testing.

Table 1 shows an overview of the duration and frequency of the coded nonverbal behaviors of the 20 leaders. The table displays only the nonverbal behaviors, which were selected as variables of interest at the beginning of the research. The longest displayed leader behavior was expansive body posture, whereas forward leaning was the behavior most displayed. The behavior which was least and shortest displayed was the closed smile (Average of 14,74 seconds). From table 1 the following assumptions were drawn: (1) Leaders lean on average longer forward than backward, (2) leaders tend to smile more often with an open smile than with a closed smile and lastly (3) expansive body posture is often displayed longer than the constricted body posture. These assumptions need to be statistically tested, with the help of the one sample t-test, to see whether the assumptions can be accepted. For the first assumption that leaders lean on average longer forward than backward it can be concluded that this is not true ($t(19)= 1.158$, $p > .05$). As H0 claims that forward and backward leaning are equally displayed and the p-value (.261) is bigger than .05, H0 is accepted. The second assumption states that leaders tend to smile more often with an open smile than with a closed smile which is true ($t(19)= 2.726$ $p < 0.05$). H0 states that both behaviors are equally frequent displayed. As the p-value (.013) is smaller than .05 the hypothesis that leader's frequency of open smile is equal to closed smile can be rejected. For the third assumption, it can be concluded that the expansive body posture is displayed longer than the constricted body posture ($t(19) = 3.239$, $p < .05$). The Null hypothesis (H0) states that the duration of the displaying of expansive body posture is equal to the displaying of the constricted body posture. As the p-value (.006) is smaller than .05, H0 can be rejected and the assumption is considered to be true.

Table 1.1 displays the Maximum and Minimum duration as well as the total coded time of every selected behavior. This table shows that the total time coded by posture is the highest for expansive body posture and the shortest for closed smile.

Table 1 Average duration and frequency of coded behavior per leader (in seconds, n=20)

Displayed nonverbal behavior	Average Duration (in seconds)	Average Frequency (in seconds)
Expansive body posture	1090.5	9.8
Constricted body posture	723.73	9.7
Leaning forwards	680.50	12
Leaning backwards	564.85	8.2
No leaning	568.76	10.9
Open smile	51.18	11.8
Closed smile	14.74	5.45
Lip corners down	21.20	6.5

Table 2 presents the correlations between the selected nonverbal behaviors and PANAS (positive/ negative) and Leadership effectiveness. The correlation analysis was performed to see how the 'selected' nonverbal behaviors correlate with the dependent variables: PANAS (positive/ negative) and Leadership effectiveness. 'Selected' refers here to the sample of nonverbal behaviors chosen at the beginning of the study. The table illustrates that there was no significant correlation found between body leaning, the Positive and Negative Affect perceived by followers and Leadership effectiveness. Hypotheses H1a, H2a and H2b were rejected. H1a states that forward leading is positively related to follower perceptions of their leadership effectiveness. This hypothesis did not find any support and was rejected. The hypothesis H2b which states that forward leaning positively influences the follower perceptions of negative work climate was rejected as well as no significant relation was found. The last hypothesis which was rejected was H2c, meaning that backward leaning behavior by the leader during staff-meetings showed no relationship to follower perceptions of the negative work climate. The only significant correlation was found between the closed smile and the positive work climate, consequently hypothesis H2 which says that the expression of smiling behavior positively influences the follower perceptions of the positive work climate is accepted. As the correlation between the closed smile and positive work climate was the only one, H1 was rejected. Hypothesis H1 was stating that the expression of smiling behavior is positively related to follower perceptions of their leadership effectiveness. Even though individual IVs did not correlate with the DV, the sum of their effects may predict variability in the dependent variable. Hence a multiple regression analysis was realised to see whether the hypotheses can be rejected or whether the sum of the effects of the independent variables change the decision *(see Appendix A2)*. After performing the multiple regression analysis *(see Appendix A2)*, there was no relationship found between forward leaning,

work climate and leadership effectiveness. Hypothesis H3, which states that the relationship between the leaders' forward leaning and work climate is mediated by the follower perceptions of leadership effectiveness cannot be accepted.

Lastly a hypothesis regarding gender, was derived. This hypothesis H1b predicates that female leaders tend to display open smiles during the meeting more often than male leaders. After a statistical examination, it becomes clear that women (M = 25, SD = 18.33) reported higher levels of open smile than men (M = 9.47, SD = 6.96) and therefore the hypothesis can be accepted.

Table 1.1 Minimum and Maximum Duration of coded behavior per leader (in seconds, n=20)

	Minimum duration of coded Behavior (sec.)	Maximum duration of coded behavior (sec.)	Total time coded by posture (sec.)
Expansive body posture dur.	288.23	1771.46	21810.41
Constricted body posture dur.	93.33	1612.05	14474.70
No leaning dur.	31.77	1278.26	11375.31
Leaning forwards dur.	31.52	1644.68	13610.14
Leaning backwards dur.	0.00	1329.11	11297.17
Open smile dur.	2.84	216.41	1023.69
Closed smile dur.	0.00	43.04	294.88
Lip corners down dur.	2.97	96.38	424.14

Note: dur. = duration sec. = seconds

Table 2 Correlation among the key variables: NVB (Body orientation, Mouth movements), PANAS (positive/ negative) and Leadership effectiveness

	PANAS Positive	PANAS negative	Leadership effectiveness (follower ratings)
1. Expansive body posture dur.	-.22	-.36	-.31
2. Expansive body posture freq.	.10	-.04	.25
3. Constricted body posture dur.	.23	.36	.33
4. Constricted body posture freq.	.17	-.01	.25
5. Forward leaning dur.	-.01	-.17	-.13
6. Forward leaning freq.	-.11	-.24	.15
7. Backward leaning dur.	.26	.39	.32
8. Backward leaning freq.	-.01	.14	.16
9. No leaning dur.	-.26	-.25	-.19
10. No leaning freq.	-.18	-.09	.33
11. Open smile dur.	.13	-.11	.20
12.Open smile frequency	.06	-.10	.20
13.Closed smile dur.	-.35	.20	-.41
14.Closed smile freq.	-.50*	.10	-.29
15.Lip corners down dur.	.19	.04	-.10
16.Lip corners down freq.	-.01	-.01	.04

Note: *p < .05. **p < .025. ***p < .001, dur. = duration, freq.= frequency.

Table 3 Coefficients Variables resulting from Multiple Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t	Sig.
Constant	4.72	.68		6.99	.000
Closed smile frequency	-.05	.02	-.49	-2.21	.041*
Leadership effectiveness	.02	.12	.02	.14	.893

Note: Dependent variable: Follower ratings of PANAS positive; *p < .05. **p < .025. ***p < .001.

Table 4 Correlation among the key/dependent variables

Variables	1	2	3
1.Follower ratings of PANAS Positive	-		
2.Follower ratings of PANAS Negative	.33	-	
3. Follower ratings of leader's leadership effectiveness	.17	.05	-

Note: *p < .05. **p < .025. ***p < .001.

Table 3 shows the result of the Multiple Regression Analysis with closed smile and leadership effectiveness as predictor and follower ratings of PANAS positive as dependent variable. The table shows that closed smile (frequency) is positively associated to Follower ratings of PANAS positive (β = -.49, p <.05). Whereas Leadership effectiveness and the follower ratings of PANAS positive did not show any relationship (β= .02, p>0.05). This analysis was aimed to test the hypothesis H3a, which states that the relationship between the leaders' expressions of smiling and work climate is mediated by the follower perceptions of leadership effectiveness. As no correlation was found between the smiling and the leadership effectiveness, the hypothesis does not find any support.

To see whether leadership effectiveness has an impact on the relation between nonverbal behavior and work climate, it was planned to execute a mediation analysis. After the correlation analysis as well as the regression analysis it was found out that these variables do not correlate and therefore it does not make any sense to perform a mediation analysis. There is only ground for mediation, when Y is predicted by X. To make sure that there is no mediation going on, it was checked as well whether M is predicted by X. The only nonverbal behavior (X) which predicted the Positive Affect (Y) was the closed smile. Leadership effectiveness (M) was not predicted by the closed smile (X). The data did not support the presence of a mediation effect of leadership effectiveness in the relationship between nonverbal behavior and followers positive affect.

To summarize, the only nonverbal behavior used in this study which correlated with the outcome variable was the closed smile with the Positive Affect perceived by followers. All the other variables did not show any significant relationship.

Table 4 shows the correlation between the dependent variables. The table makes clear that there is no significant relationship found between these variables.

6. DISCUSSION

The aim of this paper was to find out to what extent do expressions of nonverbal leader behavior (specifically body orientation and facial expression) during regular staff-meetings relate to follower perceptions of their leadership effectiveness and subsequently to their works' climate?

Differences between the theoretical assumptions, which were drawn from the literature review and the statistical outcome were identified. The results showed that there is no relationship between the selected nonverbal behaviors and the follower perception of leadership effectiveness and work climate, except between closed smile and the Positive Affect.

The non-significance of the expected relationships is a discussion point. The outcome shows that the positive climate is only determined by the closed smile of the leader. Yet, literature suggests that for example body lean affects the work climate and that smiling increases the effectiveness of the leader. This was not the case as the results did not show any evidence. The non-significant relationships could be attributed to the small sample size (N=20) and the low order construct. For future research it is recommended to take a larger sample and to compute higher order constructs as they might show stronger relations to the two PANAS dimensions. High order constructs mean that from the existing nonverbal behaviors, new composite variables would need to be computed. An example of a new variable could be 'Positive Expressions' and another one 'Negative Expressions'. The 'Positive Expression' variable includes all the nonverbal variables associated to positive expressions such as open, closed smile and leaning forwards. Whereas the variable 'Negative Expression' comprises all the nonverbal behaviors associated to negative expressions as for example leaning backwards, looking away from the group as well as lowered eyebrows.

7. THEORETICAL AND PRACTICAL IMPLICATIONS

Theoretical Implications

The study will be contributing to the literature of nonverbal behavior and Leadership. It will give new insights on the relationship between nonverbal leader behavior, leadership effectiveness, and the work climate. There is no literature about this topic as such and hence it can be seen as filling up the research gap in the literature.

Practical Implications

This study could be of use for different kind of teams to enhance their work climate and to improve their performance. These teams could be any kind of team, as for example a (work) team within an organization. If you know what the impact of nonverbal

leader behavior on the work climate is in general, it can be applied on different cases. Moreover, leaders could be trained to better understand their followers and to improve the work climate. If it is known which behaviors leaders should display to improve leadership effectiveness as well as work climate, leaders can be trained. As stated by Darioly & Mast (2014), an example for such a training could be an interpersonal skill training. This training might help leaders to be aware of their own NVB. The benefit of providing such a training, is the increase of the effectiveness of a leader through means of nonverbal behavior.

Before offering such a training the following questions need to be answered first:

- What nonverbal behaviors should be displayed and which behaviors should be avoided?
- Which nonverbal behaviors are considered to be more effective and which ineffective during regular staff meetings?
- Should the training be different for men and women, as they display other behaviors?

8. STRENGTHS, LIMITATIONS AND FUTURE RESEARCH

Strengths: The analysis of the leader behavior, using a video - based method is a strength of the study. Video based observations are not often used and hence are an advantage to other studies. Next to that, the use of the different data sources (Follower ratings and Video-based observations), could reduce common bias and are a further strength of the study.

Limitations: One of the limitations of the study was the small sample size used. Of the original sample of 110 tapes, only 20 were selected as (sub) sample for this study due to the constrained time available. As the study was conducted as a bachelor thesis, the study was restricted to a time frame of ten weeks. Consequently, it was not possible to elaborate on it in a way as it would be with more time available.

Regarding the sample, it is also important to mention that the 20 leaders were taken from one dataset of a Public Organization from one country, accordingly the sample might only be representative for this country. The assumptions are based on the videos of the sub sample set and would be more reliable with a bigger and differentiated sample. A differentiated sample means that staff meetings from different countries should be recorded which was not the case for this study. A reason for this is that nonverbal behavior differs between countries. Consequently a behavior shown in regular staff meetings in one country can mean something completely different in another country. As said by Bonaccio et al. (2016) "identical nonverbal behaviors can be defined and interpreted differently among diversified cultures". Another limitation for this study is that the sample was taken from an organization in one industry, the public sector. Within a private organization, the results might be different. For instance, a relational based leadership style is seen more effective in the private sector than in the public one (Bass and Riggio, 2006). Thus leader behaviors within the public sector, which are perceived by followers to be effective, might be perceived as ineffective within the private sector. Thus, the choice of taking the sample from a public organization might limit the study in this sense that it cannot be applied on teams in the private sector. A further limitation to this study is that not all behaviors are included, as the research focuses only on selected specific nonverbal patterns. In addition to that, only the influence of the leader on the work climate is taken into account but followers might also influence the work climate. The work climate is measured by the perception of the followers, however it is not measured by the perception of the leader. These facts might limit the research.

To conclude, it is important to keep in mind that assumptions, results and conclusions made based on the study cannot be generalized.

Future research: The limitations of this study provide space for future research. This means for future studies that it is advised to apply the current research design and think of the limitations of this research. Regarding the mentioned limitations, it is important to include video data of other companies in future research. Next to that, it is recommended to include a bigger sample, samples from other companies as well as from other countries to receive more reliable and representative results. It is also advised to conduct a longitudinal study in the future to see whether the result is the same as the results found in this study. Next to that, it might also be interesting to investigate the range of follower behaviors instead of focusing only on leader behaviors. Due to the difference of the effectiveness perceived by followers in the private and public sector, it is suggested to do research with companies from different sectors.

9. CONCLUSION

The purpose of this paper was to find out whether nonverbal leader behavior relates to leadership effectiveness and how it impacts work climate. For this, the focus lied on the following research question "**To what extent do expressions of nonverbal leader behavior (specifically body orientation and facial expression) during regular staff-meetings relate to follower perceptions of their leadership effectiveness and subsequently to their work's climate?"**

First it needs to be mentioned that only one significant relationship was found between closed smiling and the positive affect perceived by followers. On all the other studied variables, the research has not delivered significant results.

Based on the findings, the research question can be answered as follows: Results have shown that nonverbal behavior does not contribute to leadership effectiveness and that only closed smile had an impact on the positive work climate perceived by followers. As already mentioned in prior sections, it is not possible to generalize the findings. This means that for instance the results of this study are not generalizable to other countries and industries. The non-significant relationships could be attributed to the small sample size (N=20) and the low order constructs. Further research with a bigger sample and high order constructs is necessary to investigate whether there is no relationship between the selected nonverbal behaviors (Body orientation and Mouth movements), leadership effectiveness and work climate. Nevertheless, this research can be used as a base for future research.

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12. APPENDIX

A1: List of Abbreviations

NVB = Nonverbal behavior

VB= Verbal behavior

IV = Independent variable

PANAS= Positive and Negative Affect Schedule

PA= Positive Affect

NA= Negative Affect

DV = Dependent variable

CMC = Computer- mediated communication

EI = Emotional Intelligence

MLQ = Multifactor Leadership Questionnaire

A2: Coefficients Variables resulting from Multiple Regression Analysis

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	SE	Beta	t	Sig.
1	(Constant)	4.320	.881		4.902	.000
	Gender	.424	.304	.342	1.395	.181
	Age	-.005	.013	-.095	-.389	.702
2	Constant	10.454	4.180		2.501	.130
	Gender	2.042	.788	1.649	2.591	.122
	Age	.013	.015	.238	.852	.484
	Expansive body posture dur.	.009	.016	.146	.594	.562
	Expansive body posture freq.	-.229	.081	-3.537	-2.835	.105
	Constricted body posture dur.	.001	.000	.863	1.567	.258
	Constricted body posture freq.	.183	.087	2.976	2.092	.172

Forward leaning dur.	-.005	.003	-4.884	-1.769	.219
Forward leaning freq.	.054	.065	.945	.829	.494
Backward leaning dur.	-.005	.003	-5,250	-1.927	.194
Backward leaning freq.	.016	.018	.234	.870	.476
No leaning dur.	-.005	.003	-4,315	-1.863	.203
No leaning freq.	-.049	.078	-.641	-.628	.594
Open smile dur.	.023	.008	2.743	2.944	.099
Open smile freq.	-.148	.053	-3.393	-2.804	.107
Closed smile dur.	.026	.017	.826	1.473	.279
Closed smile freq.	-.040	.016	-.415	-.666	.574
Lip corners down dur.	.011	.006	.633	1.917	.195
Lip corners down freq.	.031	.067	.328	.461	.690

Note: dur. = duration freq.= frequency B= unstandardized Beta SE= Standard error

Dependent variable: Follower Ratings of PANAS positive

Predictors in Model 1: Age, Gender

Predictors in Model 2: Expansive body posture dur., Expansive body posture freq., Constricted body posture dur., Constricted body posture freq., Forward leaning dur., Forward leaning freq., Backward leaning dur., Backward leaning freq., No leaning dur., No leaning freq., Open smile dur., Open smile freq., Closed smile dur., Closed smile freq., Lip corners down dur., Lip corners down freq.

A3: Interpretation of Cohen's Kappa

Kappa	**Agreement**
≤ 0	no agreement
0.01-0.20	slight agreement
0.21-0.40	fair agreement
0.41-0.60	Substantial agreement
0.81-1.00	almost perfect agreement

McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia Medica*, *22*(3), 276–282.