The Relationship between Leadership Behaviours and Team and Individual Performance: the Mediating Role of Meeting Effectiveness

Author: Amber Bokkens
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,
The aim of any organization is to maximize the firm's performance on the team and individual level. To achieve this, the influences of the team and individual performance should be optimized. One of these influences are the behaviours performed by team leaders. Leaders should optimize the behaviour they perform within team meetings in such a way that it maximizes performance. Therefore, this research examines the relationship between three effective leadership behaviours and three performance outcomes taking into account the mediating effect of meeting effectiveness. The effective leadership behaviours are 'structuring the conversation', 'informing', and 'challenging others professionally'. The performance outcomes are the team performance, individual performance, and job satisfaction. Within a Dutch governmental organization (n = 114 teams), meetings were video-taped to collect the data on the leadership behaviours. The data on the meeting effectiveness and performance outcomes are collected via surveys. By using quantitative data analyses, the correlation and regression coefficients are determined between the leadership behaviours, meeting effectiveness, and performance outcomes. A mediator analysis is applied to test the statistical significance of the mediating role of meeting effectiveness. From the data analyses it is concluded that 'structuring the conversation' negatively relates to team performance, rated by team members, with a significant mediating effect of the meeting effectiveness. 'Structuring the conversation' is further indirectly related to the other performance outcomes through meeting effectiveness, with negative coefficients. According to the data analyses, 'informing' does not significantly influence the meeting effectiveness nor the performance outcomes. Whereas earlier research discovered positive relations for 'informing' behaviour. 'Challenging other professionally' is negatively related to the meeting effectiveness, but is slightly positively related to the team performance and job satisfaction. Further the meeting effectiveness is a positive predictor of the team performance, individual performance, and job satisfaction.

Graduation Committee members:
J.G.W.L. Smits, MSc
Dr. D.H. Van Dun

Keywords
Effective leadership behaviours, meeting effectiveness, team performance, individual performance, job satisfaction, hierarchical teams, team leaders

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

CC-BY-NC

1. INTRODUCTION

The aim of an organization is to maximize the firm's value and its performance on the organizational, team, and individual level. To achieve this, the factors that influence the firm's performance should be optimized. An important influencer of the performance on the team and individual level are the behaviours performed by team leaders (Druskat, 2003; Judge, 2004; Srivastava, 2006). The leadership behaviours of a team leader should be effective in order to maximize the team and individual performance. Effective leadership is defined as leading and facilitating several interrelated organizational, team, and task-level processes (Hoogeboom & Wilderom, 2015) such that it contributes to the organizational, team, and individual performance. The responsibilities of team leaders are facilitating these processes, which include among others decision making, brainstorming, prioritizing and clarifying tasks (Hoogeboom & Wilderom, 2015).

This research focusses on the team leaders of hierarchical teams and the leadership behaviours they display within team meetings. The relationship between the effective leadership behaviours and the team and individual performance of the teams is examined. Within the hierarchical work teams there is a clear hierarchy amongst the team members (or followers), and the team leaders have the formal function of being a leader and will therefore perform the leadership behaviours (Van der Weide, 2004).

Earlier research has studied the relationship between leadership behaviours and leader effectiveness, and the relationship between leadership styles and effectiveness (Deindert, et al. 2013; Dun, et al., 2016; Hoda, Murugesan, 2016; Hoogeboom, Wilderom, 2015). In this research, the effect of observed leadership behaviours on the team and individual performance will be examined. This research focus has been recommended by Van der Weide and Wilderom (2004). They recommend conducting a research on discovering the richest and best behavioural combination that an effective leader can display. This research will contribute to this recommendation by analysing the influence of three effective leadership behaviours on the team and individual performance. Furthermore, this paper analyses the mediating effect of meeting effectiveness. Influencers and outcomes of meeting effectiveness have been researched before (Gutermann, 2017; Kauffeld, 2012; Lehmann-Willenbrock, 2018), but the mediating role of meeting effectiveness between observed effective leadership behaviours and performance outcomes has not been studied before. This research will thus add on to the literature about leadership behaviours and meeting effectiveness, by discovering their interrelationships and their relationship with performance outcomes.

1.1 This Research

The objective of this research is to determine how three effective leadership behaviours performed by team leaders of hierarchical teams relate to the team and individual performance (or follower performance) with a mediating effect of meeting effectiveness. The focus of this research gives the possibility to predict the effect of the leadership behaviours on several performance outcomes, which will clarify how the effective leadership behaviours can be optimized in order to maximize the firm's performance on the team and individual level.

Effective leadership behaviour is conceptualized in three behaviours, which have been found important in earlier research about highly effective leaders and high performing teams. (Deindert, et al., 2015; Dun, et al., 2016; Hoda, et al., 2013; Hoogeboom & Wilderom, 2015) (table 1). The leadership behaviours analysed in this research are 'structuring the conversation', 'informing' and 'challenging others professionally'. These behaviours contribute to achieving high performance according to the literature (Deindert, et al., 2015; Dun, et al., 2016; Hoda, et al., 2013; Hoogeboom & Wilderom, 2015) and cover a large range of the leadership behaviour construct.

In order to explain the relationship between the three effective leadership behaviours and the team and individual performance, 'meeting effectiveness' will mediate between the constructs. The meeting effectiveness is the degree in which the meetings are productive and problem-solving, facilitate decision-making, and have added value (Lehmann-Willenbrock, 2018; Oomen, 2017). Meeting effectiveness is chosen as the mediator since it is affected by meeting interactions, meeting leadership and leader's work engagement (Gutermann, et al., 2017; Kauffeld & Lehmann-Willenbrock, 2012; Lehmann-Willenbrock, et al., 2018) and it affects employee engagement, team and organizational outcomes (Lehmann-Willenbrock et al., 2018).

From the research objective, the following research question to answer in this research is formulated:

How do three effective leadership behaviours (i.e. structuring the conversation, informing, and challenging others professionally) displayed by team leaders during work meetings relate to the team and individual performance?

In order to answer this question, several sub-questions are derived from the research question. The sub-questions are:

- What is the relationship between the effective leadership behaviours, performed by leaders in meetings, and the meeting effectiveness?
- What is the relationship between the meeting effectiveness and the performance outcomes?
- What is the relationship between the effective leadership behaviour and the performance outcomes? And how can this be explained by the mediating effect of meeting effectiveness?

2. THEORETICAL FRAMEWORK

2.1 Effective Leadership Behaviours and Meeting Effectiveness

Several leadership behaviours that contribute to the effectiveness of team leaders are described in the literature, which will be discussed below. Leadership behaviours are defined as observable verbal actions of team leaders in interaction with their team members in an organizational setting (Dun, 2016; Szabo, 2001) According to Hoda et al. (2013), leadership should be light-touch and adaptive, providing feedback and subtle direction, the responsibilities of leaders are aligning people, obtaining resources, and motivating their teams. Other relevant leadership behaviours are the highly prioritized work behaviours of effective lean middle managers researched by Van Dun (Dun, Hicks, & Wilderom, 2016). The highest ranked behaviours of effective managers are active listening, structuring the conversation, visioning, informing, and agreeing. Other research has shown that the five most effective leader behaviours in staff meetings are listening, providing direction, structuring the conversation, task monitoring, and encouraging (Hoogeboom & Wilderom, 2015). Next to that, behaviours important for transformational leadership, which is a supportive and facilitative leadership style, are sharing the vision and mission, motivating and inspiring, stimulating innovation and creativity, and providing learning opportunities (Deinert, et al., 2015).

All the aforementioned behaviours are perceived as important leadership behaviours that contribute to achieving highly effective team leaders and teams according to the literature

Table 1: Effective leadership behaviours found important in the literature, and researched in this paper.

Van Dun et al. (2016)	Hoda et al. (2013)	Transformational leadership	Hoogeboom & Wilderom (2015)	This research paper
Structuring the conversation	Setting direction	Share vision, values, mission	Providing direction	Structuring the conversation
Visioning	Providing feedback	Motivating and inspiring	Structuring the conversation	Informing
Informing	Motivating teams	Stimulate innovation and creativity	Task monitoring	Challenging professionally
Active listening	Aligning people	Provide learning opportunities	Encouraging	
Agreeing	Obtaining resources		Listening	

(Deindert, 2015; Dun, 2016; Hoda, 2013; Hoogeboom & Wilderom, 2015). The selection of the effective leadership behaviours analysed in this research is based on how often the effective leadership behaviours are mentioned as important in earlier work, and as such that a broad range of the effective leadership construct is covered, because effective leaders perform both task-related and relation-related behaviours (Van der Weide, 2004). Task-related behaviours focus on a high efficient use of resources and personnel and a high reliability of the operations and products, whereas relation-related behaviours focus on a strong employee commitment and high mutual trust and cooperation within the teams (Dun, 2016; Yukl, 2002). Table 1 gives an overview of the leadership behaviours discussed in earlier research and those analysed in this research.

Within this research, the meeting effectiveness of a team is the mediator between the effective leadership behaviours and the team and individual performance. "Good meetings are places where trust among employees grows, where leader-follower relationships are shaped and maintained, where positive leadership influence is executed, and where team dynamics are effectively managed for positive outcomes." (Lehmann-Willenbrock, et al., 2018, p. 33). The factors influencing the effectiveness of meetings are meeting interactions of team-members and leaders, meeting leadership and leader's work engagement (Gutermann et al., 2017; Kauffeld & Lehmann-Willenbrock, 2012; Lehmann-Willenbrock et al., 2018). The meeting interactions imply problem-focused communication, structuring and organizing the discussion, relational interactions, and action-oriented communication (Kauffeld & Lehmann-Willenbrock, 2012). The effective leadership behaviours performed in meetings are the determinants of the meeting interactions and meeting leadership. The effective leadership behaviours will therefore relate to the meeting effectiveness of a team.

The effective leadership behaviours analysed in this research are 'structuring the conversation, 'informing' and 'challenging others professionally' (table 1). 'Structuring the conversation' is a behaviour related to setting the direction of the team and the team meeting. This concerns proceedings in which a leader takes the lead in the meetings concerning the course and structure of the conversation. According to Van Dun (2016) and Hoogeboom (2015), 'structuring the conversation' is a meeting behaviour often performed by effective leaders. The reason therefore is that 'structuring the conversation' is a task-related behaviour that organizes work processes in meetings that define team tasks, goals, and outcomes, which thereby supports the team performance (van der Haar, 2017). In this research, the effect of this behaviour on the meeting effectiveness will be determined, even as the effect of this behaviour on the performance outcomes, when controlling for the meeting effectiveness as a mediator. Hence, the following hypotheses according 'structuring the conversation' will be tested in this research:

Hypothesis 1a: The effective leadership behaviour 'structuring the conversation' is positively related to the meeting effectiveness.

Hypothesis 1b: The relationship between 'structuring the conversation' and the performance outcomes is mediated by the meeting effectiveness.

'Informing' is defined as notifying the team members about important circumstances. The team leader performs behaviour in which he or she neutrally reports information or shares an (external) message. Van Dun (2016) mentioned 'informing' as an important behaviour that is often displayed by leaders in meetings. Deindert (2015) also mentioned comparable behaviours to 'informing' as important for achieving high team performance. Sharing information within meeting leads to a better performance, since it contributes to improved decision making, better problem solving, and enhanced creativity within teams (Lee, 2010). The following two hypotheses are constructed to determine the relationship between 'informing' and the meeting effectiveness and the performance outcomes:

Hypothesis 2a: The effective leadership behaviour 'informing' is positively related to meeting effectiveness.

Hypothesis 2b: The relationship between 'informing' and the performance outcomes is mediated by the meeting effectiveness.

The third behaviour, 'challenging others professionally' concerns behaviour of a team leader who asks other team members on their own opinion, ideas and visions regarding business topics. Further behaviours in this dimension concern asking others for input, suggestions, and future actions to create problem-solving input. This behaviour is relation-related. Comparable behaviours have been mentioned as important in the literature about agile leadership (Hoda, et al., 2013), and effective leadership (Hoogeboom & Wilderom, 2015). A comparable behaviour to 'challenging others professionally' is intellectual stimulation, which is a component of transformational leadership (Deindert, et al., 2015). Intellectual stimulation is defined as behaviours performed by a leader to challenge team members to re-examine their assumptions about work and rethink how this work can be performed (Podakoff, 1990). Employees will be stimulated to analyse all facets of problems and rethink alternative ways of problem solving (Birasnav, 2014). This behaviour will therefore positively influence the problem-solving and productivity of a team, and will thereby contribute to the performance outcomes. The effect of this behaviour is tested with the following hypotheses:

Hypothesis 3a: The effective leadership behaviour 'challenging others professionally' is positively related to meeting effectiveness.

Hypothesis 3b: The relationship between 'challenging others professionally' and the performance outcomes is mediated by the meeting effectiveness.

2.2 Meeting Effectiveness and Performance Outcomes

Meetings are places where goals, strategies, tasks and responsibilities are specified and divided (Kauffed, 2012), these practices create alignment among the team members to work towards a common goal, which positively influences the productivity, strength of the team and the performance on the team and individual level. Within meetings, also decisions are made and problems are solved (Kauffeld, 2012), this determines the direction of the team and contributes to fulfilling operational tasks. Therefore, effective meetings positively influence the performance of the team and individuals (Lehmann-Willenbrock, 2018). Within effective meetings, the leader executes positive influence and manages team dynamics effectively with the aim of achieving positive outcomes (Lehmann-Willenbrock, 2018). The meeting interactions, meeting leadership and leader's work engagement are, as discussed, influencers of the meeting effectiveness (Gutermann et al., 2017; Kauffeld & Lehmann-Willenbrock, 2012; Lehmann-Willenbrock et al., 2018) which in turn affect the team performance, individual performance and the employee engagement (Kauffed, 2012; Lehmann-Willenbrock, 2018). Therefore, the meeting effectiveness has been chosen as the mediator between the leadership behaviours and the performance outcomes.

The team and individual performance can be conceptualized in how effective the teams and individuals are within the organization. Effectiveness is defined as "the extent in which the project goals are met, the expected product quality is realized, and the amount of work is realized within the scope of the project by effectively and efficiently carrying out tasks." (Oomen et al., 2017, p. 134). Effectiveness can be divided in performance outcomes and attitudinal outcomes (Kirkman & Rosen, 1999). Examples of performance outcomes are productivity, proactivity, and customer service. Attitudinal outcomes are job satisfaction, organizational commitment and team commitment.

In this research, the performance outcomes are measured by the team performance and the individual performance. The measures on the team and individual performance are based on the perceived performance level, effectiveness, number of mistakes and quality delivery of the teams (Gibson, Cooper, & Conger, 2009). The following hypothesis will be tested according to the effect of the meeting effectiveness on the team performance:

Hypothesis 4: Meeting effectiveness is positively related to team performance.

The individual performance is measured in the same way as the team performance but with a focus on the team members within a team. The relationship between the meeting effectiveness and the individual performance can, even as the relation with the team performance, be explained by the improved alignment, productivity and problem-solving created in effective meetings. The fifth hypothesis is constructed to test the relation between the meeting effectiveness and the individual performance:

Hypothesis 5: Meeting effectiveness is positively related to individual performance of the team members.

Furthermore, one attitudinal outcome will also be considered, which is the job satisfaction of the team members within a team. The job satisfaction indicates how team members feel and think about their job within the organization (Thompson & Phua, 2012). Within effective meetings, trust among employees grows and leader-follower relations are established and maintained (Gutermann et al., 2017; Lehmann-Willenbrock, 2018). This positively influences the meeting satisfaction of the team members, which is a facet of job satisfaction (Kauffeld, 2012; Rogelberg, 2010). An effective meeting will thus result in a higher job satisfaction. This relationship is tested with the sixth hypothesis:

Hypothesis 6: Meeting effectiveness is positively related to the job satisfaction of the team members.

In the conceptual framework (figure 1) the constructs of the effective leadership behaviours, meeting effectiveness and performance outcomes are visualized. This framework is based on the input-process-output model. The conceptual framework visualizes the relationships between the constructs and the hypotheses.

3. METHODS

3.1 Research Design and Data Collection

The data necessary to conduct the research is collected within one organization. This organization is a large Dutch governmental organization with a hierarchical organizational structure. Within this organization, 114 teams with in total approximately 1600 respondents are analysed. The formal team leaders of the hierarchical teams are analysed and compared on their effective leadership behaviours. The teams are compared on

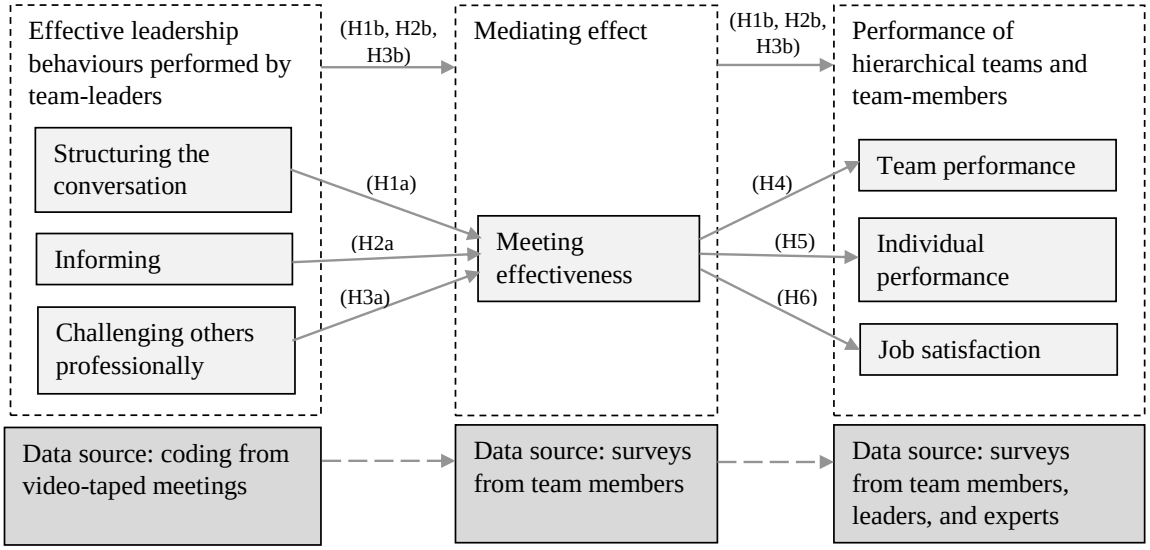

Figure 1: Conceptual framework with expected relationships between leadership behaviours, meeting effectiveness, and performance

their meeting effectiveness, team and individual performance, and job satisfaction.

The data collection concerning the leadership behaviours is done via coding video-tapes from the meetings within the governmental organizational. The data on the meeting effectiveness, team performance, individual performance and job satisfaction is collected via a survey answered by either team members, team leaders or experts, who are peers or bosses of the team leaders.

The data analysis will be based on quantitative data analyses in SPSS from the data set collected from 114 teams. Descriptive statistics will be determined for the length and frequency of the leadership behaviours, and also for the scores on the meeting effectiveness and on the performance outcomes. To analyse the relationships between the leadership behaviours, meeting effectiveness and performance outcomes, the correlations and regressions will be determined. The correlations will be based on Pearson's correlations. The regression will be a hierarchical regression model (Lewis, 2007) where the independent variables and the mediator will be included in different steps to determine their influence on the dependent variable. In the first step, four control variables are implemented, these control variables are the gender and age of the team leader and of the team members (Bass, 1996; Eagly, 1995; Liden, 1996). In model 2, 'structuring the conversation' is added, and in model 3, 'informing' and 'challenging others professionally' are added. The meeting effectiveness is added in model 4. 'Structuring the conversation' is added in model 2 to analyse more clearly the effects of this behaviour, since this behaviour shows interesting correlations. The hierarchical regression is determined for the all the performance outcomes. The standardized regression coefficients will be reported to make a better comparison.

After the correlation and regression analyses, a mediator analysis, based on Baron and Kenny (1986), is conducted to analyse the influence of meeting effectiveness as a mediator. A mediator is established when the following conditions hold: (1) the independent variable relates to the dependent variable, (2) the independent variable relates to the mediator, (3) the mediator relates to the dependent variable, and (4) the strength of the relation between the independent and dependent variable decreases when the mediator is added to the model (Baron & Kenny, 1986). The mediator analysis is tested with the bootstrap macro of Hayes (2009) in SPSS. With the bootstrap analysis, the data is resampled 5000 times to create robust coefficients. With these values, the significance of the direct and indirect relationship between the independent and dependent variables, when controlling for the mediator, are determined.

The results from the data analyses will either support or not support the hypotheses, and together this will formulate an answer to the research question.

3.2 Sample

From the governmental organization, 114 teams and team leaders have been studied. The sample of team leaders exists of 74.3% male team leaders with a mean age of 51 years. The mean number of years of working for this organization is 9.5 years, of which 2.5 years in their current teams. The team leaders have, on average, 13 years of experience in leading a team. Of the team leaders, 41.7% has a degree of the university of applied sciences, and 38.9% has a master's degree. The sample of the team members exists of 64.3% male and the mean age is 49 years. The mean number of years working within the governmental organization is 24 years, of which 3.9 years within the current team. Of the team members, 39.2% have a degree of the secondary vocational education, and 36.8% have a degree of the university of applied sciences.

3.3 Measures

3.3.1 Team Performance

The survey items on the team performance are rated by the team leaders, team members and experts. The four survey items that measure the team performance are: 'this team is effective', 'this team makes few mistakes', 'this team delivers high quality work', and 'this team continuously performs at high levels' (Gibson et al., 2009; Zellmer-Bruhn & Gibson, 2006). The Cronbach's alpha (α) on these items is .89[1]. For analysis, the constructs measured by the survey are aggregated to the team level. Therefore, the average score on the four survey items is determined for the team leader ratings of the team performance. For the team performance rated by the team members, the interrater reliability is measured with an ICC1 of .20 ($p < .01$) and an ICC2 of .75 ($p < .01$), which are reliable ICC scores[2], therefore it is possible to aggregate the team member ratings to the team level. The average scores of the team members are aggregated to compute one value for the team performance rated by team members per team. The ratings of the team leaders and team members are based on a Likert scale from 1 (very inaccurate) to 7 (very accurate). The team performance is also rated by the experts, the teams have either one, two or three expert ratings ($ICC1 = .30$, $ICC2 = .48$, $p = .002$). The ICC2 score is somewhat lower, which implies that the expert raters do not always agree on the score they gave, this is taken into account when analysing the data. For the teams with multiple expert ratings, the average of the expert ratings is determined. The expert ratings are based on a grade from 1 (very low) to 10 (very high).

3.3.2 Individual Performance

The team leaders rated all its team members on their individual performance based on a grade from 1 to 10. The four items ($\alpha = .95$) indicating the individual performance are: 'this team member is effective', 'this team member makes few mistakes', 'this team member delivers high quality work', and 'this team member continuously performs at high levels' (Gibson et al., 2009). The average score on these four variables determines the individual performance of each team member. To compute the individual performance on the team-level, the individual scores are averaged to one value.

3.3.3 Job Satisfaction

The job satisfaction of the team members is rated by the team members themselves. The four items ($\alpha = .91$) that measure the job satisfaction are: 'I find real enjoyment in my work', 'I like my job better that the average person', 'most days I am enthusiastic about my work', 'I feel fairly well satisfied with my present job' (Thompson & Phua, 2012). The scores on these four

[1] The Cronbach's alpha indicates the consistency of the survey items to measure one construct, (Santos, 1999). A value higher than .70 is perceived as acceptable.

[2] The ICC1 and ICC2 represent the interrater reliability of the team-level constructs measured by a group of respondents. The interrater reliability concerns the degree of agreement among the raters within a team (van Mierlo, 2009). The ICC1 is the correlation between two randomly drawn individuals from a single random group. The ICC2 represents the reliability of the group mean scores. The values on the ICC1 and ICC2 assess whether aggregating to the group level is appropriate. This is appropriate when the ICC1 is statistically significant and the ICC2 has a value above .70 (van Mierlo, 2009).

survey items are averaged to the team-level. This will provide one value that indicates the average job satisfaction of the team members in each team. The values range from 1 (very inaccurate) to 7 (very accurate).

3.3.4 Meeting Effectiveness

The meeting effectiveness of the teams is rated by the team members. The survey items that indicate the meeting effectiveness are ($\alpha = .87$): 'the meetings are a more satisfying experience than a frustrating one', 'overall, our meetings are productive', and 'the meetings I attend are worth my time' (Nixon & Littlepage, 1992; Rogelberg, et al., 2006). The ICC1 score is .16 ($p < .01$) and ICC2 is .69 ($p < .01$), making it appropriate to aggregate the scores to the team level. Hence, the meeting effectiveness scores are aggregated on the team level. This score ranges from 1 (very inaccurate) to 7 (very accurate)

3.3.5 Effective Leadership Behaviours

The data on the effective leadership behaviours are collected via video-tapes. The video-tapes of the team meetings are coded according to a verbal codebook including the three mutually exclusive leadership behaviours. The videos are coded by two researchers such that a valid and reliable coded file is constructed. For each behaviour, two variables are constructed, one indicating the frequency and one indicating the duration of the behaviour, both in relative percentages. For the leadership behaviours, only the data on the team leaders is considered.

To clarify when a leader performs one of the leadership behaviours, some example statements are mentioned. Verbal behaviours that are examples of 'structuring the conversation' are: 'let's move on to the next topic', 'we will discuss this topic at the end of the meeting', 'we will stop the meeting at 3 o'clock'. Example statements for the 'informing' behaviour are: 'the profits for this month are increased with x percent', 'the management wants us to present the marketing plan within two weeks', and 'the client will visit us tomorrow to discuss the plans'. Statements characterizing 'challenging others professionally' are among others: 'what is your opinion on this topic or goal?', 'how do you think that we can tackle this problem?', 'do you have something to add to this, or are there things left unsaid?'.

3.4 Managing Common Source Bias

The meeting effectiveness, as the mediator, and the team performance and individual performance, as dependent variables, are rated by the team members. Since these constructs are related and measured by the same source, a common source bias might arise. A common source bias occurs when the variation between two constructs is a function of a common measurement or common source used to gather the data (Meier, 2013). When this occurs, the correlations between the constructs are not totally reliable. The effect of the common source bias should thus be analysed and taken into account when interpreting the results on these variables.

One test to analyse the common source bias is the Harman's one factor test, this test checks whether there is a single factor accountable for the variance in the data (Podsakoff, 2003; Tehseen, 2017). When one variable explains all or almost all variance in the data, the common source bias is an issue. When conducting this test on the individual level, all survey items that are scored by the team members on the meeting effectiveness, team performance, and job satisfaction are included. From this test on the individual level, it became clear that three factors explained 78.34% of the variance in this data. The first factor explained the variance for 41.82%. Because there is not a single factor accountable for all the variance, the common source bias does not cause problems on the individual level data set.

When conducting this test on the team level, where the team level aggregated scores for all constructs are analysed, a single unrotated factor explains for 44.79% the variance in the data. This percentage is still under 50%, but since there is only one factor explaining the variance, this indicates that a common source bias might occur. This common source bias is mainly caused by the team performance rated by team members, since the variance in this variable explained in the factors has the highest proportion ($h^2 = .64$). The common source bias on the team performance rated by team members will be minimized by considering independent data sources (Favero, 2015). By using an independent data source, the mediator and dependent variable are not rated by the same group of respondents anymore. Therefore, the ratings of the team leaders and experts on the team performance will be taken into account. The results of the team member ratings will be compared to the results of the leader and expert ratings, considering that the leader and expert rating represent more unbiased scores. The team member ratings will still be perceived as reliable when the value differences accountable from the common source bias are minor.

4. RESULTS

4.1 'Structuring the Conversation' and Performance Outcomes

In table 2, the means, standard deviations and Pearson's correlations for the leadership behaviours, performance outcomes and meeting effectiveness are displayed.

The correlation and regression values of the relative frequency and relative duration of 'structuring the conversation' with the meeting effectiveness are significant (table 2, table 3). The regression coefficients have a negative value, which implies that teams where leaders often structure the conversation in meetings will have a lower meeting effectiveness. Next to that, 'structuring the conversation' is directly related to the team performance rated by the team members, with a significant correlation and regression coefficient for both the relative frequency and relative duration of the behaviour (table 2, table 3). These regression coefficients are also negative, indicating the negative influence of 'structuring the behaviour' on the team performance.

In the hierarchical regression analysis (Lewis, 2007), the coefficients of 'structuring the conversation' for the team performance rated by team members are significant in model 2 and model 3, and decreasing to an insignificant value is model 4. This indicates that the meeting effectiveness functions as a mediator between 'structuring the conversation' and the team performance rated by team members.

To statistically test the effect of the mediator, the mediation analysis is applied (Baron, 1986; Hayes, 2009). From the mediation analysis, the following can be concluded. First, the regression of 'structuring the conversation', which is the independent variable, with the team performance rated by team members, the dependent variable, when ignoring the mediator, is significant ($b = -.25$, $t(111) = -2.67$, $p < .01$). Second, 'structuring the conversation' significantly relates to the meeting effectiveness, which is the mediator, ($b = -.20$, $t(111) = -2.18$, $p = .03$). Third, also a significant regression of the meeting effectiveness on the team performance rated by team members ($b = .52$, $t(110) = 6.40$, $p < .01$) is analysed. Fourth, the relation of 'structuring the conversation' on the team performance rated by team members, when controlling for the meeting effectiveness as mediator, is characterized by $b = -.14$, $t(110) = -1.76$, $p = .08$. From this analysis, it can be concluded that including the meeting effectiveness in de model weakens the direct effect and the significance of 'structuring the conversation' on the team performance. Therefore, it can be concluded that the meeting

effectiveness mediates the relationship between 'structuring the conversation' and the team performance rated by team members. Figure 2[3] displays the mediation analysis.

In order to correct for the common source bias in the team performance rated by team members, the results of the team member ratings will be compared to the results of the leader and expert ratings (Favero, 2015). The correlation and regression coefficients for the leader ratings and the expert ratings are very similar (table 2, table 3). For the direct relationship between 'structuring the conversation' and the team performance (table 2, table 3), the team member rating has higher coefficients than the leader and expert ratings. Since these constructs are not measures by the same source, this difference is assigned to a perception difference between the raters (Hooijberg, 2000). For the relationship between the meeting effectiveness and the team performance (table 2, table 3), the coefficients of the team members are also higher. This can be explained by the common source bias or by perception differences. It is assumed that the perception difference in the relationship between meeting effectiveness and team performance equals the perception difference in the relationship between 'structuring the conversation' and the team performance. Then only a minor difference between the ratings of the leaders, team members and experts remains for the relationship between the meeting effectiveness and team performance, this difference is assigned to the common source bias. Since this is a minor difference, the impact of the common source bias is small, therefore the team member ratings are still reliable and used for the data analysis.

For the performance outcomes other than the team performance rated by team members, there is no direct relation between the behaviour and the performance outcomes, therefore the mediator

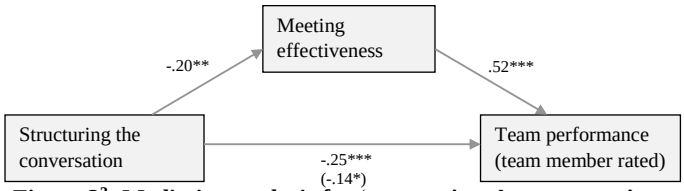

Figure 2[3]: Mediation analysis for 'structuring the conversation (frequency) and team performance (*p < .01; **p < .05; *p < .10; Standardized coefficients are used)**

analysis could not be performed. Nevertheless, according to Kenny, et al. (1998) and Holmbeck (1997), an indirect effect can still be discovered when the independent variable relates to the mediator, and the mediator relates to the dependent variable, even if there is no significant relation between the independent and dependent variable. 'Structuring the conversation' is negatively related to the meeting effectiveness. And the meeting effectiveness has a significant positive relationship with the team performance, individual performance, and job satisfaction (table 2, table 3). Therefore, 'structuring the conversation' indirectly relates to the performance outcomes through meeting effectiveness.

To summarize, it can be concluded that the effective leadership behaviour 'structuring the conversation' is significantly related to the meeting effectiveness with a negative coefficient. *Hypothesis 1a* is not supported on the direction of the relationship, which is negative instead of positive as expected, unless that a significant relationship is discovered. Furthermore, 'structuring the conversation' has a significant negative relationship with the team performance rated by the team members with a mediating effect of the meeting effectiveness.

Table 2: Pearson's correlations of leadership behaviour, performance outcomes, and meeting effectiveness

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11
Structuring the conversation	**1. Relative frequency**	11.54	5.06	-										
	2. Relative duration	8.50	5.86	.85***	-									
Informing	**3. Relative frequency**	27.86	8.51	-.53***	-.53***	-								
	4. Relative duration	47.06	13.15	-.47***	-.59***	.79***	-							
Challenging professionally	**5. Relative frequency**	3.55	3.24	.26***	.30***	-.51***	-.38***	-						
	6. Relative duration	2.99	2.79	.23**	.28***	-.44***	-.37***	.87***	-					
Team performance	**7. Leader rated**	5.50	.83	-.09	-.09	-.09	.07	-.02	-.00	-				
	8. Team member rated	4.97	.54	-.25***	-.33***	.12	.19**	-.10	-.05	.47***	-			
	9. Expert rated	6.90	.78	-.09	-.08	.04	.06	.01	.05	.33***	.33***	-		
Individual performance	**10. Leader rated**	6.85	.59	-.10	-.03	.04	.03	-.07	-.03	.23**	.38***	.22**	-	
Job satisfaction	**11. Follower rated**	5.56	.42	-.06	.03	.03	-.08	.03	.10	.32***	.37***	.31***	.36***	-
Meeting effectiveness	**12. Team member rated**	4.86	.55	-.20**	-.26***	.08	.10	-.18*	-.14	.36***	.54**	.33***	.28***	.33***

***p < .01; **p < .05; *p < .10 two-tailed

[3] A similar mediation analysis is conducted for the relation between 'structuring the conversation' (duration) and the team performance rated by team members. See figure 3 in the appendix for the figure.

Table 3[4]: Hierarchical regression of effective leadership behaviours (frequency) on performance outcomes

	Meeting effectiveness (team member rated)			Team performance (leader rated)				Team performance (team member rated)				Team performance (expert rated)				Individual performance (leader rated)				Job satisfaction (follower rated)			
	M1	**M2**	**M3**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**
Gender of leader	.21**	.20**	.19*	-.02	.03	-.03	-.09	.01	-.01	-.01	-.11	-.02	-.03	-.02	-.10	.05	.04	.02	-.02	.02	.01	.01	-.06
Gender of team members	-.11	-.10	-.09	-.25**	-.24**	-.24**	-.21**	-.19*	-.17	-.17	-.12	-.07	-.06	-.06	-.03	-.06	-.05	-.05	-.05	-.11	-.10	-.10	-.07
Age of leader	.04	.05	.01	.24**	.24**	.24**	.24**	.00	.02	.01	.01	.12	.13	.15	.14	-.05	-.04	-.07	-.05	.18*	.19*	.19*	.19**
Average age of team members	-.14	-.14	-.18*	-.18*	-.18*	-.17*	-.11	-.07	-.07	-.09	.01	-.04	-.04	-.03	.05	-.07	-.07	-.10	-.07	-.17	-.17	-.16	-.09
Structuring the conversation		-.21**	-.19*		-.11	-.16	-.09		-.24**	-.20*	-.09		-.10	-.11	-.03		-.11	-.13	-.07		-.10	-.09	-.01
Informing			-.06			-.10	-.08			.07	.10			.02	.04			-.10	-.07			.05	-.07
Challenging others professionally			-.26**			-.02	.07			-.04	.10			.08	.18*			-.16	-.10			.07	.17
Meeting effectiveness							.35***				.56***				.40***				.25**				.40***
R^2	.07	.11	.16	.14	.15	.16	.26	.03	.09	.09	.35	.02	.03	.04	.17	.01	.03	.04	.09	.06	.07	.07	.21
ΔR^2	.07	.04**	.05*	.14***	.01	.01	.10***	.03	.06**	.01	.26***	.02	.01	.01	.13***	.01	.01	.02	.05**	.06	.01	.00	.14***

*** p < 0.01; ** p < 0.05; *p < 0.10 two-tailed; Note: standardized coefficients are used

[4] For the duration of the effective leadership behaviours, the hierarchical regression analysis is also conducted. These values are comparable to the frequencies of the behaviours. See table 6 in the appendix.

Therefore, *hypothesis 1b* is supported by the data analysis for the team performance rated by team members. For the other performance outcomes, an indirect effect of 'structuring the conversation' is discovered.

4.2 'Informing' and Performance Outcomes

'Informing' is, from the three effective leadership behaviours, the most often and longest performed behaviour by team leaders in team meetings, and therefore an important leadership behaviour.

Only the relative duration of 'informing' is significantly correlated directly to the team performance rated by team members (appendix, table 6). This positive significant correlation is not discovered for the relative frequency of the behaviour, and also the regression coefficients in the hierarchical regression are not significant. It is therefore concluded that this significant correlation is not strong enough to consider. Furthermore, 'Informing' does not have a significant correlation or regression with either the meeting effectiveness nor the other performance outcomes (table 2, table 3). Due to the lack of significant relationships, a mediator analysis is not conducted. Indirect effects could also not be discovered. From the data analyses, it is not possible to establish a generalized explanation of the effect of 'informing' on the meeting effectiveness or the performance outcomes.

Since 'informing' does not have a significant relationship with either the meeting effectiveness or a performance outcome, both *hypothesis 2a* and *hypothesis 2b* are not supported by the results from the data analyses.

4.3 'Challenging others Professionally' and Performance Outcomes

The relation-related behaviour 'challenging others professionally' is a behaviour that is performed to a much lesser extent by team leaders in meetings than the other two behaviours.

'Challenging others professionally' and the meeting effectiveness have a significant correlation on the relative frequency, and a significant regression on the relative frequency and relative duration of the behaviour (table 2, table 3). The coefficients are negative, which implies that the teams wherein leaders perform this behaviour often will have a lower meeting effectiveness. Further, 'challenging other professionally' does not have a significant relationship with any of the performance outcomes (table 2, table 3). For the relation between 'challenging other professionally' and the team performance and job satisfaction, the coefficients are slightly positive although not significant, this is the opposite direction of the relation with the meeting effectiveness.

For the mediation analyses for 'challenging others professionally', not all conditions could be satisfied, since there is no direct relationship between 'challenging other professionally' and a performance outcomes (Hayes, 2009). There is thus no significant relationship of 'challenging others professionally' and a performance outcome with a mediating effect of the meeting effectiveness. Since 'challenging others professionally' is significantly related to the meeting effectiveness, and the meeting effectiveness with the performance outcomes, an indirect effect between 'challenging others professionally' and the performance outcomes can still be concluded (Holmbeck, 1997; Kenny et al., 1998).

To conclude, the relationship between 'challenging others professionally' and the meeting effectiveness is significant with a negative coefficient. *Hypothesis 3a* is not supported by the direction of the discovered relationship, unless that there is a significant relation. *Hypothesis 3b* is also not supported, since no significant relationship between 'challenging others professionally' and the performance outcomes, considering the effect of the mediator, could be discovered. Although, 'challenging others professionally' is indirectly related to the meeting effectiveness through meeting effectiveness.

4.4 Meeting Effectiveness and Performance Outcomes

The meeting effectiveness of the teams is positively correlated with team performance rated by team leaders, team members and experts, individual performance and job satisfaction (table 2). The corresponding regressions coefficients from the hierarchical regression analysis, are also significant for all the performance outcomes (table 3). As mentioned before, the common source bias in the team performance rated by team members does not form a large problem. Therefore it can be concluded that the meeting effectiveness positively influences all the performance outcomes.

Therefore, *hypothesis 4*, *hypothesis 5*, and *hypothesis 6* are supported by the data analyses. Table 7 (appendix) gives an overview of the hypotheses.

5. DISCUSSION

This research examined the influence of three effective leadership behaviours on several performance outcomes. Therewith, this research contributes to the literature on leadership behaviours and meeting effectiveness. It also contributes to determining the best and richest behavioural combination that effective leaders can display (Van der Weide & Wilderom, 2004). From the results section, it can be concluded that the leadership behaviour 'structuring the behaviour' is significantly related to the team performance rated by team members with a mediating effect of meeting effectiveness. The coefficients of 'structuring the conversation' have a negative value. This behaviour is furthermore indirectly related to the other performance outcomes through meeting effectiveness. The leadership behaviour 'informing' does not significantly relate to the meeting effectiveness nor the performance outcomes. 'Challenging others professionally' negatively influences the meeting effectiveness. Whereas, the regression coefficients for 'challenging others professionally' and the team performance and job satisfaction are positive, although not significant. When looking at the meeting effectiveness, this positively influences the team performance, individual performance and job satisfaction. The implications and limitations of this research are discussed below.

5.1 Theoretical Implications

For the leadership behaviour 'structuring the conversation' it was assumed that this behaviour would positively relate to the meeting effectiveness and performance outcomes (Dun, 2016; Hoda, 2013; Hoogeboom, 2015; van der Haar, 2017). From the data analyses, a significant negative relationship of 'structuring the conversation' with the meeting effectiveness and the team performance rated by team members is discovered (table 3). This negative direction can be explained by the structuring behaviour of leaders changing over time to evolve to the needs of the team (van der Haar, 2017). A leader should adjust the way he or she initiates structure within a team based on how the team evolves (Sarin, 2003). This implies that in the early stages of a team, more structuring behaviour is needed to provide support and direction for the team members, whereas in later stages, this behaviour should make room for developing new ideas and creative problem solving (van der Haar, 2017). Therefore, to optimize the team performance, the leadership behaviour 'structuring the conversation' should decrease over time to adopt to the needs of the team. Within the governmental organization, the average

number of years working in the current team is 4 years, which clarifies a lower need of 'structuring the conversation' in the meetings, since the teams have been together for a considerable time.

The leadership behaviour 'informing' lacks significant relationships with the meeting effectiveness and the performance outcomes, whereas a positive relationship was expected (Deinert, 2015; Dun, 2016). When reviewing the literature according informing behaviour within teams, it is found that 'informing' is significantly positively related with the team performance (Srivastava, 2006). 'Informing', which is the process of sharing task-relevant ideas, information and suggestions, improves decision making, problem-solving and creativity in teams, and therefore contributes to the team and individual performance (Lee, 2010). That this positive relationship between 'informing' and the meeting effectiveness and the performance outcomes is not discovered in this research, can be caused by the data being collected within this hierarchical organization. The teams in this governmental organization perform this behaviour approximately equally in high and low performing teams, indicating the high importance of this behaviour for leaders within meetings. Therefore, there could not be a significant relationship between 'informing' and the performance outcomes be discovered. Thus, according to the data from the governmental organization, 'informing' does not influence the meeting effectiveness nor the performance outcomes. Nevertheless, this leadership behaviour is highly relevant to perform within team meetings, and as stated by the literature, it positively influences the performance outcomes.

The relationship of 'challenging others professionally' and the meeting effectiveness and the performance outcomes was expected to be positive (Deindert, et al., 2015; Hoda, et al., 2013; Hoogeboom & Wilderom, 2015). From the data analysis, a significant negative relation is found between the leadership behaviour and the meeting effectiveness, and a positive, although not significant, relation between the behaviour and the team performance and job satisfaction. To explain these relationships, other research papers regarding the leadership behaviour 'challenging others professionally' are reviewed. 'Challenging other professionally' is comparable to the intellectual stimulation behaviour, which is often described in the transformational leadership literature. Intellectual stimulation, and transformational leadership, are positively related to performance on the organizational and team level, because it improves productivity and problem-solving (Birasnav, 2014; García-Morales, 2012; Keller, 2006). Therefore, intellectual stimulation, and thus 'challenging others professionally', will positively influence the team performance. This direction can also be found in the data analyses, although that these values are not significant. The non-significance can be explained by the hierarchical and mechanistic structure of the governmental organization. This structure relies on bureaucracy and formalization and might therefore hinder the implementation of transformational leadership behaviours, since that requires flexibility and discretion (Shivers-Blackwell, 2006; Wright, 2010). Since the organizational structure might not be very suitable for the leadership behaviour 'challenging others professionally', significant relationships could not be discovered between 'challenging others professionally' and the performance outcomes.

The hierarchical organizational structure can also explain why 'challenging others professionally' is negatively related to the meeting effectiveness. In the mechanistic organization, the leadership behaviours in meetings are mainly transactional, and transformational leadership behaviours are performed to a much lesser extent, because these behaviours does not fit with the organizational structure (Shivers-Blackwell, 2006; Wright, 2010). This indicates that the leadership behaviour 'challenging others professionally' is not appropriate within the meetings of the governmental organization, and will therefore decrease the meeting effectiveness of the teams.

There are also some implications that are not directly related to the leadership behaviours. First, the values for the team member ratings are higher than the leader and expert ratings for the relationships between 'structuring the conversation' and the meeting effectiveness and the team performance (table 2, table 3). For the relationship between the meeting effectiveness and the team performance, this can be partially explained by the common source bias. As mentioned before, the common source bias has been solved by the Harman's one factor test (Podsakoff, 2003; Tehseen, 2017) and the comparison to an independent data source (Favero, 2015). This made the effect of the common source bias minor, making the data reliable. Next to that, the higher coefficients for both relations can also be explained by the different perceptions of the leaders, team members and experts on effectiveness. According to the research of Hooijberg (2000), the perceptions on effectiveness of leaders and the experts are similar, whereas the perceptions of the team members differ from the perceptions of the leaders. The perception differences can be explained by the different work priorities of the respondent groups. The priorities of the leaders and experts are relatively similar, therefore these ratings are comparable, which is also recognized in the data analyses. For the team members, the correlations and regressions are higher, which can be explained by the higher importance of 'structuring the conversation' and meeting effectiveness on the work of the team members, when compared with the priorities of the leaders and experts (Hooijberg, 2000). Where 'structuring the conversation' has a negative impact, and the meeting effectiveness a positive impact.

Then, in the hierarchical regression analysis, four control variables are included to correct for their influence on the dependent variable. For the team performance rated by the leaders, the gender of the team members, the age of the leader and age of the team members have significant influence (table 3). The regression analysis implies that more males in a team will be beneficial for the team performance, rated by the leader, whereas research on this topic recommends the importance of gender diversity within teams (Bear, 2011). Next to that, older team leaders and younger team members will contribute to the team performance, as rated by the leaders. According to Yang (2018), having a leader that is older than the team members is associated with higher engagement levels of the team members. Where work engagement is defined as a positive, fulfilling work-related state of mind, which is a predictor of job satisfaction and performance levels (Yang, 2018). This relationship can be explained by the higher perceived experience of an older leader. There is also a significant coefficient from the regression analysis for the gender of the leader on the meeting effectiveness, which implies that a female team leader is beneficial for the meeting effectiveness. According to Eagly (1995), female leaders are more effective in feminine settings, which might indicate a feminine nature in team meetings.

5.2 Limitations

There are some limitations inherent in this research. The research being conducted within one governmental organization with a hierarchical structure is a limitation. The results of the data analysis will indicate how the leadership behaviours and the meeting effectiveness have influence on the performance outcomes within a hierarchical public organization. It would be beneficial to conduct this research also in firms with another organizational culture, or in another sector or country, since the

organizational structure influences the displayed leadership behaviours (Shivers-Blackwell, 2006). This would improve the generalizability of the relationship between the leadership behaviour and the performance outcomes in different contexts. From the studied sample, it is assumed that the 114 analysed teams fairly represent a hierarchical structure, such that a generalized conclusion can be made on the effect of leadership behaviours on the performance outcomes in hierarchical teams.

Another limitation is formed by the common source bias, which decreases the accuracy of the results from the data analyses. The common source bias has been measured by the Harman's one factor test. This test is a simple indicator of the common source bias, but it is also an insensitive test and only a diagnostic technique, it therefore does not control for the common source bias (Podsakoff, 2003; Tehseen, 2017). Unless these drawbacks, this test is most common test in research to indicate the common source bias, and is therefore a sufficient test to analyse the common source bias in this research. After indicating the common source bias, it is solved by making a comparison to an independent data source (Favero, 2015). This comparison indicated that the common source bias had only a minor influence on the rating differences, and therefore the common source bias does not form a problem in this research.

5.3 Practical Implications

This research provides leaders with a clarification on the importance of their displayed leadership behaviours in meetings, and how the leadership behaviours affect the meeting effectiveness and performance outcomes.

The leadership behaviour 'structuring the conversation' is negatively related to the meeting effectiveness and the team performance. The direction of this relationship can be explained by the need of a leader to adapt this behaviour to the needs of the team (Sarin, 2003; Van der Haar, 2017). In the beginning stage of a team, this behaviour should be performed more than in teams that exist longer. For leaders, it is thus of importance to adapt the leadership behaviour 'structuring the conversation' in meetings to the needs of the teams, which means that this behaviour will be performed less over time.

Within this organization, 'informing' is the most often performed behaviour by leaders in meetings, indicating the high importance of this leadership behaviour. From the data analyses, no significant relations between 'informing' and the meeting effectiveness or performance outcomes could be discovered. When analysing the literature, 'informing' positively influences the team performance, because this behaviour improves decision-making, problem-solving and creativity (Lee, 2010; Srivastava, 2006). Managers and leaders should know that 'informing' is an often performed and important leadership behaviour in meetings, and will positively contribute to the team performance.

According to earlier research, 'Challenging others professionally' is a relation-related behaviour that positively influences the team performance (Birasnav, 2014; García-Morales, 2012; Keller, 2006). This relationship is also recognized by the data analyses, although not significant. The relationship between 'challenging others professionally' and the meeting effectiveness is significantly negative. The non-significance can be explained by the hierarchical organizational structure hindering the effectiveness of this behaviour (Shivers-Blackwell, 2006; Wright, 2010). The negative relation can be explained by the behaviour not being suitable in the meetings of the mechanistic organization. For leaders it is useful to know what the characteristics of the organizational structure are and which leadership behaviours fit to that structure and how that contributes to the meeting effectiveness and performance outcomes. For 'challenging others professionally', this means that it is more suitable in dynamic organizations. Within hierarchical organization, 'challenging others professionally' is more appreciated outside meetings than within.

Furthermore, the meeting effectiveness positively influences the team performance, individual performance, and job satisfaction. In order to optimize the performance outcomes, the meeting effectiveness should be maximized. One way a leader can achieve this is by optimizing the leadership behaviours performed in the meetings as explained above.

5.4 Future Research Recommendations

For future research, it is recommended to conduct this research in different organizational structures, since different organizational contexts might reveal different results (Shivers-Blackwell, 2006; Wright, 2010). Repeating this research in organizations with for example an agile organizational structure, within a private or healthcare sector, or in different countries will expand the knowledge on the relationship between the effective leadership behaviour and the performance outcomes in different contexts. This will increase the possibilities to generalize the results and construct a conclusion that is recognizable in all kind of organizational contexts.

Another recommendation for future research is to conduct a longitudinal study on the effect of the leadership behaviours on the meeting effectiveness and the performance outcomes. With a longitudinal study it is possible to analyse several meetings of the same team over a longer period of time, which will give clarification on how the leadership behaviours in meetings evolve over time, and how this affects the performance outcomes (Yee, 1996). This is beneficial since the leadership behaviours are dynamic and changing over time. With the cross-sectional study, as in this research, data on many different variables can be easily collected and many relationships between the variables can be discovered, but it is not possible to see how these variables evolve over time. A longitudinal study will thus provide added clarification on the cause-effect relationships over time.

6. CONCLUSION

This research examines the relationship between three effective leadership behaviours and the team performance, individual performance, and job satisfaction, with a mediating effect of meeting effectiveness. To optimize the meeting effectiveness and the performance outcomes, it should be determined how the leadership behaviours in meetings can best be performed. It is concluded that, 'structuring the conversation' should evolve over time to the needs of the team, and will therefore be performed less over time. 'Informing' will be performed often in meetings due to its high relevance. 'Challenging others professionally' should be adapted to the organizational structure, since this behaviour fits better within dynamic teams than within mechanistic, hierarchical teams. Furthermore, an effective meeting will positively contribute to the team performance, individual performance and job satisfaction.

7. ACKNOWLEDGEMENTS

I would like to thank Jacco G.W.L. Smits, who is my first supervisor, for the support, feedback and tips given during the writing my bachelor thesis. The useful feedback meetings helped me a lot in writing this research. I also want to thank Desirée van Dun, who is my second supervisor, for reviewing my bachelor thesis.

8. REFERENCES

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173-1182.

Bass, B. M., Avolio, B. J., & Atwater, L. (1996). The Transformational and Transactional Leadership of Men and Women. *Applied Psychology*, *45*(1), 5-34. doi:10.1111/j.1464-0597.1996.tb00847.x

Bear, J. B., & Woolley, A. W. (2011). The role of gender in team collaboration and performance. *Interdisciplinary Science Reviews*, *36*(2), 146-153. Retrieved from https://doi.org/10.1179/030801811X13013181961473. doi:10.1179/030801811X13013181961473

Birasnav, M. (2014). Knowledge management and organizational performance in the service industry: The role of transformational leadership beyond the effects of transactional leadership. *Journal of Business Research*, *67*(8), 1622-1629. doi:10.1016/j.jbusres.2013.09.006

Deinert, A., Homan, A. C., Boer, D., Voelpel, S. C., & Gutermann, D. (2015). Transformational leadership sub-dimensions and their link to leaders' personality and performance. *The Leadership Quarterly*, *26*(6), 1095-1120. doi:10.1016/j.leaqua.2015.08.001

Druskat, V. U., & Wheeler, J. V. (2003). Managing from the Boundary: The Effective Leadership of Self-Managing Work Teams. *The Academy of Management Journal*, *46*(4), 435-457. Retrieved from http://www.jstor.org.ezproxy2.utwente.nl/stable/30040637. doi:10.2307/30040637

Dun, D. e. H. v., Hicks, J. N., & Wilderom, C. P. M. (2016). Values and behaviors of effective lean managers: Mixed-methods exploratory research. Retrieved from http://purl.utwente.nl/publications/103434

Eagly, A. H., Karau, S. J., & Makhijani, M. G. (1995). Gender and the Effectiveness of Leaders: A Meta-Analysis. *PSYCHOLOGICAL BULLETIN*, *117*(1), 125.

Favero, N., & Bullock, J. B. (2015). How (not) to solve the problem: An evaluation of scholarly responses to common source bias. *Journal of public administration research and theory*, *25*(1), 285-308. doi:10.1093/jopart/muu020

García-Morales, V. c. J. s., Jiménez-Barrionuevo, M. a. M., & Gutiérrez-Gutiérrez, L. (2012). Transformational leadership influence on organizational performance through organizational learning and innovation. *Journal of Business Research*, *65*(7), 1040-1050. doi:10.1016/j.jbusres.2011.03.005

Gibson, C. B., Cooper, C. D., & Conger, J. A. (2009). Do you see what we see? The complex effects of perceptual distance between leaders and teams. *The Journal of applied psychology*, *94*(1), 62-76. doi:10.1037/a0013073

Gutermann, D., Lehmann-Willenbrock, N., Boer, D., Born, M., & Voelpel, S. C. (2017). How Leaders Affect Followers' Work Engagement and Performance: Integrating Leader−Member Exchange and Crossover Theory. *British Journal of Management*, *28*(2), 299-314. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-8551.12214. doi:10.1111/1467-8551.12214

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, *76*(4), 408-420. Retrieved from https://doi.org/10.1080/03637750903310360. doi:10.1080/03637750903310360

Hoda, R., & Murugesan, L. K. (2016). Multi-level agile project management challenges: A self-organizing team perspective. *journal of systems and software*, *117*, 245-257.

Hoda, R., Noble, J., & Marshall, S. (2013). Self-organizing roles on agile software development teams. *IEEE Transactions on Software Engineering*, *39*(3), 422-444. Retrieved from https://ieeexplore.ieee.org/document/6197202/. doi:10.1109/TSE.2012.30

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of consulting and clinical psychology*, *65*(4), 599.

Hoogeboom, M., & Wilderom, C. (2015). Effective leader behaviors in regularly held staff meetings: Surveyed vs. Videotaped and video-coded observations. In *The Cambridge Handbook of Meeting Science* (pp. 381-412).

Hooijberg, R., & Choi, J. (2000). Which leadership roles matter to whom? an examination of rater effects on perceptions of effectiveness. *The Leadership Quarterly*, *11*(3), 341-364. Retrieved from http://www.sciencedirect.com/science/article/pii/S1048984300000448. doi:https://doi.org/10.1016/S1048-9843(00)00044-8

Judge, T. A., Piccolo, R. F., & Ilies, R. (2004). The Forgotten Ones? The Validity of Consideration and Initiating Structure in Leadership Research. *Journal of Applied Psychology*, *89*(1), 36-51. Retrieved from http://ezproxy2.utwente.nl/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=pdh&AN=2004-10572-004&site=ehost-live doi:10.1037/0021-9010.89.1.36

Kauffeld, S., & Lehmann-Willenbrock, N. (2012). Meetings Matter:Effects of Team Meetings on Team and Organizational Success. *Small Group Research*, *43*(2), 130-158. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/1046496411429599. doi:10.1177/1046496411429599

Keller, R. T. (2006). Transformational leadership, initiating structure, and substitutes for leadership: a longitudinal study of research and development project team performance. *The Journal of applied psychology*, *91*(1), 202-210.

Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. *The handbook of social psychology*, *1*(4), 233-265.

Kirkman, B. L., & Rosen, B. (1999). Beyond Self-Management: Antecedents and Consequences of Team Empowerment. *The Academy of Management Journal*, *42*(1), 58-74.

Lee, P., Gillespie, N., Mann, L., & Wearing, A. (2010). Leadership and trust: Their effect on knowledge sharing and team performance. *Management Learning*, *41*(4), 473-491.

Lehmann-Willenbrock, N., Rogelberg, S. G., Allen, J. A., & Kello, J. E. (2018). The critical importance of meetings to leader and organizational success: Evidence-based insights and implications for key stakeholders. *Organizational Dynamics, 47*(1), 32-36. Retrieved from http://www.sciencedirect.com/science/article/pii/S0090261617301468. doi:https://doi.org/10.1016/j.orgdyn.2017.07.005

Lewis, M. (2007). Stepwise versus Hierarchical Regression: Pros and Cons. *Online Submission*.

Liden, R. C., Stilwell, D., & Ferris, G. R. (1996). The Effects of Supervisor and Subordinate Age on Objective Performance and Subjective Performance Ratings. *Human Relations, 49*(3), 327-347. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/001872679604900304. doi:10.1177/001872679604900304

Meier, K. J., & O'Toole, L. J. (2013). Subjective organizational performance and measurement error: Common source bias and spurious relationships. *Journal of public administration research and theory, 23*(2), 429-456.

van Mierlo, H., Vermunt, J., & Rutte, C. (2009). Composing Group-Level Constructs From Individual-Level Survey Data. *Organizational Research Methods, 12*(2), 368-392.

Nixon, C. T., & Littlepage, G. E. (1992). Impact of Meeting Procedures on Meeting Effectiveness. *Journal of Business and Psychology, 6*(3), 361-369.

Oomen, S., De Waal, B., Albertin, A., & Ravesteyn, P. (2017). How can SCRUM be succesful? Competencies of the SCRUM Product Owner. *In Proceedings of the 25th European Conference on Information Systems (ECIS), Guimarães, Portugal, June 5-10, 2017*. Retrieved from https://aisel.aisnet.org/ecis2017_rp/9.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *The Journal of applied psychology, 88*(5), 879-903.

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly, 1*(2), 107-142. doi:10.1016/1048-9843(90)90009-7

Rogelberg, S. G., Leach, D. J., Warr, P. B., & Burnfield, J. L. (2006). "Not another meeting!" Are meeting time demands related to employee well-being? *The Journal of applied psychology, 91*(1), 83-96.

Santos, J. R. A. (1999). Cronbach's Alpha: A Tool for Assessing the Reliability of Scales. *Journal of Extension, 37*. Retrieved from https://www.joe.org/joe/1999april/tt3.php.

Sarin, S., & McDermott, C. (2003). The Effect of Team Leader Characteristics on Learning, Knowledge Application, and Performance of Cross-Functional New Product Development Teams. *Decision Sciences, 34*(4), 707-739. doi:10.1111/j.1540-5414.2003.02350.x

Shivers-Blackwell, S. (2006). The Influence of Perceptions of Organizational Structure & Culture on Leadership Role Requirements: The Moderating Impact of Locus of Control & Self-Monitoring. *Journal of Leadership & Organizational Studies, 12*(4), 27-49.

Srivastava, A., Bartol, K. M., & Locke, E. A. (2006). Empowering Leadership in Management Teams: Effects on Knowledge Sharing, Efficacy, and Performance. *The Academy of Management Journal, 49*(6), 1239-1251.

Szabo, E., Reber, G., Weibler, J., Brodbeck, F. C., & Wunderer, R. (2001). Values and behavior orientation in leadership studies: reflections based on findings in three German-speaking countries. *The Leadership Quarterly, 12*(2), 219-244. Retrieved from http://www.sciencedirect.com/science/article/pii/S1048984301000704. doi:https://doi.org/10.1016/S1048-9843(01)00070-4

Tehseen, S., Ramayah, T., & Sajilan, S. (2017). *Testing and Controlling for Common Method Variance: A Review of Available Methods* (Vol. 4).

Thompson, E. R., & Phua, F. T. T. (2012). A Brief Index of Affective Job Satisfaction. *Group and Organization Management, 37*(3), 275-307. doi:10.1177/1059601111434201

van der Haar, S., Koeslag-Kreunen, M., Euwe, E., & Segers, M. (2017). Team Leader Structuring for Team Effectiveness and Team Learning in Command-and-Control Teams. *Small Group Research, 48*(2), 215-248. doi:10.1177/1046496417689897

Van der Weide, J., & Wilderom, C. (2004). Deromancing leadership: what are the behaviours of highly effective middle managers? *International Journal of Management Practice, 1*(1), 3-20.

Wright, B. E., & Pandey, S. K. (2010). Transformational Leadership in the Public Sector: Does Structure Matter? *Journal of Public Administration Research and Theory: J-PART, 20*(1), 75-89.

Yang, J., & Matz-Costa, C. (2018). Age Diversity in the Workplace: The Effect of Relational Age Within Supervisor–Employee Dyads on Employees' Work Engagement. *The International Journal of Aging and Human Development, 87*(2), 156-183. doi:10.1177/0091415017709798

Yee, J. L., & Niemeier, D. (1996). Advantages and disadvantages : longitudinal vs. repeated cross-section surveys. Retrieved from https://rosap.ntl.bts.gov/view/dot/13793.

Yukl, G., Gordon, A., & Taber, T. (2002). A Hierarchical Taxonomy of Leadership Behavior: Integrating a Half Century of Behavior Research. *Journal of Leadership & Organizational Studies, 9*(1), 15-32. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/107179190200900102. doi:10.1177/107179190200900102

Zellmer-Bruhn, M., & Gibson, C. (2006). Multinational Organization Context: Implications for Team Learning and Performance. *The Academy of Management Journal, 49*(3), 501-518.

9. APPENDIX

Table 4: Descriptive statistics of effective leadership behaviours

		N	Min.	Max.	Mean	S.D.
Structuring the conversation	Frequency	114	0.90	30.07	11.54	5.06
	Duration	114	0.49	31.62	8.50	5.86
Informing	Frequency	114	3.21	55.69	27.86	8.51
	Duration	114	4.61	81.21	47.06	13.15
Challenging others professionally	Frequency	114	0.00	16.46	3.55	3.24
	Duration	114	0.00	11.44	2.99	2.79

Table 5: Descriptive statistics of meeting effectiveness. team and individual performance

		N	Min.	Max.	Mean	S.D.
Meeting effectiveness		113	2.94	6.00	4.86	0.55
Team performance	Leader ratings	110	3.00	7.00	5.50	0.83
	Team member ratings	113	3.61	6.23	4.97	0.54
	Expert ratings	108	3.67	8.25	6.99	0.78
Individual performance	Team member performance	92	5.41	9.19	7.26	0.65
	Team member job satisfaction	113	4.21	6.54	5.56	0.42

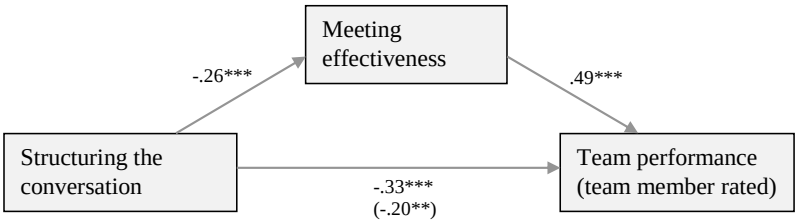

Figure 3: Regression coefficients for the relationship between 'structuring the conversation' (duration) and team performance with mediator meeting effectiveness (*p < .01; **p < .05; *p < .10; Standardized coefficients are used)**

Table 6: Hierarchical regression of effective leadership behaviours (duration) on performance outcomes

	Meeting effectiveness			Team performance (leader rated)				Team performance (team member rated)				Team performance (expert rated)				Individual performance (leader rated)				Job satisfaction (follower rated)			
	M1	**M2**	**M3**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**	**M1**	**M2**	**M3**	**M4**
Gender of leader	.21**	.10**	.21**	-.02	-.02	-.02	-.10	.01	.00	.00	-.11	-.02	-.02	-.03	-.11	.05	.04	.04	-.02	.02	.02	.01	-.08
Gender of team members	-.11	-.09	-.08	-.25**	-.24**	-.25**	-.22**	-.19*	-.16	-.16	-.11	-.07	-.06	-.07	-.03	-.06	-.06	-.05	-.05	-.11	-.11	-.11	-.07
Age of leader	.04	.04	.01	.24**	.24**	.25**	.25**	.00	.00	.01	.00	.12	.12	.14	.14	-.05	-.05	-.05	-.03	.18*	.18*	.19*	.18*
Average age of team members	-.14	-.15	-.19*	-.18*	-.19*	-.21**	-.14	-.07	-.08	-.09	.01	-.04	-.05	-.03	.05	-.07	-.08	-.08	-.04	-.17	-.17	-.14	-.06
Structuring the conversation (duration)		-.28***	-.26**		-.06	.02	.12		-.31***	-.27**	-.14		-.07	-.06	.05		-.06	-.04	0.5		.01	-.02	.09
Informing (duration)			-.03			.16	.17			.07	.09			.07	.08			-.04	0.5			-.01	.00
Challenging others professionally (duration)			-.19*			.05	.12			.03	.13			.12	.20*			-.01	0.4			.09	.17*
Meeting effectiveness							.37**				.54**				.40**				.29**				.44**
R^2	.07	.14	.17	.14	.15	.16	.28	.03	.13	.13	.37	.02	.03	.04	.18	.01	.02	.02	.09	.06	.06	.07	.22
ΔR^2	.07	.08**	.03	.14**	.01	.02	.11**	.03	.09**	.00	.24**	.02	.01	.01	.14**	.01	.01	.00	.07**	.06	.00	.01	.16**

*** p < 0.01; ** p < 0.05; *p < 0.10 two-tailed; ; Note: standardized coefficients are used

Table 7: The hypotheses that are supported or not by the data analysis

Hypothesis	Significant relationship	Found direction	Supported by data
H1a: The effective leadership behaviour 'structuring the conversation' is positively related to meeting effectiveness.	Yes	Negative	No
H1b: The relationship between the 'structuring the conversation' and the performance outcomes is mediated by the meeting effectiveness. **Performance outcome**: team performance rated by team members	Yes	Negative	Yes
H2a: The effective leadership behaviour 'informing' is positively related to meeting effectiveness.	No	Positive	No
H2b: The relationship between the 'structuring the conversation' and the performance outcomes is mediated by the meeting effectiveness.	No	Positive	No
H3a: The effective leadership behaviour 'challenging others professionally' is positively related to meeting effectiveness.	Yes	Negative	No
H3b: The relationship between the 'structuring the conversation' and the performance outcomes is mediated by the meeting effectiveness.	No	Positive	No
H4: Meeting effectiveness is positively related to team performance.	Yes	Positive	Yes
H5: Meeting effectiveness is positively related to individual performance of the team members.	Yes	Positive	Yes
H6: Meeting effectiveness is positively related to the job satisfaction of the team members.	Yes	Positive	Yes