

# The Effect of Leaders' Behaviors on Virtual Project Team Effectiveness: A Qualitative Study throughout the Teams' Lifecycle

## **Master Thesis**

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## Abstract

**Aim** - The increased importance of leaders' role in guiding virtual project teams has stimulated the call for further exploration on this topic. This study thus investigated the influence of leaders' task- and relationship-oriented behaviors on team effectiveness throughout a virtual team's lifecycle, i.e., its welcoming, working and wrapping-up phase.

**Method** - A qualitative, abductive and cross-sectional study was chosen, and semi-structured interviews were conducted with several leaders and followers (N = 15) from different organizations and working in virtual project teams. The data was analyzed through Thematic Analysis and structured according to the Gioia methodology.

**Findings** - This study found that at the start of the project, the leader's task-oriented behaviors (e.g., planning, clarifying, monitoring and problem-solving behaviors), showed to be the most prominent in regards to team effectiveness, followed by the relation-oriented leadership behaviors (e.g., supporting, developing, recognizing and empowering behaviors), in subsequent phases of the team lifecycle. This finding shed new insights on the current literature of virtual teams, suggesting that virtual teams are not only task-oriented, but adopt mixed behaviors and as the lifecycle progresses the dominance of the relation-oriented behaviors becomes clear. Besides, this study found that when major behaviors (e.g., planning, clarifying and supporting behaviors) are not displayed in the early phase of the project team, challenges are more likely to emerge in subsequent phases. Due to the abductive analysis, a novel leadership behavior, involving behavior, emerged which goes beyond the scope of the project and the behavior was observed to have an influence team effectiveness within virtual teams on the current and projects to come.

**Theoretical implications** - This study extended the current knowledge on leadership behaviors and virtual teams by applying the Hierarchical Taxonomy of Leadership Behaviors in combination with the virtual environment to understand how leaders could boost team effectiveness through their behaviors, and connecting these results to the Lifecycle of Virtual Team Management to pinpoint the optimal behaviors throughout the team lifecycle to perform effectively. In addition, this thesis extends the virtual team literature by enriching the classification with a behavior that shows connections with a recent extension of the full-range leadership theory, namely instrumental leadership.

**Practical implications** - Leaders need to become aware of the influence and the effects of their own behaviors on team effectiveness throughout the virtual team's lifecycle. By showing the different behaviors, at specific moments in time, they could enhance the performance of the team. By doing this accordingly, managers could reduce the emergence of challenges within virtual teams and build a more cohesive and effective team. Moreover, leaders should consider that leading a virtual team requires additional effort, which for example could lead to exhaustion with all its consequences.

**Keywords:** Instrumental leadership, job satisfaction, leadership behavior, relationship-oriented behavior, task-oriented behavior, team effectiveness, team performance, virtual team lifecycle, virtual team management, virtual teams

# Preface

This thesis marks the completion of my study, Master of Business Administration, at the University of Twente. Due to my interest in leadership and the emergence of the COVID-19 pandemic, which has also led to me working virtually, the subject of this thesis came to mind. By being relevant at this moment of time, I was highly motivated to acquire more knowledge about this topic. Although the COVID-19 pandemic influenced the process, this personal goal has been achieved.

Therefore, I would like to express my appreciation to Dr. Lara Carminati, by being supportive, providing me with profound feedback, the online-meetings to discuss certain matters and directions, and especially the quick repliance to my questions. This all assisted me with keeping up the good phase during the writing of this thesis. I would also like to thank Dr. Desirée van Dun, by providing me relevant feedback and new insights. In addition, I would like to thank the participants for making time to have an interview with me, and share their personal experiences and insights. Lastly, I would like to thank my family, my friends, and colleagues for their support and encouragement during this final phase of my study.

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# 1. Introduction

Organizational environments are continuously changing and adapting to a world where mobility and technological developments give stage to new opportunities. Driven by global and local competition, organizations are adopting new structures of teams to prolong or establish their innovative and effective nature (Abuzid, 2017). One of these trends over the past years concerns the shift from co-located teams to a more dispersed workforce, namely virtual teams (Alsharo, Gregg, & Ramirez, 2017; Jiminez, Boehe, Taras, & Caprar, 2017; Turesky, Smith, & Turesky, 2020). According to the annual Future Workforce Report (2019), a company specialized in human capital management research conducted research in the field of remote working and found that 73% of all departments will have remote workers by 2028. These findings support the statement made in previous research by Johns and Gratton (As cited in Eisenberg & Krishnan, 2018) that it is to be expected that 1.3 billion people will be working remotely within the upcoming years.

To specify, this phenomenon can be described by a commonly used definition by Townsend, De Marie, and Hendrickson (1998, p18): “Virtual teams are groups of geographically and/or organizationally dispersed co-workers that are assembled using a combination of telecommunications and information technologies to accomplish an organizational task.” Furthermore, virtual teams can be distinguished from co-located teams on aspects of geographical location, their function within the organization, cultural differences, or even temporal distance (Turesky et al., 2020). The transition from traditional teams to more geographically dispersed teams has seen extensive growth and will continue to do so in the future (Dulebohn & Hoch, 2017b). Consequently, the interest within this field has been rising among businesses as well as academics.

Naturally, the expectation of an increased interest within the field of virtual teams does not come as a surprise. Frost and Duan (2020) state that companies increasingly started to integrate dispersed and virtual teams within their organization for the past three decades. Moreover, the adoption of virtual teams emerged from research & development departments in IT to non-commercial firms and academia (Buhlman, 2006; Jimenez et al., 2017). Primarily researchers found that organizations can benefit from virtual teams, since they allow access to knowledge and expertise that is unbound to a location and can be acquired on demand (Eisenberg & Krishnan, 2018; Graham & Daniel, 2021; Townsend et al., 1998). Other benefits of virtual teams for organizations are for example: 24/7 productivity by utilizing different time zones to their advantage (Dulebohn & Hoch, 2017b), an increase in competitive advantage by

tapping into global resources (Ford, Piccolo, & Ford; 2017; Huang, Kahai, & Jestice, 2010), and reduced operational costs (Dulebohn & Hoch, 2017b; Eisenberg & Krishnan, 2018; Townsend et al., 1998). Besides the organization's benefits, employee satisfaction often increases. The individual is no longer required to commute and has the opportunity to be more flexible, in turn this results in a better work-life balance (Liao, 2017; Sundin, 2010). In general, researchers agree that virtual teams positively affect the performance of an organization.

Nevertheless, the adoption of virtual teams cannot automatically guarantee better team or organizational effectiveness. Despite the benefits of virtual teams, different challenges could occur which make the improvement in effectiveness and performance not self-evident (Huang et al., 2010). More specifically, researchers and practitioners described several challenges that could occur; for example, employees could show lower engagement since they are not working on location (Dulebohn & Hoch, 2017b). Another example, Ford et al. (2017) found that the establishment of trust is more difficult in virtual teams which could reduce their effectiveness, due to the absence of observations, informal interactions, and nonverbal communications. Moreover, Alsharo et al. (2017), and Flood (2019) enlightened that to overcome such potential challenges, the right management is required. Dulebohn and Hoch (2017b) elaborated that managing virtual teams requires additional effort compared to managing co-located teams, due to the absence of co-presence. As a consequence, managers and leaders seem to have less information and influence about the team's progress during its lifecycle and functioning, which could result in the team dynamics and process being flawed. For example, due to less control or direction by the leader (Stoker, Garretsen & Lammers, 2021). In short, research has shown that leadership in virtual teams is of utmost importance for conquering challenges which could interfere with an increase in organizational performance (Alsharo et al., 2017; Dulebohn & Hoch, 2017b; Flood, 2019).

The on-going shift from traditional teams to virtual teams has taken a flight due to the recent COVID-19 pandemic, which resulted in employees suddenly needing to work from home without any preparation or training (Newman & Ford, 2020). These transitions resulted in challenges for managers and employees but also presented some of the aforementioned advantages. Which confirms a statement made by Gilson, Maynard, Young, Vartiainen, and Haknonen (2015) who recognized leadership as a pressing theme in virtual teams, and an opportunity in future research. Moreover, organizations are likely to continue with a largely dispersed workforce. Newman and Ford (2020) state that organizations are now reflecting on communication and management, to evaluate if leadership contributed to achieving the best results possible from their virtual team. Some questions remain underexplored in the field of



this topic, and one of them is how leadership behavior could enhance team effectiveness in virtual teams (Hoch & Kozlowski, 2014; Liao, 2017). Just as, which leadership behaviors could increase the effectiveness of different processes in virtual teams (Hoch & Kozlowski, 2014; Liao, 2017) Therefore, sufficient knowledge is required on which leadership behaviors affect team effectiveness, to utilize the process of virtual teamwork, so that the best results possible can be achieved in the future.

## 1.1 Research goal and question

Therefore, the goal of this research is to shed light on how leaders' behavior could influence the effectiveness of virtual teams during their lifecycle. In doing so, this study explores different facets of leadership's behavior and their impact on virtual teams throughout their lifecycle. Thus, this study's objectives are two-fold; 1) to investigate leadership behavior in relation to team effectiveness within virtual teams and 2) to understand which leadership behaviors may be more vital during different phases of a virtual team's lifecycle. To accomplish this goal the following research question and sub-questions were defined:

“How can a leader's behavior contribute to virtual team's effectiveness throughout its lifecycle?”

- What leadership behavior is more influential in virtual teams to increase team performance?
- To what extent does leadership behaviors' vary throughout the lifecycle of a virtual team?

## 1.2 Theoretical and Practical Relevance

Although studies emphasized the importance of management in virtual teams, research in the field of leadership behaviors within virtual teams and their effectiveness is limited (Dulebohn & Hoch, 2017b; Liao, 2017; Yukl, 2012). Despite the fact that research had some focus on different leadership styles in virtual teams e.g., transformational leadership (Maduka, Edwards, Greenwood, Osborne, & Babatunde, 2018), shared leadership (Dulebohn & Hoch, 2017a; Liao, 2017), and emergent leadership (Dulebohn & Hoch, 2017a) in relation to aspects of an effective team (e.g., commitment, accountability), from a theoretical perspective, there has been little coverage on leadership in virtual teams in general (Dulebohn & Hoch, 2017a, 2017b; Hoch & Kozlowski, 2014; Kylefalk & Hallberg, 2020; Liao, 2017; Maduka et al., 2018) and in

particular on leadership's behavior (Yukl, 2012), which makes the evaluation of leadership more difficult.

To elaborate on this, Yukl (2012) states that there has been extensive research on leadership styles in which fundamental results of effective behaviors by a leader were missing. This literature study introduced a hierarchical taxonomy of leadership behaviors which could be expanded by future research (Yukl, 2012). This hierarchical taxonomy has not been explored in the context of leadership in virtual teams. Therefore, this study aims to close the gap between unexplored fields of effective leadership in virtual teams by exploring the Yukl's (2012) hierarchical taxonomy of leadership behavior in virtual teams. Studying leadership in virtual teams can thus contribute to the explanation and prediction of leadership on team effectiveness, which in turn gives organization information on how to influence team outcomes.

On a more practical level, a better understanding of leadership behavior on team effectiveness could assist managers by reflecting on their virtual teams. Since, reflecting on the contribution of leadership to team effectiveness has become increasingly important (Newman & Ford, 2020). Thus, understanding how leadership's behavior could affect virtual teams is of great importance for organizations to create or maintain an effective team throughout their lifecycle to achieve organizational performance. Therefore, this study aims to contribute on a more practical level with insights for organizations on how to successfully lead virtual teams.

### 1.3 Outline of this paper

This paper consists of five parts. First of all, the theoretical review is presented which covers the background of virtual teams, the definition of team effectiveness and an in-depth analysis of leadership behaviors. Next to this, in the second section of this thesis the methodology is given, which provides insights in the research design, sample, method of data collection and analysis of data. Third of all, the results are presented which emerged after the analysis of the data. Afterwards, the discussion is shown, and potential limitations and future research directions are provided.

## 2. Theoretical background

The theoretical background presents several phenomena which will be central within this study. First of all, the concept of virtual teams is illustrated with an emphasis on the role of leadership and the lifecycle of virtual teams. Subsequently, leadership behavior as proposed by Yukl (2012), is thoroughly described. Afterwards, team effectiveness is introduced as a process-oriented as well as out-put oriented approach.

### 2.1 Virtual teams

#### 2.1.1 Virtual teams' characteristics

Virtual teams are described through different characteristics. More specifically, virtual teams distinguish themselves from traditional teams on multiple aspects: for example, their geographical location; their function within the firm, and the temporal distance; the fact that they often are more culturally diverse, and they may exist across organizational boundaries (Powell, Picolli & Ives, 2004; Turesky et al., 2020). Bell and Kozlowski (2002) add that virtual teams can be distinguished based on four characteristics as shown in figure 2.1.1.1 and the type of virtual team will likely take form according to the work-flow pattern and task complexity. For example, when tasks become more complex, it is more likely that virtual teams need to be in the same temporal zone as the need for real-time communication increases (Bell & Kozlowski, 2002). However, these factors should not be seen as exhaustive matters, the model captures most of the diversity among virtual teams and shows that virtual teams can exist in many different forms among the continuum. On the left side of the figure, Bell and Kozlowski (2002) introduce the virtual team as mostly discussed in literature and on the right side the virtual team that shows stronger similarities with traditional teams.

Even though the model dates from 2002, it still remains predominant in more recent definitions of virtual teams and the four characteristics are still widely adopted in research. The first characteristic is the team member role. Team members can have one or more roles within the team. Townsend et al. (1998) introduce that virtual teams often try to attract skilled employees who best suit particular situations or projects, since these employees are mostly able to perform numerous tasks. As a result, the job is accomplished much quicker. However, Bell and Kozlowski (2002) challenge the statement that when tasks become less complex, the

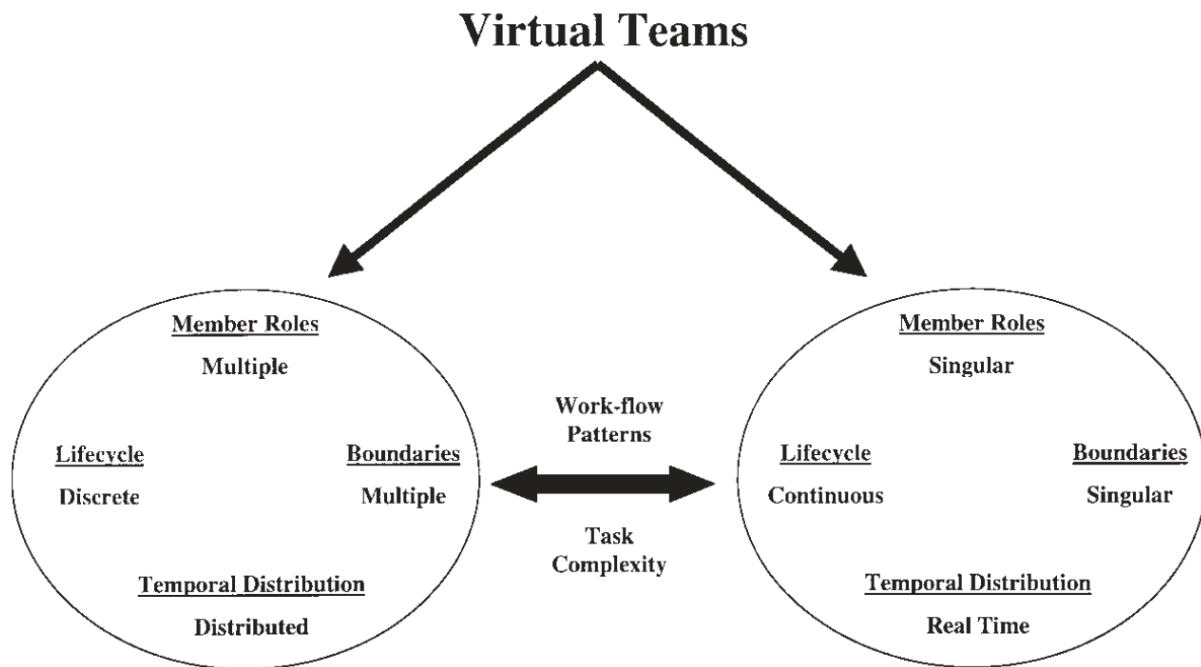
chances of team members to take upon several roles increase. In addition, the opposite is true for difficult tasks, where a specialization is required.

The second element is defined by what Bell and Kozlowksi (2002) name “boundaries”. Virtual teams are more likely to cross different boundaries (e.g., organizational, functional and cultural boundaries), in comparison to traditional teams. Although when tasks are less complex the aforementioned likeliness is to decrease (Bell & Kozlowksi, 2002).

The third characteristic is the temporal distribution. Technology enables a team to communicate across the globe with very distributed members, as a consequence virtual teams emerged. Therefore, the literature considered virtual teams as a distributed team that operates across different time zones. Although, virtual teams can also consist of members that live in the same geographical area (e.g., city or state) and time zone, as long as they rely on virtual communication (Bell & Kozlowksi, 2002). Whereas the complexity of tasks is increasing, virtual teams are also more likely to be distributed.

The last characteristic of a virtual team is the lifecycle and is reliant on the tasks and routines the team is carrying out. Virtual teams are often created to take on a specific project, as a consequence the lifecycle is often quite short in relation to ongoing teams. However, when tasks are for example repetitive the same pool of team members will operate for a longer period of time and continue the process under long term work arrangements (Bell & Kozlowksi, 2002). Teams with a continuous lifecycle benefit from better cohesion and collaboration.

To conclude, virtual teams are defined through four main characteristics which, albeit important, are not exhaustive. Therefore, various alternatives of virtual team types exist as long as their main way of communication is through tele-communication.



**Figure 2.1.1.1: Components that distinguish types of virtual teams (Bell & Kozlowksi, 2002, p. 30)**

### 2.1.2 Critical role of leadership

Although virtual teams may bring multiple benefits for an organization (e.g., tapping into global resources, more hour's productivity, and competitive advantages), such benefits are not guaranteed. More specifically, according to Duarte and Snyder (1999) there are some critical factors which could lead to triumph for a virtual team, namely: technology, human resources, development of managers and members of the team, organizational and team process patterns, the culture of the organization, leadership and the team and manager competency which contributes to the team performing at the esteemed level. Also, multiple studies agree with the essential role of leadership in virtual teams (Dulebohn & Hoch, 2017a, 2017b; Kylefalk & Hallberg, 2020; Liao, 2017; Maduka et al., 2018).

With regard to leading virtual teams, Zander, Zettinig, and Mäkelä (2013, p. 233) introduced the key activities of leaders in the lifecycle of managing projects within virtual teams. The model is presented in figure 2.1.2.1 and consists of 3 phases and their activities which are suggestions as to what virtual leaders should do to lead their project-based team to success throughout its existence. In addition, considerations for team members are presented.

The first phase 'Welcoming phase' concerns the start of the actual project; aligning goals, building relationships and defining the tasks. Followed by 'Working phase, which is playing a considerable role in all teams. Whereas phase 1 focuses on the input, the following

phase devotes their attention to the different roles of team members and to implement the coordination of processes. The last phase mainly considers the finalization of the project and output and is called the 'Wrapping-up phase'. This last phase emphasizes recognition and debriefing, the latter which emphasizes reflection (e.g., on how the goals were aligned, how trust is created, the coordination of the tasks, etc.) to stimulate overall learning (Zander et al., 2013). Lastly, the arrow from phase 3 to 1 suggests that learnings are transferred to the newly formed virtual teams.

Comparing the aforementioned lifecycle to one of the most frequently used models in traditional teams about group development by Tuckman (1965), similarities can be found. However, the model by Zander et al. (2013) consists of fewer stages, which shows to be a more integrated model. The first phase of the lifecycle, mainly emphasizes the *forming* (e.g., orientation, testing, and development of relationships) and *storming* (e.g., emotional responding to group influence and task requirements). Nonetheless, the model by Zander et al. (2013) gives fewer attention to the resistance as mentioned in the storming phase. To continue, the 'working phase' shows similarities to the *norming* (e.g., overcoming aforementioned resistance and the adoption of standards and roles) and *performing* (e.g., a strong structure is developed which supports the team's performance) stage as introduced by Tuckman (1965). Therefore, it could be concluded that the Lifecycle of Virtual Team Management has its roots in such a traditional model, which strengthens its credibility. Hence, the model by Tuckman (1965) does not introduce an end stage such as the 'wrapping-up phase' presented by Zander et al. (2013), which emphasizes the focus on project-based teams of this lifecycle.

Overall, this model is introduced to give insights in the critical role of leadership by managing virtual teams throughout their lifecycle. The model outlines three critical stages with several activities, and by paying attention to leaders and team members could better address and overcome the main challenges within virtual teams (Zander et al., 2013). Next to this, Zander et al. (2013) introduced that there is still much to learn about this organizational form, to learn by doing to explore and exploit the full potential of the model. Besides, the aim of this thesis is to explore how leaders' behavior is related to virtual team effectiveness. As a consequence, this model is fitting for use in this study, despite the fact it is not yet fully exploited. Furthermore, what should be taken into account is that virtual teams can also be running teams (e.g., teams that run the organization and have no specific end date), which results in phase 3 being absent. Therefore, the focus of this study will be on teams that have gone through the whole cycle, since running teams are beyond the scope of this study. To conclude, with the use of the framework, an interesting starting point for the field research is

provided, since it offers a fundamental model whereby the impact of leadership behavior throughout the lifecycle of a virtual team can be interpreted.

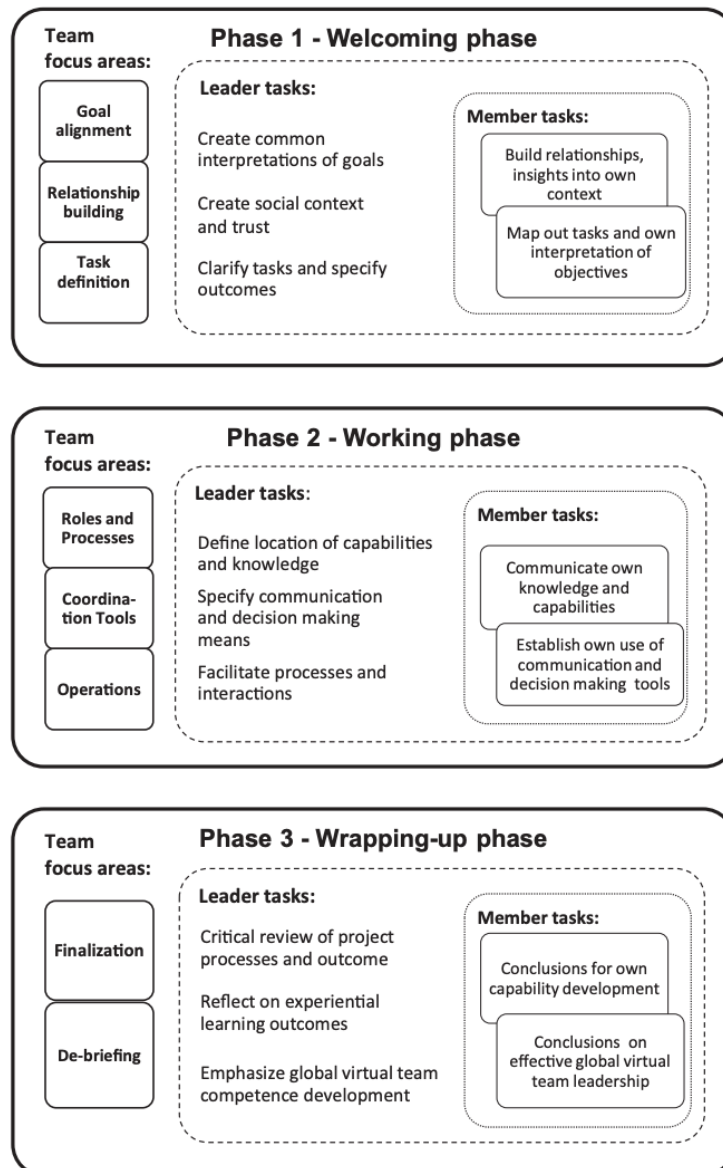


Figure 2.1.2.1: Lifecycle of Virtual Team Management (Zander et al., 2013, p. 233)

## 2.2 Leadership's Behavior

Research on effective leadership behavior has taken place for more than half a century. Moreover, research found that team or organizational performance can be improved when a leader's behavior influences the activities which determine the outcome (Maduka et al., 2018; Yukl, 2012). Leadership behavior can be described as specific actions by leaders which occur in interaction with their followers in an organizational setting (Szabo, Reber, Weibler,

Brodbeck, & Wunderer 2001). This definition will be central within this study. Although widespread research on this topic has been conducted, Yukl (2012) found that there were many different interpretations and varieties of taxonomies related to leadership behavior. Formerly, Yukl, Gordon and Taber (2002) approached this problem in theory in the beginning of this century, by creating a taxonomy that could be integrated into a conceptual framework. Nonetheless, research on leadership remained inconsistent and in turn this inconsistency resulted in confusion. By elaborating on the hierarchical leadership behavior taxonomy based on a broad range of results from different studies, Yukl (2012) wanted to establish clarity.

This comprehensive taxonomy consists of four meta-categories and their belonging components, as can be seen in table 1. Those four meta categories all involve factors of the overarching objective performance, namely (1) task-oriented, (2) relations-oriented, (3) change-oriented and (4) external. Those categories can all be distinguished based on their primary objective. Accomplishing work efficiently and reliably is the main objective of task-oriented behavior. When looking at the relations-oriented behavior the main focus is to improve the human capital within the organization. Next to collective learning and enhancing innovation, is adapting to the organization's external environment one of the primary objectives in regard to change-oriented behavior. Lastly, the external leadership's behavior concerns obtaining information and resources. In addition, the objective of this behavior is to encourage and guard the interests of the company or team.

In short, the model by Yukl (2012) introduces 4 meta-categories of leadership behavior and its components with their objectives, which provide an overview of perceived behaviors of effective leaders. Next to this, team effectiveness is found to be mostly affected by relational-oriented behavior (Behrendt, Matz, & Göritz, 2017; Lin, Standing & Liu, 2008; Powel et al., 2004) and task-oriented leadership behavior (Behrendt, Matz, & Göritz, 2017; Bordia, 1997; Lin et al., 2008). Furthermore, Behrendt et al. (2017) highlight that most leadership behaviors are task-oriented and relations-oriented in essence, since different leadership definitions all still have in common three entities: a leader, tasks that should be fulfilled and the followers who should infuse their effort. As a consequence, only these two meta-categories are discussed and accounted for in this research.

Although the taxonomy in table 1 provides a comprehensive overview of leadership behaviors, it also includes some issues. Behrendt et al. (2017) presented their criticism. First of all, the taxonomy cannot successfully respond to the systematic observation errors. Subsequently, there is no full differentiation between the perception of the leaders' behaviors. For example, extrusive monitoring or introducing unrealistic plans, which are all perceived



subjectively by the observer and their effect can only be measured afterwards. Another issue that is introduced by Behrendt et al. (2017) concerns insufficient direction on how these meta-categories should be characterized. For instance, when a leader assigns tasks to the team, two components are referred to. Namely, planning and clarifying, as a consequence overlap between the components can be found. Overlap between meta-categories can be found as well: empowering behavior is a component in relation-oriented behavior, on the contrary negative empowering behaviors (e.g., extrusive monitoring) can be found in the explanation of other components in task-oriented behaviors.

Despite above drawbacks criticisms to Yukl’s (2012) model, it still remains one of the most well-established frameworks in the leadership literature and shows to have significant advantages for this thesis (e.g., incorporation of previous research, and detailed behavioral descriptions). Therefore, this paper opted for relying on this comprehensive taxonomy. To get a profound understanding of the taxonomy of Yukl (2012), it will be thoroughly discussed first.

**Table 1: Hierarchical Taxonomy of Leadership Behaviors (Yukl, 2012, p. 459)**

Task-oriented	Clarifying
	Planning
	Monitoring operations
	Problem solving
Relations-oriented	Supporting
	Developing
	Recognizing
	Empowering
Change-oriented	Advocating change
	Envisioning change
	Encouraging innovation
	Facilitating collective learning
External	Networking
	External monitoring
	Representing

### 2.2.1 Task-oriented behavior

As mentioned before, the primary objective of this behavior is to make sure that employees and resources are utilized in the most reliable and efficient manner to achieve an organization or team's goal. Behrendt, Matz and Göritz (2017) argues that a leader's behavior should mainly consist of task-oriented behavior, which has been at the core of numerous leadership theories. Moreover, task-oriented leaders often only start with aiming for their objectives, presuming that they are satisfied with a detailed approach and sufficient information has been acquired (Henkel, Marion, & Bourdeau, 2019; Ruzgar, 2018). One of the strengths of this approach is that it results in perfectly and in time executed tasks, due to focus and time management (Derue, Mahrgang, Wellman, & Humphrey 2011; Henkel et al., 2019; Ruzgar, 2018; Yukl, 2012). On the contrary, this leadership behavior could result in limited creativity by employees and a decrease in innovation since there is less room for exploration, because the path is already set (Ruzgar, 2018). All in all, task-oriented leadership can be seen as a practical approach with focus on task accomplishment and performance. Yukl (2012) introduces four component behaviors of this meta-category, namely (1) planning, (2) clarifying, (3) monitoring and (4) problem solving.

The first component behavior of task-oriented leadership behavior is *planning*, which includes multiple aspects. Such as, assigning work, arranging activities, and dividing resources in an appropriate manner, by avoiding waste of effort, resources and time to fulfill the preset objectives (Holloway, 2010; Yukl, 2012). To elaborate on this, Marta, Leritz, and Mumford (2005) list five competencies required to execute effective planning behavior by leaders; judgment, foresight, arranging, elaboration and adaptive flexibility. Research found that planning could enhance the effectiveness of a leader (Holloway, 2010; Marta et al., 2005; Yukl, 2012).

*Clarifying* is the following component of task-oriented behavior. This behavior is used to make sure that people, the leader interacts with, are clear on what they should deliver, what is expected from them, and how they should approach it (Yukl, 2012). Moreover, this clarifying behavior requires communication by a leader about making the tasks, objectives, priorities, deadlines, the performance standard and procedures clear. To accomplish the aforementioned, task-oriented leaders usually use a one-sided communication stream (Holloway, 2010). To add to this, Ruzgar (2018) synthesizes that leaders are open to changes in this stream, provided that the communication is required to ensure clarity concerning the objective. In short, clarifying

behavior by a leader is to make sure that the team fully understands the goal and how to accomplish it.

The third component of this meta-category is *monitoring* operations. This behavior is used to evaluate if the plan is progressing adequately by looking at employees and performance of the tasks (Holloway, 2010; Yukl, 2012). Owing to this, the acquired information can be used to track down obstacles or to find opportunities and in time to determine if any actions need to be taken to successfully accomplish the tasks. Yukl (2012) lists direct and indirect options to monitor the process and acquire information. For example, observations, diving into reports, turning to information systems and conducting performance sessions with the team. Even though research found that monitoring behavior increases leadership effectiveness, excessive and intrusive monitoring could negatively affect this (Yukl, 2012). Thus, it can be said that leaders who monitor the operations increase their effectiveness, presuming that this behavior is not executed excessively.

*Problem solving* is the last component behavior of task-oriented leadership behavior. Problem solving behavior is applied when dealing with disruptions or undesired behavior by employees. This behavior often goes hand in hand with crisis management and disciplinary actions (Yukl, 2012). Leaders who are able to rapidly identify the root of the problem and guide the team into the right direction to overcome this problem are found to be effective. Research showed consensus that not every problem that was solved led to successes, e.g., due to hasty decisions or neglecting clues that led to the problem (Mohagheh & Größler, 2020; Yukl, 2012). Nonetheless, a leader as problem solving entity learns from the process of solving problems (Mohagheh & Größler, 2020). Lord and Hall (2005) add to this by stating that leaders therefore need fewer cognitive resources for problem-solving, which increases their effectiveness over time. Furthermore, Yukl (2012) found that problem solving behavior could be introduced to prevent problems from happening in the future or to resolve them when they occur. To summarize, problem solving behavior occurs when a leader is preventing or resolving a problem that is standing in the way of successfully accomplishing the task.

### 2.2.2 Relations-oriented behavior

On the contrary of task-oriented behavior, the second meta-category of the hierarchical leadership taxonomy is focussing on relationship-oriented behaviors. Those behaviors often result in improved skills of team members, better relationships within the team and their leader, stronger commitment to the goal, and identification with the team (Yukl, 2012). To elaborate

on this, Ruzgar (2018) highlights that this approach pinpoints a team members' job satisfaction, as well as motivation, and work-life balance. Research introduced that leaders who are more relations-oriented, focus on establishing interpersonal relations and often have strong relationships with their team members (Derue et al., 2011; Holloway, 2012). Moreover, the primary objective of this behavior is to improve the human capital (Yukl, 2012). Relationship-oriented behavior expressed by a leader creates a team people want to participate in, resulting in increased productivity and risk-taking by employees because their leader will show support if required (Ruzgar, 2018). Another strength of this behavior is that a leader tries to minimize a broad range of conflicts (e.g., unsatisfied employees and tension within the team), by ranking the team members above other aspects (Holloway, 2010; Ruzgar, 2018). Conversely, a pitfall of ranking the team members first is that it could result in an obstacle for the accomplishment of tasks (Burke et al., 2006). To summarize, relationship-oriented leadership behavior mainly focuses on the improvement of human resources. The taxonomy by Yukl (2012) introduces four behavior components in this category, (1) supporting, (2) developing, (3) recognizing, and (4) empowering.

As aforementioned, *supporting* is the first component behavior of relationship-oriented behavior. Showing appreciation, encouragement, focus on establishing and growing cooperative relationships, and assisting employees to deal with difficult and/or stressful affairs are behaviors shown by leaders concerning the supporting component (Yukl, 2012). Moreover, Holloway (2010) adds showing acceptance to the above mentioned, and that these behaviors are expressed in regard to an individual's needs or feelings. By supporting subordinates, a leader can stimulate their effectiveness and their learning throughout the process, which results in increased performance (Banai & Reisel, 2007). Therefore, it can be said that this leadership behavior supports the individual by accomplishing their tasks, that in turn leads to a better performance by the team.

Not only does the supporting component increase performance of the team, the second component *developing* as well. Fernandez (2008) found that developing behavior is positively correlated with performance and job satisfaction. According to Yukl (2012), is this behavior component applied to improve skills, grow confidence and to create a path for career development. Furthermore, giving career advice, introducing training opportunities, and coaching are some examples of actions of the developing component to increase an individual's skills. All in all, the primary objective is to develop a team member's career and skills.

Recognizing is the third component of relations-oriented behavior. Praising and showing different forms of recognition to express appreciation by a leader for example:

excellent performance, playing a large role by the achievement of milestones and active participation within the organization are signs of recognizing leadership behavior (Holloway, 2010; Yukl, 2012). Behrendt et al. (2017) add that engagement and self-efficacy are enhanced when team members are recognized for their current effort or previous achievements. Although providing well-timed and well-deserved appreciation is done by effective leaders, it should be taken into account that this should not be done excessively to maintain its effect (Yukl, 2012). So, recognizing behavior by a leader increases engagement and self-efficacy of a team member when used proportionally and in the right moment to have a positive effect.

The last component of this meta-category is *empowering*. Giving more room and responsibility to make decisions about work related matters to employees is empowering behavior by leaders (Yukl, 2012). Moreover, Behrendt et al. (2017) agree that leaders should allow autonomy in individual as well as group-related matters and emphasize on group autonomy. To strengthen this, Burke et al. (2006) found that almost 30% of the variance in team learning originated from empowering behaviors. Two examples of empowering behavior by leaders were given by Yukl (2012), consulting and delegation. On the one hand consulting focuses on asking employees for input and taking this into account when making a decision, does delegation on the other hand give employees the authority to make decisions individually or within the group. In short, giving autonomy to employees shows to positively affect leadership effectiveness and increase team learning.

## 2.3 Team effectiveness

Depending on which leaders' behavior is adopted, i.e., task-oriented or relational-oriented behaviors, the effectiveness of a virtual team may be influenced. Liao (2017) highlights that there is limited literature on which processes and factors by a leader impacts virtual team effectiveness. More specifically, Liao (2017) raised the question concerning the limited knowledge on which leaders' behaviors can enhance virtual team effectiveness. Hence, to explore this topic in relation to leadership behaviors, deeper understanding of team effectiveness is required. Scholars do not seem to agree on a specific measure of effectiveness for teams. Therefore, a general definition is defined by Guzzo and Dickson (1996), who describe team effectiveness as:

Effectiveness in groups is indicated by (a) group-produced outputs (quantity or quality,

speed, customer satisfaction, and so on), (b) the consequences a group has for its members, or (c) the enhancement of a team's capability to perform effectively in the future (p. 308).

Zaccaro, Heinen and Shuffler (2009) state that leadership and leaders' behaviors are of utmost importance for the effectiveness of a team. More specifically, this relation pivots on the contribution of a leader to simulate collective performance, since the achievement will be greater than the sum of individual efforts. For example, when there is no leadership within a team, those individuals are likely to be unable to get a hold on the team's goals and become motivated. Just as how team members could behave when there is no support or direction given by the leader when this is required (Sivasubramaniam, Murry, Avolio, & Jung, 2002).

Schweitzer and Duxbury (2009) identify satisfaction and performance as the most common dimensions of team effectiveness. The researchers introduce satisfaction, an attitudinal outcome, in virtual teams as: "the satisfaction of VT members with respect to their perceptions that the VT experience contributes to their growth and personal well-being" (p. 284). Furthermore, Cohen and Bailey (1997) show their agreement and introduced team performance as a dimension of team effectiveness, next to behavioral outcomes and attitudinal outcomes. Also, Stashevsky, Burke, and Koslowski (2006) acknowledge the aforementioned and add that leadership can be seen as a measure of team performance. More accurately, leadership is needed for, and can be seen as a qualitative measure of the performance of a team (Sudhakar, 2013). Research found that the style, attitude and behavior of a leader have an impact on team performance (Turner & Muller, 2005). Thus, it can be stated that leadership within teams is having a large impact on the effectiveness of the team and more specifically on team performance.

Team performance is more complex to define, since it must not be seen as a unidimensional construct or a simple phenomenon (Ancona & Caldwell, 1992). Kozlowski and Klein (2000), show their agreement by describing team performance as a multilevel process (and not a specific product), emerging as members of a team engaging in handling their individual and interdependent tasks within the teamwork processes. Next to this, Ancona and Caldwell (1992) present this phenomenon as the extent to which a team is able to meet its output goals (e.g., quality, functionality, and reliability of outputs), the expectations of its members or its costs and time objectives. Also, team performance is described by Salas, DiazGranados, Klein, Burke, Stagl, Goodwin, and Halpin (2008) as "an emergent phenomenon resulting from the goal-directed process whereby members draw from their individual and

shared resources to display taskwork processes, teamwork processes, and integrated team-level processes to generate products and provide services” (p. 906). Whereas Ancona and Caldwell (1992) highlight the output aspect of team performance, Kozlowski and Klein (2000), and Salas et al. (2008) focus on the processes within the team. Nonetheless, the researchers agree on the aspect of a multi-level construct. So, the overarching definition of team performance consists of several components. Moreover, in this research the focus will be on processes and output, and as a consequence team performance within this paper is presented as “a multidimensional phenomenon, which emerges when team members draw from individual and shared resources to engage in individual as well as interdependent tasks within the teamwork and taskwork processes to meet output goals (e.g., quality, functionality, and reliability of products/services)”. This definition considers the different definitions by Ancona and Caldwell (1992), Kozlowski and Klein (2000), and Salas et al. (2018), which both emphasize the processes and output of team performance.

Other than the given definitions, literature outlines team performance as a general framework (Dionne, Francis, Atwater, & Spangler, 2004; Salas et al., 2008). This framework consists of inputs (e.g., resources), followed by processes (e.g., team interactions to transform inputs into outputs) and outputs (e.g., performance indicators like is the goal met or financial indicators). Furthermore, a process-oriented approach for team performance is not new to the literature, which gives stage to i.e., interpersonal relationships and collective effort (Dionne et al., 2004). Glickman et al. (1987) describe the process-oriented type with a large focus on teamwork instead of taskwork, and adds that: communication; cohesion; and conflict management, are such interpersonal processes which are to be expected within teams. Powell et al. (2004) add trust and relationship building to these processes. To strengthen the former statements, Paul, Drake and Liang (2016) found that in their study that team cohesion ( $b=0.41$ ,  $p < 0.01$ ) and trust ( $0.28$ ,  $p < 0.01$ ) significantly influence team performance. Moreover, these processes are mainly facilitated by leaders who are people-oriented, by raising their autonomy as well as responsibility, being supportive, empowering, considering, and by establishing a positive relational environment within the team (Burke et al., 2004; Ceri-Booms, Curşeu & Oerlemans, 2017). Nonetheless, Powell et al. (2004) emphasize communication as a more task-oriented process, just as coordination and task-technology-fit. However, it should be considered that a study by Picolli, Powell and Ives (2004) did not find any significant influence of communication as well as coordination within virtual teams on team performance, but did so on satisfaction (communication:  $p = 0.002$ ; coordination:  $p = 0.000$ ). So, it can be stated that the former does add to team effectiveness through satisfaction and not performance.

Summarized, process-oriented team performance is primarily influenced by relational leadership behaviors, although there is no overall agreement under the researchers.

Next to this, an output-oriented approach can be measured by different outcomes (e.g., meeting goals, quality, costs, functionality, etc.) which may vary amongst several teams. Burke et al. (2004) and Ceri-Booms et al. (2007), introduce goal attainment and a primary focus on accomplishing tasks as behaviors by a leader, which shows similarities with task-oriented behavior by a leader. Therefore, it could be suggested that in line with the statement above by Glickman et al. (1987), output-oriented behavior is mainly presented by a leader who performs task-oriented behavior.

Despite the fact that the process-oriented as well as output-oriented team performance seems to be influenced by one type of a leader's behavior (e.g., task-oriented or relation-oriented) of the hierarchical taxonomy by Yukl (2012), it should be emphasized that both types of behaviors could occur in one of the aspects as presented by Powell et al. (2004). Besides, Burke et al. (2006) and Fernandez (2008) highlight in their studies that relational-oriented behavior as well as task-oriented behavior by a leader has a positive influence on team performance. As a consequence, due to the relationship between the components of team performance and leadership behavior, this study considers workers' perception of team effectiveness as the result of job satisfaction as well as both process-type and output-type team performance.



## 3. Method

### 3.1 Research Design

To explore the impact of leadership behavior on the perception of team effectiveness throughout the lifecycle of a virtual team is central within this study. An empirical qualitative study is conducted. Ahmad, Gogoi, Irfan, and Srivastava (2019) describe qualitative research as a form of research which is applied when the researcher wants to gain an in-depth understanding of behaviors, experiences, attitudes, intentions, and motivations, out of observation and interpretation, to discover what the observants think and feel. So, it is a type of research where large attention is paid to the perspective of participants (Ahmad et al., 2019; Verhoeven, 2014). Furthermore, since human behavior is often described as context specific in the literature, it should be researched holistically instead of being manipulated by quantitative measures (Ahmad et al., 2019). Subsequently, a qualitative research method has been selected, because the behavior of a leader and his/her perspectives are playing a central role.

Although qualitative methods try to find the underlying reasons the participants give to specific situations which quantitative studies are unlikely to provide, Verhoeven (2014) also introduced some drawbacks. For example, when conducting qualitative research, the size of the sample is often found to be small, which could cause a concern when looking to generalize the obtained information. Next to this, the analysis of qualitative data is found to be more time consuming, due to the fact that interviews need to be transcribed and the data may be more difficult to interpret due to diverse responses to open-ended questions. (Verhoeven, 2014). Nonetheless, this could lead to a rich set of data and provide fruitful and novel insights to the researcher (Qu & Dumay, 2011). In short, even a qualitative research design has some benefits as well as drawbacks, given their appropriateness to answer the research question(s) of this thesis, it is adopted in this paper.

### 3.2 Data collection and data instrument

The collection of data is done by interviews, since this provides the interviewer with the possibility to acquire information about the perception of the respondents concerning leadership behavior throughout the lifecycle of a virtual team. 15 participants were interviewed, in a face-to-face setting when possible, although due to the COVID-19 pandemic several interviews have been taking place online. The first situation was in favor, since it allowed the

researcher to also observe non-verbal communication, next to verbal communication, which enhances the entire communication between interviewer and interviewee (McIntosh & Morse, 2015; Verhoeven, 2014). Also, due to the physical presence, the interviewer might have been able to have observed any discomfort by the participant, such matters could be solved by anticipation of the interviewer (e.g., a person is feeling uncomfortable and the interviewer tries to make them feel at ease). When interviews were conducted face-to-face, they were preferably held in the setting of the interviewee, as this reduces the chance of any discomforts.

As aforementioned interviews were the selected method, since the response rate is also higher for this method in comparison to surveys (Verhoeven, 2014). More precisely, a semi-structured interview was selected. This most common interview type involves an interview guide with pre-set themes or questions which will be covered during the interview (McIntosh & Morse, 2015; Verhoeven, 2014; Qu & Damay, 2011). One of the main advantages for choosing this specific type of interview, is that similar questions are asked to the interviewees per theme. As a consequence, it facilitates the comparison of themes during the subsequent analysis of the data (McIntosh & Morse, 2015). Next to this, these themes help the interviewer to guide the conversation towards the acquisition of the information concerning the matters the researcher wants to learn from. Also, due to this semi-structured approach with the use of an interview guide, the whole topic has been covered but there was also room for the researcher to ask follow-up questions when the respondent discloses a particularly relevant situation or topic (McIntosh & Morse, 2015; Verhoeven; 2014; Qu & Damay, 2011).

Furthermore, a life story interview is used in the context of a team, in combination with a semi-structured approach. A life time interview is described by Adriansen (2021, p. 42) as: “a method for capturing people’s own perceptions of their lives.” To elaborate, the participants were asked to share stories about their experiences, which could disclose different “understandings and the significance that people might give to their life experiences” (Chaitin, 2004, p. 2). By applying such a method in the context of a team, perceptions of different experiences that are work related can be captured. These different perspectives could shed new light on how leadership behaviors affect satisfaction and team performance throughout the lifecycle.

In addition, Bott and Tourish (2016) introduced the critical incident technique, a method which could be used next to other methods. This technique is applied within this study and concerns a selection of procedures for collecting observations of human behavior directly (Bott & Tourish, 2016). Moreover, this critical incident technique stimulates the interviewees to expand on critical incidents that had a positive or negative impact (Yukl & Van Fleet, 1982).

One of the main benefits of this technique is that it provides a plethora of details, which are unlikely to be acquired by the usage of a questionnaire (Yukl & Van Fleet, 1982). To elaborate, Bott and Tourish (2016) add that this technique could shine light on unexplored anomalies that could improve the existing theory concerning the topic interest. Furthermore, the researchers state that the critical incident technique allows the interviewer and interviewees to discover the link between different circumstances and its effect (Bott & Tourish, 2016). So, by applying this technique in combination with a semi-structured protocol all determinants of the virtual teams' lifecycle were covered, while also acquiring detailed information on how leadership behaviors contribute to the team effectiveness.

Moreover, in Appendix I a questionnaire is presented, which has been sent to the participant priorly to acquire several demographics and to provide information on the phenomenon team effectiveness, to ensure there are no misinterpretations of this phenomenon, to be able to get better insights in the sample of this study. Also, an informed consent form and information about this form were sent before the interview, which asked for permission to participate and make use of the data for this study. Followed by the interview guide, as presented in Appendix II, which shows the several topics which have been covered during the interview. The interview protocol is presented for the use of interviewing a team member, although the questions will be adjusted for the use of interviewing a leader. For example, a question like: 'Can you describe how your leader makes sure everything is organized in order to achieve the team's goal?' will be changed to 'Can you describe how you as a leader make sure everything is organized in order to achieve the team's goal?' Furthermore, at the start of the interview, the participants were asked if they agreed with the informed consent and the recording of the interview, which will be used later on for the analysis. Also, the interviewee was informed that the data would solely be used for the means of this research. At the start of the interviews the interviewees were introduced to the topic of this interview and the central question. Which was followed up with the first question of this interview. Afterwards, follow-up questions were asked, or another theme was introduced. So, with the assistance of the interview guide, data has been collected on the behavior of a leader on team effectiveness throughout the lifecycle of a virtual team.

Choosing interviews as the method of data collection brought several benefits for the interviewer. For example, the observability of verbal and non-verbal behavior, which is of great interest given the behavioral interest of this research. As a result, this method was found to be the most useful to acquire information and bring up hidden facts about e.g., behaviors. Thus,

this method has been most suitable to find all the underlying and potentially disclosed facets of the perception of the interviewees concerning the research topics.

### 3.3 Selection of participants

Due to the fact that this thesis focuses on leadership behaviors and how they affect team effectiveness throughout the lifecycle of a project team in a virtual environment, a specific selection of participants has been made. Due to the focus on leadership behaviors two points of view were investigated. First of all, from the leader's perspective, the participant had a supervisor role. Next to this, given the interest of this study, followers were interviewed as well, to see how a superiors' behavior is perceived by its team members. Therefore, to see if there is a discrepancy between how a leader is behaving and how it is perceived, superiors and followers of a virtual project team were selected to participate in this study. Also, the participants have experienced the model by Zander et al. (2013) and were in a project group to do so. These selection criteria were verified through upfront communication, before actively selecting the candidate to participate in this study. Lastly, it should be noted that this research had its focus on teams from Dutch organizations in different sectors only, although nationality was not a specific exclusion criterion.

Given the qualitative nature of this study and the importance of interviewing leaders, a convenient sampling method was chosen. More specifically, a sampling method in which participants are selected to participate in this study, based on their availability, was opted for (Verhoeven, 2014). The participants were recruited by putting the network of the researchers to use. For example, by posting a message on LinkedIn, and personal emails to get in touch with potential interviewees. Next to this, snowball-sampling has been applied. To elaborate, through the aforementioned means and at the end of an interview, the respondent has been asked if he or she knew new participants for the research. Moreover, for this study 15 participants were interviewed, with a balance between participants with a superior role and team members. To elaborate on this, Braun and Clarke (2016) suggested a minimum of 6 participants to be able to identify patterns and make use of thematic analysis. The latter will be elaborated in the following section. Therefore, 8 leaders and 7 followers of a virtual project team have been interviewed, whereas some of them consisted of pairs, to be able to make conclusions about both perspectives that carry some weight. Accordingly, after these 15 interviews no new themes emerged, so data saturation was met.

An overview of the participants and their characteristics is presented in Table 3.3.1. Each participant is Dutch and worked at least one year within their team with a maximum of 18 years at the time of the interview. Furthermore, team sizes varied from 3 team members to a total of 18 team members. To continue, of the participants 53% is male and 47% female. Furthermore, 33% are 25 years or less of age, 40% of the participants fall within the age range of 26-35, 13% are aged between 36 and 45, and 6% are aged between 46 and 55. Moreover, 20% of the participants have finished University, 73% have finished University of Applied Sciences (UAS), and one participant's highest degree is high school. The participants' names are pseudonymized and given to them at random.

**Table 3.3.1: Characteristics of Participants**

<b>Name</b>	<b>Role (Leader/Follower)</b>	<b>Gender (Male/Female)</b>	<b>Age (Range)</b>	<b>Education Level</b>	<b>Industry</b>	<b>Function</b>
David	F	M	<25	UAS	Media	Designer
Denise	F	F	<25	UAS	Media	Business Developer
Daphne	F	F	26-35	University	Public	Accountmanager
Edward	F	M	<25	UAS	Manufacturing	Sales representative
James	F	M	26-35	UAS	IT	Digital Consultant
Charles	F	M	26-35	UAS	IT	Business consultant
Patricia	F	F	<25	UAS	Education	Researcher
Richard	L	M	<25	UAS	Public	Project Manager
Karen	L	F	46-55	UAS	Consulting	Consultant
Thomas	L	M	26-35	University	Hospitality	Projectmanager
Susan	L	F	36-45	University	Education	Senior Lecturer

Mary	L	F	26-35	UAS	IT	Manager Sales team
Jennifer	L	F	36-45	UAS	IT	Product lead
Brian	L	M	26-35	UAS	Hospitality	Marketing anager
Kevin	L	M	26-35	High school	IT	Technical director

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### 3.4. Data analysis

The selected method for analyzing qualitative data is thematic analysis through an abductive approach, because it allows the researcher to explore the patterns between the topics and the research question, and to summarize extensive data rapidly (Braun & Clarke, 2016). This approach is also called the theoretical thematic analysis, which is driven based on the theoretical interest as presented in chapter two of this study (Braun & Clarke, 2016). Moreover, the recordings have been transcribed verbatim by the researcher in Dutch, and out of those transcripts relevant quotes have been translated to English. Afterwards, these transcripts were coded by themes, this has been done mostly deductive based on the behaviors of a leader as presented in Table 1 and the team's lifecycle. Besides, new themes were allowed to emerge as leadership behaviors within virtual teams has seen little exploration in literature, which is of a more inductive nature. The combination of this is also called an abductive approach, which allows the researcher to transition between an inductive and deductive approach (Gioia, Corley & Hamilton, 2012). More precisely, the abductive approach allows the emergence of new themes that could not be matched to the existing categories or theory. As a consequence, the researcher can explore beyond existing theory, if the results do not suit the empirical reality (Bamberger, 2018).

Following Gioia's method, first of all, the transcripts were coded, by codes which were created by using the participants' own words as much as possible. These codes are in line with the first order concept of Gioia et al. (2013). Subsequently, these codes were revisioned, by merging similar codes for example. Thereafter, codes have been clustered on similar outcomes (Braun & Clarke, 2016), which corresponds with the second order themes of Gioia's method. The themes for the clusters are predominantly based on the literature concerning leadership behavior (e.g., planning or monitoring behavior) and a virtual team's lifecycle (e.g.,

welcoming-phase or working-phase), including the allowance of emerging new concepts. Again, these themes were revised and clustered into aggregate dimensions (e.g., planning and monitoring behavior into task-related leadership behavior). After this thorough analysis of the data, the structure gave rise to the results of this study with the support of quotations in relation to codes as well as themes (Braun & Clarke, 2016; Gioia et al., 2013).

## 4. Results

Below, the influence of different leadership behaviors and how they affect team performance will be discussed first, followed by the change in behaviors throughout the virtual teams' lifecycle. These findings are presented by use of quotes mentioned during the interviews, the main quotes are presented within this chapter, and supporting quotes are shown in Appendix IV. At the end of the chapter, an answer is provided to the main research question.

### 4.1 Influence of leadership behaviors

When addressing the first research question: "What leadership behaviors are more influential in VTs to increase team performance?" and taking a closer look at the analyzed data, the respondents, both leaders and followers, rather quickly introduced that planning and clarifying behavior were the most important and frequent task-oriented behaviors that virtual team leaders adopted. Taking a closer look at the relationship-oriented leadership behaviors, the supporting behavior showed to be most prominent. Furthermore, a novel behavior has emerged which is discussed thoroughly. With the use of Table 4.1.1. the data has been categorized with the assistance of the Hierarchical Taxonomy of Leadership Behaviors. Regardless of the task-oriented and relation-oriented nature of these behaviors, the result section is not following the aforementioned structure. As presented in the 2nd Order Themes some behaviors written in capital letters, these showed to be most prominent and will therefore be discussed first, followed by the subsequent behaviors. Other behaviors in the table have been underlined or bold based on which has been discussed mostly amongst the leaders or subordinates. For example, monitoring behaviors were emphasized mostly by leaders and are therefore addressed in bold, whereas empowering and developing behaviors were given more attention to by the followers which has been underlined.



**Table 4.1.1.:** Data structure of leadership behaviors (based on Gioia et al, 2013)\*

First order concepts	2nd Order Themes	Aggregate dimensions
Creating a plan	<b><u>PLANNING Behavior</u></b>	Task-oriented leadership behavior
Organizing resources		
Development of rules		
Introducing tools		
Utilizing everyone's strength by assigning them to the right tasks		
Making agreements about the process		
Goal clarification	<b><u>CLARIFYING behavior</u></b>	
Making sure everyone knows what is going on		
Answering questions		
Keeping good communication		
Keeping short lines		
Making the way clear to reach the goal		
Keeping in contact with each other		
Being open and approachable		
Making everything clear	<b>Monitoring behavior</b>	
Investigating the progress		
Asking the staff for updates		
Analyzing the end product and taking follow up steps		
Evaluating from a distance		
Minimize		
Discussing the work thus far		
Monitoring processes to make them better		
Resolving problems	Problem-solving behavior	
Managing conflicts		
Asking team members about future orientation	<b><u>INVOLVING behavior</u></b>	Long-term oriented leadership behavior
Involving a member in development of processes		
Making sure subordinates are not wandering off		
Involving a follower in the future design of the organization		
Creating an identity		
Making sure the team knows the 'why' behind the tasks		
Put everyone in his strength	<b><u>SUPPORTING behavior</u></b>	Relation-oriented leadership behavior
Approaching per individual		

Cohesion of the team		
Creating a nice atmosphere		
Trust is important		
Being transparent		
Being a facilitative leader		
Acting like a coach		
Stimulate motivation		
Having a personal approach		
Making time for staff		
Being a good listener as a leader		
Open for critics/feedback		
Looking for the staff needs		
Enthusing the team		
Spending time to build relationships		
Stimulating to a subordinate to learn	<u>Developing behavior</u>	
Reflective learning		
Giving space for mistakes/learnings		
Setting personal goals		
Sharing experience		
Personal reflection		
Giving feedback		
Offering career opportunities		
Offering space for development		
Giving compliments	Recognizing behavior	
Celebrating successes		
Showing appreciation with touchable features		
Making own decisions	<u>Empowering behavior</u>	
Making difficult decisions		
Involving in decision making		
Authority because of the experience		
Staying participative with authority		

**\*Legenda:**

CAPITAL LETTERS: Received most attention by both leaders and subordinates

Underlined: Received most attention by subordinates

**Bold**: Received most attention by leader

#### 4.1.1 Planning behaviors

First of all, when looking at the output-type of performance (e.g., meeting goals, quality, costs, functionality, etc.) insufficient *planning behavior* by a leader could lead to several problems. For example, when processes were not clearly described and in order that not every person is aware of what to do when and how, deadlines are less likely to be met. Both leaders and subordinates emphasized the importance of this behavior. From the leaders' perspective Karen outlines the importance of planning behavior and provides an illustration:

*“What is of utmost importance is to arrange the backbone of the organization or team as easily as possible. For instance, that a complete stranger could know his way around within one day. What I mean with that is the processes are in order and described, that everyone knows when, how and what to do and what their effects are if they meet or do not meet their deadlines. To clarify, I see it like a computer, if a certain component is not working accordingly, the whole computer might be really slow or not working at all.” (Karen, leader)*

This example emphasizes the importance of planning behavior and by expressing this behavior not sufficiently, it could result in several critical problems.

Next to this, arranging the resources in an inappropriate manner by a leader could also be harmful to the process-type outputs and satisfaction of the employee. Suppose that workload is not organized evenly amongst team members, one could feel frustrated that another team member is delivering less to the project. Another example was introduced by another leader, Jennifer, with a more person-oriented approach:

*“It makes no sense to place a person who is good with numbers on tasks about writing articles, each person has its strengths and weaknesses. Consequently, it is my job to have a clear plan to ensure that people achieve their full potential, and to wonder if I could introduce tools to make it easier for them. [...] I don't want to see nine people focusing on a solo task and leave one person on its own swimming in the deep. Each of them should be satisfied with their tasks and workload, this asks for organization of our resources.” (Jennifer, leader)*

Hence, by showing that if you do not organize your team members accordingly it could hurt team performance as well as an individual's well-being. As a consequence, the team will be less effective.

When taking a closer look at the followers' perspective, there seems to be an overall agreement with the leaders' perspective about insufficient planning behaviors. James

mentioned that this caused chaos in their team, and Patricia raised that it led to frustration. The following quotes support those statements:

*“I understand that each of us has its own way of working, however if our project manager has his own way of planning and organizing things he should get everyone to get along. In one of our projects it did not happen like this which resulted in chaos, cause we were not able to find specific documents. Therefore, we did not meet the set deadline.” (James, subordinate)*

*“My manager, well she is so busy, chaotic and not that great in organizing things. You can see that she is not always in control, which makes me frustrated sometimes. I have learned just to accept it, however those flaws often result in our team needing to work harder on specific assets.” (Patricia, subordinate)*

Thus, in general, it could be said that leaders who are not showing the desired planning behaviors, team effectiveness could be harmed via team performance in the process as well the output or through unsatisfied team members. By doing this in an appropriate way, an employee can focus on what really matters and conflicts could be reduced.

#### 4.1.2 Clarifying behaviors

Looking closely at *clarifying behavior* it shows to give the same outcome as aforementioned. Namely, the emergence of critical issues, unsatisfied employees, and weaker process- and output type of performance. When a leader is not making processes and steps clear, especially not making the goal clear, with strong communication and clarification a lower performing team could be the result of it. This was a congruent statement carried by followers. For instance, Karen, a leader, notes that having precise objectives was crucial to boost team performance:

*“Imagine, you are going to start a project. The first thing you do is to organize a kick off where you share all ins and outs. Not only about the content, but also be really clear about the result. Who should do what piece of the project, each of them gets its own (personal) goals, which acquires a good planning. At that specific moment you should give people the opportunity to ask everything, about the project, goals, well literally anything.” (Karen, leader)*

Many other leaders were in line with these statements, although some interesting counter arguments were given, i.e., that too much clarifying behavior (e.g., explaining each step of the process in detail) could result in a limitation of the followers' creativity and autonomy:

*“By throwing them in the deep sometimes, I set the goal and let them figure out how to reach it. The process could take a bit longer but I do not limit them in their creativity by giving them steps to follow. This often results in new insights beyond our imagination.” (Thomas, leader)*

Whereas leaders emphasized the clarification of the goal, followers emphasized that they liked to have a leader who was open and approachable, when questions or uncertainties arise to clarify the way if necessary:

*“What I really like is that he is very open to listen and makes time when we have questions about certain matters. He shows that he understands us and where the questions come from, although he will also try to shine light from his perspective if he does not agree. What I Like most, is that he does not give an instant judgment about it, so that I will not ask or say something anymore.” (Denise, subordinate)*

#### 4.1.3 Supporting behaviors

Another behavior that really stood out from the participants was the *supporting behavior*, which is of the relation-oriented behaviors meta-category. Such behaviors mainly affected the process-oriented output of performance and especially the personal wellbeing of a team member. Facilitating leadership and behaving like a coach to the team has been spoken about frequently, which shows similarities with the supporting behavior. Also, the leaders were corresponding on the fact that they tried to continuously look for opportunities to help their team achieve their tasks and (personal) goals. The statement made by Kevin captures the congruence amongst several leaders:

*“As a coach. I am not the president of your soccer club, I think that I behave myself more like a captain. I try to work along with my colleagues to share my knowledge and organizational knowledge. From this perspective I am better able to translate things more easily to my team and to the rest of the organization, by like being the bridge between them so to speak. By being busy with all the things my team is doing, I understand what they do, what's going on in them, and how things are doing. [...] So, as a manager, but I do prefer the word coach, you need to try to assist your employees to do their job better. Also, by asking questions on which role you can play so a follower can do their work better. Maybe they need a new computer or something.” (Kevin, leader)*

When taking a closer look at the supporting behaviors, but from the followers' perspective, it is clear from the interviews that followers like to be taken seriously and listened to. For example, when there was an idea on how to make the team process better. Overall appreciation is found concerning supporting behaviors and coachlike leadership style, to illustrate Daphne shows that she is satisfied with such behaviors by their leaders:

*“Well, she is a great woman, really informal and people-oriented. Due to the fact that she has such a role, she takes me along in the process and always with the remark of: “Hey, do especially things that you like”. And of course there are tasks that need to be done, however she is supportive and super approachable. Something I find particularly important.” (Daphne, subordinate)*

Furthermore, leaders' question about “*how are you doing?*” was very appreciated by followers and considered by virtual teams of great importance. Asking a follower if there was anything necessary to improve the way they were working, if they needed anything etc., was perceived as important and valuable. Kevin's quote from above provided a great example of such touchable features, but there were also other personal related matters. To elaborate, asking about a person's personal situation as a leader, when working remotely, is pivotal since you cannot really observe how a person is doing as when meeting someone in person. The participants were consistent with the fact that such questions remain of utmost importance. Since, they appreciated non-related work communication and such personal interactions. For example, a follower can be accomplishing his/her task, while not being that happy at this place. Satisfaction is repressed which is likely to hurt the performance of the team. The significance of these questions was given by several participants. David, a follower, highlighted the importance of such questions, and that a leader should tap-in to see how a follower is doing on a regular basis:

*“Before working in a virtual team, it was like every morning: “Hey how are you doing?” and it showed to be less of this. However, my manager tries to continue to show his interest. He'd be like: “Hi, David I haven't talked to you in several days, how is it going? What are you currently doing and is it going okay? Are you still feeling good and enjoying the work? If there is anything I can do, just let me know.” So, what I'd think leaders should do is approach a person on a regular basis to see how everything is going.” (David, subordinate)*

Looking at the leader's perspective, Mary emphasized that by engaging in such behavior, she can track signals and figure out if someone is possibly dealing with an issue:

*“I organize meetings, we call them one-on-ones. These meetings can be about anything, your weekend, your wife or name it. Because I do find it important that I know how it is going with a person. [...] By doing this regularly, I can often see that someone is dealing with something. Often they give signals or speak this out.” (Mary)*

#### 4.1.4 Involving behavior

Besides, supporting behavior does not fully capture the nuances of the behavior required in virtual teams. Due to ambiguity, the participants showed that there is behavior required which goes beyond asking questions like: *“How are you doing?”* and *“Do you need anything from me?”*. To elaborate more, this aspect goes beyond purely work-related matters and has its roots in task-oriented as well as relation-oriented leadership behavior, especially in supporting and planning behavior. Since, this behavior is about people’s involvement and engagement, it has been labeled, *involving behavior*. This behavior can be described as involving individuals on the one hand in processes and strategies (e.g., future design of the organization or development of team processes) by asking how they feel about it and on the other hand in team cohesion, strengthening the identity of your team, the norms and values and such related matters. David mentioned that he felt more connected to the organization and team, which caused him to be more motivated for working on the project:

*“Well, I have had several moments, once a whole afternoon that I talked with my manager about the organization. Questions arose like: “How are you doing?”, “What are your visions about the organization?”, “What is your view on this?”, “What do you think about the next half a year?”, and “Are there any things or processes you would like to change?”. So, he listened to what I had to say and if this could be put to use within the organization. It is just really great that when you get asked such questions, you get the feeling like: okay, I really get involved within the processes and they appreciate my opinion very much. This makes me feel more valued within the team, and makes me go the extra mile.” (David, subordinate)*

Similarly, Thomas showed to agree with this, by involving team members in the same organization to build it with the ultimate goal of strengthening the team’s cohesion. He added that leaders should try to create an identity, so that people feel like they are part of the organization. To illustrate, a person can state that he or she is just going to University Y, but saying that he or she is a proud student of University Y is a whole difference:

*“If you build an organization where you do not involve your people, they just do what you ask them to. This is not what I prefer, you need to ask them about their wishes and what to do, then we build the organization together. [...] So, you are likely to create a kind of persona of your team members in which they recognize themselves. For example, when they meet up with others they do not say I work at organization X, but they state that they are an organization X’er. By creating an identity, I think it’s really cool and you feel like your team is proud to be a member of it.” (Thomas, leader)*

Next to such questions, and directly related to involving people within the processes and by creating an identity, people should also be informed regarding the reasons why they are doing the things they do. Mary provides an example:

*“Not only for employees that are familiar with the organization but also for new employees it is important to create a binding relationship with the business and team. People who work here longer within the team are familiar with why they work here and where they put their effort in. Especially new employees need to get involved in the organization’s vision and values. If this is not done they are just doing their tasks, but do not know what they are doing them for and what the company actually is about. To create these long-term bindings with your team is of importance to stimulate the performance of our team.” (Mary, leader)*

As mentioned by a leader, making it a team effort and involving them in the organization, each person feels more responsible and the communication amongst the team members is likely to increase. The outcome of this behavior is that a leader keeps its employees motivated and satisfied during the long term of the project. Moreover, this results in employees not wandering off on their own island. Since, they do not feel involved in the project, which the participants agreed on, and which is of importance for virtual teams. Otherwise, it is likely to result in employees just doing their tasks and nothing more, which could negatively impact both process-type and output-type of performance in the long term, projects to come and during the development of the organization.

#### 4.1.5 Assisting behaviors

When looking back at the other behaviors of Yukl’s taxonomy, it seems like monitoring, problem-solving, developing, recognizing, and empowering are there to assist the earlier mentioned behaviors. From the participants’ words, these behaviors have a more indirect effect on team performance. For example, each leader mentioned that show *monitoring behavior*, they monitor the process, however there is not always a need to make these behaviors clear and directly impact the team by that. On the contrary, when this is done, in line with the information



about extrusive monitoring mentioned in the theoretical framework, followers agreed that they could be limited in their way of working and it makes them feel that they are not trusted. This is also confirmed by the participants. Charles introduced a negative experience with his previous leader:

*“... the previous project leader, we just had a different character. He gave me a feeling, because he was so much into monitoring than my current project leader, that I was continuously watched up on. This was anything but nice, if I could not do things my own way.” (Charles, subordinate)*

Whereas Daphne, highlights this from a more positive angle:

*“... my manager steps back during the process phase, due to a clear premeditation she does not need to monitor that much. I do like this, I do like it when I am not monitored that often, but just receiving space. This made sure that I could make the project my own, and set it to my hand instead of doing it the way my manager wants. It was really great.” (Daphne, subordinate)*

From the leaders' perspective, a few leaders introduced trust next to monitoring which is also in line with the negative impact of extrusive monitoring. An example was provided by Richard:

*“You could ask for feedback or updates regularly, but what I do think matters is focusing on the result. So, do not start to micromanage. What I mean with that is your team works remotely, and as a consequence you cannot see if someone is really working hard. Therefore, you should not monitor that, but see how the individual is performing. If this is accordingly, it should not matter. Is it better than expected? Be honest and give him or her the appreciation they deserve. Focus on the end result and give them trust, if you do so you really put each individual into their strength.” (Richard, leader)*

Not only trust is presented next to monitoring behaviors, also by introducing some *empowering behaviors*, a leader can show that trust is placed in its employees. A congruent argument amongst followers was that this motivates them, because they were able to create their own path, make the project his or her own, lesser communication is required, and when looking at the personal well-being the opportunity to also rule about their own agenda. So, receiving the freedom to make their own decisions, followers showed to be more satisfied with their work:

*“Personally, I do think that by making choices independently, it will eventually lead to a feeling like you are the one with the most knowledge about it. This also gives the feeling that you make the project*

*your own, and give your personal touch to it. The freedom we get from our leader to do so, is something I really appreciate.” (James, subordinate)*

Another behavior that was mentioned is the *problem-solving behavior*, this often emerged if there was not sufficient supporting, planning or clarifying behavior. For example, little clarification about the goal could lead to misinterpretations, which results in problem solving behavior to resolve those mistakes. The participants were like-minded concerning this behavior, the presentation of it depends on the situation and the outcome results in mutual effort:

*“For me the most important thing is, putting all the cards on the table. Is there a problem? Put your cards on the table, if for one or another reason a person is not able to be transparent. In my opinion, the effort you make is likely to be less effective.” (Richard, leader)*

Lastly, *recognizing* and *developing behaviors* seem to go hand in hand. For example, reflection about the process, providing feedback or giving compliments all show to support the development and learnings of the employee. The appreciation given by a leader also increases satisfaction amongst employees, which all followers agreed on. Next to this, the room for development increases satisfaction and the expertise/knowledge of the follower which in turn delivers to performance.

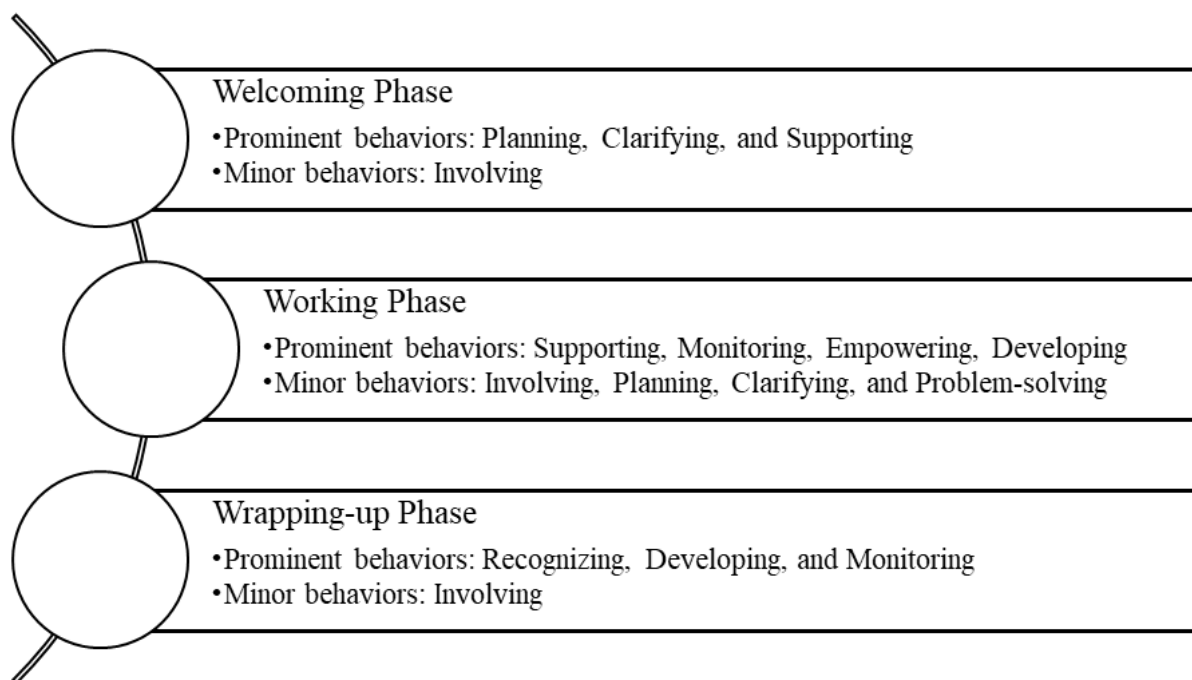
#### 4.1.6 Conclusion

To conclude, *planning-*, and *clarifying behaviors* seem to be the most influential of the task-oriented behaviors on team performance. These mainly seem to affect the ‘hard’-performance (e.g., deadlines, costs), although leaving employees in uncertainty about steps to participate or bad planning could also make them less satisfied and hurt team performance via the ‘soft’-performance. For relation-oriented leadership behaviors the *supporting behavior* seems to be the most influential in virtual teams. This behavior is particularly interesting because it emphasizes and relates to team performance here and now. On the contrary, the newly introduced *involving behavior* shows to have a more long-term effect on the performance of the individual as well as the team’s performance. Lastly, the remaining behaviors of the taxonomy show to have a more indirect effect on team performance.

## 4.2 Leadership behaviors throughout the lifecycle

Taking a closer look at to what extent leadership behaviors differ throughout the virtual lifecycle of a team, different behaviors showed to be displayed depending on the phase. Figure 4.2.1. gives an overview of which behaviors address a more prominent or minor role during the specific phases of the virtual team's lifecycle based on the respondents' experiences and perceptions.

**Figure 4.2.1.:** Prominent and minor leadership behaviors throughout a virtual team's lifecycle.



### 4.2.1 Welcoming phase

At the beginning of the lifecycle of a virtual team, the welcoming phase, most prominent behaviors introduced by the respondents showed to be *planning*, and *clarifying behaviors*, followed by *supporting behavior*. First of all, several leaders pointed out that they provided their followers with sufficient time to get acquainted with the project. Besides, next to getting familiar with the project, getting to know your other team members is of influence as well. This was also confirmed by Charles, who presented the activities during the introduction of their project:

*“When my team starts a new project, we like to take one or two days for an introduction. During this moment we try to really get to know the ins and outs of the topic. To know where we stand, where to*

*find specific assets, which pitfalls are there and also getting to know each other. We introduce ourselves, and talk about our hobbies, for example. Just the informality is really important. Taking this time at the start of the project reduces my questions and entuses me to start working on it.”*  
(Charles, subordinate)

James also presents his confirmation, that getting acquainted with the team and the project is important:

*“If we start a new project we schedule several meetings, two meetings with the team and one with the customer. One team meeting is about the project and the other is about building relationships with each other. In those meetings we get the time to get familiar with what the end product should be, we share different insights on how to get there and focus on strengthening our bonds with each other and the customer.”* (James, subordinate)

An overall agreement was found amongst the respondents that the goal should be specified and clarified. As a consequence of good clarification of the end goal, a path could be created on how to get there as a team and which steps to pursue. However, the respondents did not seem to agree on this aspect and mention a counter argument. Namely, the dot on the horizon is important, although not each step should be clarified as well. This could limit their creativity and be harmful to the team member, since he or she could not get to that point by doing it the way they prefer to. Correspondingly, team performance could be hurt. Support is shown by Patricia, a follower:

*“I don't want to have each step described in detail upfront, this is also the case for the result. I do like it if we receive a direction of what the end result should more or less look like. The steps on how to get there, we should take into account from time to time. What should we do now? What shouldn't we do? Yes, this works for me.”* (Patricia, subordinate)

Thus, in the first phase of a virtual team's lifecycle by the creation of common goals, organization of resources and a set plan, the establishment of relationships, clarifying and supporting leadership behaviors show to have a major role.

#### 4.2.2 Working phase

Second of all, when entering the next phase of the lifecycle a shift of prominent behaviors could be found as well. Among the participants, there seemed to be a main focus on two aspects; performance management and the development of the teams. Furthermore, the leaders agree

that of the task-oriented behaviors, planning and clarifying behaviors are overtaken by *monitoring* and the minor role of *problem-solving behavior* is introduced. To specify, the latter is described as minor, because a strong early phase of the lifecycle could reduce the number of emerging problems, which leads to a weaker influence of the problem-solving behavior. The following quotes provide insights on how leaders behave during the second phase of the lifecycle. To begin with Jennifer, a leader, who introduces examples of monitoring and developing behaviors:

*“After we started the project, I hand everything over to the team. Then I will monitor the project and try to stay informed. I do not only monitor the progress, but also if I could make anything better for my team to improve the process. This could be in the form of better automatization, for example. [...] I try to stimulate the team to learn and find out how they would like to customize their job. If they need certain competencies I will try to give them tips or offer them some courses to improve in those competencies” (Jennifer, leader)*

Followed by David, a follower, who presents that his leader's presence is weakened during this stage and that he experienced monitoring and problem-solving behaviors by his leader:

*“Subsequent to the kick-off, I can see my manager disappearing into the background. He will just interfere with the process if he sees if something is not going accordingly. One time, he saw that we did not meet a halfway-deadline. Where he called the team together to find out what the issue was and how this problem could be solved.” (David, subordinate)*

James, a subordinate, experienced this similar with a weaker presence of the leader during this phase. In addition, he emphasizes the developing behavior that was introduced by his leader:

*“Yes, actually he is only here during the project to receive an update about the status of it and to make sure we have enough knowledge to continue the process. One time, he let us even do three different masterclasses to ensure we developed ourselves.” (James, subordinate)*

To elaborate, Mary, a leader, mentioned that she remains a participant within the project in contradiction to the quote by David and Kevin. Therefore, she is able to see where the project is heading and minimize problems at its roots:

*“At first my role is really to get the project started, later on I will just participate within the team to work on several tasks. By doing so, I am able to see where we are heading and take actions if*

*necessary. Besides, it makes me able to resolve or minimize problems as soon as they emerge. So, my main role is to manage the performance of our team.” (Mary, leader)*

However, it should be emphasized that clarifying and planning behaviors still play a part in this phase of the lifecycle. For example, keeping good communication and being aware of deadlines. Moreover, in line with some quotes above, leaders are now mainly monitoring the processes and progress, and if they notice that there is something not going according to plan (e.g., not meeting deadlines, low quality deliverables) they are likely to act upon this. For instance, low quality deliverables, could be followed up with different behaviors. Several new examples were mentioned by the respondents, *clarifying-behavior* if something is not clear or *developing-behavior* to ensure that the follower has sufficient skills to provide good quality deliverables. Conversely, when the quality is good, a leader can introduce recognizing behavior based on their findings.

On the contrary, when looking at relationship-oriented behaviors the *supporting behavior* remains to be important as several leaders mentioned. Different leaders introduced the fact that they were facilitating their followers, by asking questions like if there was anything standing in their way or could be done more easily. The outcome of such behavior is that employees could do their work better. Next to this, this stage resulted in leaders reducing their authority by the introduction of empowering behaviors, especially the followers agreed on the fact that they appreciated it if they could make their own decisions. Not only decisions about the product but also about their own agenda. Such appreciation resulted in more satisfied followers, which in turn leads to a better performing team:

*“We try to encourage each person to regulate their own creativity. If you are creative at 07.30 am, then you will start around this time. If you are creative at the end of the day or want to take a longer break in the afternoon, you do you. So did each of our team members find their way, which contributed to the productivity and the wellbeing of our team.” (Brian, leader)*

Kevin opposes the appreciation expressed by followers, if you give them too much freedom a follower could get insecure, which is harmful to the performance:

*“What I like is that by giving your team the possibility to make decisions on their own during this phase, you will get self-managing teams. However, once after I evaluated the project I found some flaws, I figured out that if you let your team determine too much by themselves they could get insecure. What should I do now? What really matters?” (Kevin, leader)*

In addition, *developing behaviors* make their entrance as well. Followers were congruent about the fact that they liked that there was room for development. Some liked to set personal goals, where another preferred following different masterclasses. Leaders tried to do this via direct interactions to stimulate the personal growth of their followers, but also by trying to create an atmosphere where making mistakes is allowed as this will only provide the person with new learnings. When comparing the different behaviors, it can be stated that there is a better balance between relation-oriented leadership behavior and task-oriented leadership in the second phase of the lifecycle. The participants show to agree with the statement:

*“I do think having a healthy mix of both approaches is great. Of course, it is important that you perform well, meet deadlines and do your tasks accordingly. But my manager thinks that creating a nice atmosphere is just as important.” (David, subordinate)*

*“I think that you need to make sure there is a constant combination, and this is really art if you can make it a combination of tasks and relations. If your team feels well, have the right resources, well you name it. Then they will meet their results. You cannot say: Okay I will just focus on the people now, or just focus on a task. [...] If you can make it a combination, especially in a virtual team in my view, you will get a well performing team. Not just people who do their thing, but a team who works together. The latter is a different story, because a group of people does not make it a team.” (Karen, subordinate)*

A combination of both task-oriented and relation-oriented behaviors is appreciated and this strengthens the virtual team effectiveness through the process-type and out-put type of performance. Taking a closer look at the aforementioned behaviors there shows to be a slight stronger influence or relation-oriented behaviors during this phase. Nonetheless, most of the component behaviors seemed to be situational so one type of meta-category or behavior could become more dominant.

#### 4.2.3 Wrapping-up phase

In the final phase often, leaders became more involved again. David stated just as most of the other participants, that the presence of the leader is intensified near the end:

*“Near the wrapping-up phase of a project, my manager is becoming more involved. He is at the start of the project present as well as at the end, because in the meantime he trusts us that it will be alright. At the end he would like to see the end product, then he knows if it's okay and if there needs to be something done differently.” (David, subordinate)*

Several followers mentioned that their leader tended to monitor if the deadline was going to be met and if the quality was as supposed. On the one hand, if the quality was not sufficient a leader will take follow up steps, and on the other hand compliments were given if the quality was right or above expectations. To elaborate on David, Jennifer confirms that she is also more present near the end and adds:

*“Near the end, it could become a bit more exciting in terms of the deadline. Will we make it? So, I will be there more often, so I’ll ask what is going on, what is the status, is it taking too long? In general, I do think it’s their process but if I do not agree with the result, I will take actions to ensure the quality is right for our customer. On the contrary, it’s not only negative, I will show my appreciation if my expectations are met.” (Jennifer, leader)*

Afterwards, when the deadline is due the participants agreed on the fact that it was time for reflection, with focus which processes could be better or more personal matters (e.g., time management of a follower). Followed by a close off of the project which the success will be celebrated. Moreover, the followers were congruent about the fact that they appreciated compliments and the celebration of success. Karen recognizes that reflection and the celebration of successes go hand in hand during this last phase:

*“At the end we celebrate! I always say that is the first thing we do, no matter the outcome. Afterwards, we will take a look at things that went well and aspects that could have been better, so that we can improve our process the next time. It is important that you look back, and also ask this to the employees, because they have stumbled upon topics as well.” (Karen, leader)*

When comparing the behaviors to the tasks opposed in the lifecycle model, they seem aligned. The dominant leadership behaviors in the wrapping-up phase are *recognizing* and *developing behaviors*. However, monitoring behavior is present as well. Thus, the dominant behavior mainly affects the personal wellbeing and growth of a follower, which delivers to the virtual team’s effectiveness.

Lastly, the newly introduced *involving behavior* appears to be present throughout the whole cycle, no matter the phase. To start with Brian, who highlights the importance of this behavior at the beginning of a project. Furthermore, Karen mentions how she shows the involving-behavior throughout the lifecycle. Subsequently, Thomas adds the reason for such behavior.



*“At the beginning I am involved with a certain customer we do the project for. My job and responsibility is to also deliver this to the team. Also, my enthusiasm. Who is the customer, and why are we the right team to work on this project? This all starts with the identity of why we do certain things and our values from the organization. By enthusing the team, making sure the team knows what to do, and why we do it like this, the team is way more involved in the project. I have experienced that if you do not do this, you start with a disadvantage.” (Brian, leader)*

*“I continuously try to shimmer the norms and values of our organization through each step we take. What I find particularly important is that my team identifies themselves with the aforementioned, because if they do they know exactly what they are working for. [...] Besides, asking how they would improve the processes of the project and more important the organization. I do this to bind people to my organization and by involving them they really get the feeling that we are improving the organization together. (Karen, leader)*

*“Asking how people are doing personally and if they still aspire their job, results in a more ambitious team. If a person does not aspire the role he or she is functioning in, they will just do their job and this does not create strong bonds with the team. In doing so, I prevent people from getting isolated and make them try to stand for this project.” (Thomas, leader)*

To summarize, the *involving behavior* throughout the lifecycle is there to create those long-term relationships with the team and also the organization. By involving individuals in different processes, future orientations, and letting them be heard, they are likely to go for the extra mile. The behavior shows its presence throughout the entire lifecycle although it is considered as a minor behavior, since it rises beyond the scope of the project at hand and takes time to pay off. As a result, the performance throughout the virtual lifecycle of the project and projects to come is enhanced.

Taking a closer look at leadership behaviors throughout the virtual team's lifecycle, it can be stated that different behaviors become dominant when the lifecycle progresses. To be more specific, the first phase is presided by task-oriented behavior. When moving to the subsequent phase, the position of task-oriented behavior is weakened and shifted towards a balance in favor of relation-oriented behaviors. Thereafter, the wrapping-up phase involves mostly developing and recognizing behaviors, which are relation-oriented behaviors. Lastly, the involving behavior shows its presence throughout the entire cycle. To summarize, keeping in mind that these behaviors are also regulated by the situation, contingent on the phase of the lifecycle the virtual team was in, some behaviors are likely to be more predominant than others.

## 5. Discussion

Summarizing, how can a leader's behavior contribute to virtual team effectiveness throughout the lifecycle? By answering the first research question, it can be concluded that leadership behavior influences team effectiveness through multiple aspects. On the one hand task-oriented leadership behavior mainly influences the output-type (e.g., meeting deadlines, costs, etc.) and on the other hand relation-oriented leadership behavior greatly affects the process-type (e.g., team cohesion, team interactions) and satisfaction. Although it should be emphasized these meta-categories also could have their effect through other aspects of team effectiveness, task-oriented behavior could influence an employee's satisfaction as well. Furthermore, the new involving-behavior showed to influence team performance in the long-term. However, it should be emphasized that planning-, clarifying-, and supporting-behavior are more prominent and the remaining behaviors seem to have a more indirect effect on team effectiveness. Moving to the second research question, it can be stated that depending on the stage of the virtual teams' lifecycle different behaviors have an impact on team performance. Where task-oriented behavior seems to be most prominent at the start of the lifecycle, relation-oriented behavior appears to be winning ground as the lifecycle progresses. Again, the involving-behavior has its presence throughout the entire lifecycle. So, to formulate an answer on the main research question it can be stated that introducing the right behaviors at the right time throughout the lifecycle can improve the performance and satisfaction of employees. Which in turn, contributes to the increase in the virtual team effectiveness.

### 5.1 Theoretical contributions

The results concerning the task-oriented behavior displayed in virtual teams confirm prior work in non-virtual teams. Indeed, research has underlined that task-oriented behaviors seem to mainly influence team effectiveness through the out-put type of performance in traditional teams (Burke et al., 2004; Ceri-Booms et al., 2007; Glickman et al., 1987). In line with this, the results of this thesis showed that planning and clarifying behaviors tend to be the most prominent behaviors in relation to virtual team effectiveness via the out-put type of performance. This could be due to the fact that leaders can provide better directions by expressing these behaviors to their subordinates to effectively fulfill the project, regardless of the virtual environment (Henkel et al., 2019). Thus, it could be suggested that these behaviors are crucial for virtual and non-virtual teams. The importance of these behaviors might be linked

to the fact that, team members, despite the fact that they may work virtually or not, need to have plain roles, clear objectives, and precise goals in order to be a team, and to become effective and not just a group of people (Morgan, Glickman, Woodard, Blaiwes, & Salas, 1986). As of such, these specific task-oriented behaviors of the leaders may therefore reinforce the essence of a virtual team. Additionally, Salas, Thayer, Bedwell, and Lazzara (2014) list that effective team coordination, and communication, activities which could be linked to planning and clarifying leader behaviors, is strengthened by organized and clear actions and thus show to have a positive impact on the outcome of the project. The results of this study propose that this is also the case for virtual teams.

Furthermore, on the one hand Yukl, Prussia and Hassan (2019) did not find a significant relationship of task-oriented behavior on job satisfaction in traditional teams, and on the other hand Borgmann, Rowold and Bormann (2016) did find a significant but negative effect of task-oriented leadership behaviors on subordinates' satisfaction in traditional teams. Contrarily to these studies, this research indicates that task-oriented leadership behavior also affects team effectiveness through job satisfaction and process-type of performance within virtual teams. This means that in virtual teams, both the out-put type of performance and the process-type of performance, together with job satisfaction, are influenced by task-oriented behaviors. In their literature study, Powell et al. (2004) found that task-oriented behaviors may affect team effectiveness through more than one type of performance and also through satisfaction in virtual teams. This is in line with the finding of this thesis according to which unclear goals and tasks, makes subordinates feel insecure and unsatisfied and as a consequence the satisfaction of a subordinate could be hurt. Another possible explanation is given by Carmeli, Gelbard, and Reiter-Palmon (2013) who added that setting up expectations and framing the outcome at hand could result in poor creative solutions during the process. So, it could be stated that the team effectiveness in virtual teams can be influenced by both planning behaviors (Burke et al., 2006; Holloway, 2010; Marta et al., 2005; Yukl, 2012) as well as clarifying behaviors (Burke et al., 2006; Piccoli et al., 2004; Powell et al., 2004) via the out-put type of performance, process-type of performance and job satisfaction. Hence, we suggest the following proposition:

***Proposition 1:*** *In a virtual team, when the leaders display task-oriented behaviors, such as planning and clarifying behaviors, they influence team effectiveness through the out-put type of performance, the process-type of performance and job satisfaction.*

Not only task-oriented behaviors seemed to have an important role in virtual teams, but also supporting behaviors, belonging to relationship-oriented behavior, appear to have a leading role in virtual teams as well. The findings of this thesis point to leaders strongly relying on this behavior as one of the most carried out behaviors in virtual teams. Namely, by being of assistance to the team when necessary and trying to improve the processes on a continuous basis through facilitating and coaching like styles, team members could do their job better and build stronger relationships among themselves and with the leader. Although research highlighted that virtual teams tended to have a more task-oriented scope (Chidambaram & Bostrom, 1993; Kayworth & Leidner, 2002), given the weaker interpersonal relationships related to online communication (Gulson et al. 2014; Hertel et al., 2005), this thesis shows that this focus is weakened over time in favor of a relation-oriented approach (Picolli et al., 2004). Moreover, this thesis extends to the virtual environment the statements by Borgmann et al. (2016) and Yukl et al. (2019), according to which in traditional teams relation-oriented behaviors not only are more related to team performance and job satisfaction than task-oriented behaviors. From the results of this thesis, this appears to be the case for virtual teams too, as it could be suggested that extensive task-oriented behaviors can be more harmful for the effectiveness of the team, due to the negative impact on satisfaction. Consequently, the following proposition is suggested:

***Proposition 2:*** *In a virtual team, when the leaders show relation-oriented behaviors, especially supporting behaviors, this meta-category tends to be more important than task-oriented leadership behaviors to improve team effectiveness.*

Moreover, this could be reflected back to the virtual teams' lifecycle. To begin with the contribution of this study to the literature on leaders' behavior and team lifecycle by pinpointing different leadership behaviors and their influence throughout the lifecycle on team effectiveness and integrating them within extension of knowledge concerning a team's lifecycle in a virtual setting. By addressing this objective, this thesis extends the limited knowledge on virtual teams' lifespan in organizations (Maduka et al., 2018) and the behaviors that could increase the effectiveness of different processes in virtual teams (Hoch & Kozlowski, 2014; Liao, 2017). To explore the leadership behaviors in the phases of a virtual teams' lifecycle, the Lifecycle of Virtual Team Management (Zander et al., 2013, p. 233) was used.

This model consists of three phases, namely the ‘welcoming phase’, the ‘working phase’, and the ‘wrapping-up phase’.

Taking a closer look at the first phase, the ‘welcoming phase’ of the lifecycle, several prominent behaviors were found, such as clarifying the goal and getting acquainted with it, establishing a planning and getting to know the team. To elaborate, Furst-Holloway et al. (2004), and Warkentin and Beranek (1999) found that traditional teams who had larger goal clarity and took sufficient time to get familiar with the process, were more effective throughout the lifecycle. Next to this, research found that at the beginning of a virtual teams’ lifecycle, getting to know the team members, facilitates cooperation and trust, which in turn delivers to a better performing team (Alge, Wiethoff & Klein, 2003; Furst-Holloway et al., 2004; Hertel et al., 2005). Based on the findings of this thesis, this also seems to be the case for virtual teams.

Looking at the aforementioned, these behaviors show similarities with the leaders’ tasks presented by Zander et al. (2013) in the lifecycle of virtual team management which influence the success of the team, and are related to the supporting, planning and clarifying behaviors. This is in line with Henkel et al. 's (2019) results in traditional teams according to which planning and clarifying behaviors are most appropriate during this phase to provide more direction, as leaders are likely to know the ground that needs to be covered to successfully accomplish the project in traditional teams. Also, this is in line with the statements by Alge, Wiethoff and Klein, (2003), Furst-Holloway et al., (2004), Hertel et al., who introduced the importance of getting to know the team. Moreover, this study indicates that these statements are also applicable to virtual teams. In contradiction to the previous paragraph, it could be suggested that despite the fact that relation-oriented behavior is of greater importance in a virtual team than task-oriented behavior, during the first phase the task-oriented behaviors are playing a prominent role as well. Therefore, the following proposition is suggested:

***Proposition 3:*** *During the ‘Welcoming phase’, leaders of virtual teams should emphasize displaying, planning, clarifying and supporting behaviors, as this could improve the team effectiveness and lead to the reduction of emerging problems in subsequent phases.*

Furthermore, due to the limited research on latter stages of a virtual teams lifecycle, since research has mainly focused the start of virtual teams (Duarte & Snyder, 2006; Gordon, 2017; Hertel et al., 2005; Zander et al., 2013), this thesis contributes to further exploration of the subsequent phases by providing new insights. To elaborate, when the working phase of the virtual team lifecycle starts, a change of prominent behaviors occurs. The results of this thesis

suggest that areas of focus during this phase are; performance management and the development of the team/individual. This seems to extend the findings by Henkel et al. (2019), and Mulcahy (2018) according to which after the beginning of the project in the subsequent phase, leaders tend to be more relationship-oriented to the virtual environment. To elaborate, leaders are becoming more coaching and facilitating to utilize the subordinates' strengths to improve team effectiveness. Indeed, supporting behavior remains of great importance during this phase, to ensure the followers can do their work accordingly or even improve their way of working. Furthermore, not only developing behavior makes its entrance, but also empowering behavior. Whereas in the first phase leaders had mostly authoritarian behaviors, these became less during this phase, as the followers were given room to make their own decisions. This finding is aligned with the findings of Kirkman, Rosen, Tesluk, and Gibson (2004) who found that empowerment significantly relates to performance and satisfaction. Overall, during this phase the relation-oriented behavior shows to be dominant. Hence, we suggest the following proposition:

***Proposition 4:*** *During the “Working phase” of the lifecycle of virtual teams, leaders should emphasize relation-oriented behavior, as this tends to have a larger impact on team effectiveness in comparison to task-oriented behaviors.*

When looking at the monitoring, problem-solving, recognizing, developing and empowering behaviors the findings of this thesis illustrate, in line with findings by Zimmerman, Wit and Gill (2008) who emphasize these behaviors are most important within a virtual team, that they have a minor role in comparison to the planning, clarifying and supporting behavior. Whereas, based on the findings of this thesis, there seems to be an absence of these minor behaviors in the first phase, they slowly start to gain some ground as the lifecycle progresses. To elaborate the planning and clarifying behaviors lose their dominance to monitoring behavior in the second phase. For example, the findings of this thesis illustrate that leaders started monitoring the process to see if things were going accordingly. In doing so, a leader might find aspects that do not go as expected and act upon this. Only if a problem emerges and the situation asks for this, problem-solving behavior makes their entrance. Therefore, this thesis appears to contribute to further improvement of the model by Zander et al. (2013) as these monitoring and problem-solving are not touched upon by the researchers in the model, by addressing additional activities which could enhance the team effectiveness during this phase. Subsequently, the following propositions could be suggested:

**Proposition 5:** *During the “Working phase” of the virtual team lifecycle, leaders should introduce monitoring, and problem-solving behaviors, the latter only when necessary, to maintain an effective virtual team.*

This shift in behaviors can also be found during the last phase, the wrapping-up phase. The findings of this thesis show that the leader’s presence was intensified. More precisely, leaders were monitoring if the deadline was going to be met and if the end product had adequate quality. Based on this, feedback and recognition were given to subordinates. Afterwards, the results of this study showed the importance of team reflective practice, which is consistent with the statement by Zander et al. (2013) that reflection is done to stimulate overall learning at the end of the lifecycle. Hence, the activities during this phase show that monitoring, recognizing and developing behaviors are dominant during this stage of the lifecycle. To elaborate, Salas et al. (2004) found that by showing recognition and providing rewards the performance of the subordinate is likely to increase. Even though this statement is related to non-virtual teams, the findings of this thesis point to similar results for virtual teams, which is inline with Gilson et al. (2014). Although giving compliments during this stage is not likely to increase the output of the current project, it stimulates the overall learning of the individual, which in turn delivers to a better performing follower, for a subsequent project (Behrendt et al., 2018; Zander et al., 2013). So, the following proposition could be suggested:

**Proposition 6:** *During the “Wrapping-up phase” leaders should intensify their presence, monitor the final process and provide feedback and recognition to enhance the effectiveness of the team in forthcoming projects.*

Not only does this thesis extend earlier research from traditional teams into the virtual setting, but it also extends the Hierarchical Taxonomy of Leadership Behaviors by Yukl (2012) into the unexplored field of virtual teams. As a result, this study contributed to closing the gap between under researched fields of effective leadership in virtual teams by exploring Yukl’s (2012) Hierarchical Taxonomy of Leadership Behaviors within the virtual team setting. Despite the fact that the taxonomy introduced several behaviors, the findings of this thesis presented several behaviors and actions that could not be matched to the existing ones. In line with Behrendt et al.’s (2017) statement that the taxonomy of Yukl (2012) is not all-encompassing, thanks to the abductive analysis of this thesis, the novel *involving behavior* was

introduced. So, by finding this new behavior, this thesis extends the virtual team literature by enriching the classification with a behavior that shows connections with a recent extension of the full-range leadership theory, namely instrumental leadership. This leadership style goes beyond the scope of the better known transactional, transformational and laissez-faire leadership theories and showing incremental variance in the outcome of leadership in regards to the aforementioned, by taking into account the monitoring of the environment and performance, and the enactment of strategic and tactical solutions (Antonakis & House, 2014). To elaborate, instrumental leadership can be described by four dimensions, whereas one dimension: strategy formulation and implementation, and follower work facilitation shows strong similarities with involving behavior. Antonakis and House (2014) emphasize that this dimension is highly related to performance and satisfaction. Moreover, by introducing the involving behavior, this thesis sides with Antonakis and House (2014) according to whom leadership has its roots not only on interpersonal and transactional levels but also on a more strategic and work-facilitation domain to show the strength of this novel behavior. To continue, the outcome of such behavior also has its influence on the performance of the team. Hence, we suggest the following proposition:

***Proposition 7:*** *In a virtual team context leaders could put more effort in involving employees in strategic development as this can improve the performance of the team.*

Since this novel involving behavior shows to have a long-term impact on team effectiveness, two other concepts could be linked to this behavior to explain its influence. Firstly, involving behavior might be related to what the literature defines as organizational identification (Ashforth & Mael, 1989). Organizational identification can be described as when an individual's organizational membership becomes a significant component of his or her self-definition (Ashforth & Mael 1989; Pratt 1998). Since other team members and leaders can help individuals to foster such sense of belonging to an organization (Steffens & Haslam, 2017), virtual team members' involvement might also further bind employees to the organization. Indeed, since the individual may feel responsible and a part of the growth and success of the organization. However, due to working virtually, the establishment of organizational identification is endangered due to diminishing contact of employees with the organization itself (e.g., no interactions within a physical building, social impact of co-presence, etc.) (Bartel, Wrześniewski, & Wiesenfeld, 2011). More specifically, this organizational identification is playing a critical role in virtual teams and is a key motivational resource, because subordinates'



interests are more likely to be lined up with those of the organization. (Bartel et al., 2011; Sivunen, 2006). As a consequence, Dukerich, Golden and Shortell (2002) mention that this could result in actions that prompt the organization's collective welfare, such as increased cooperation and in turn improved performance. Therefore, the following proposition is suggested:

***Proposition 8:*** *In a virtual team, when leaders express involving behavior, they are more likely to help subordinates to identify themselves with the organization and this can increase the long-term effectiveness of the team.*

Secondly, involving behavior may spur followers to have a better understanding of why they are putting the effort they do and make them less likely to disengage from the team. This novel behavior rises above the scope of similar behaviors like supporting behaviors, and based on the findings of this thesis, it appears to impact team effectiveness through both process-type, output-type of performance and satisfaction in the current project and projects to come. A possible explanation of the importance of involving behaviors could be that due to virtual communication, followers are more likely to disengage from the team because of a decreased social impact (Blaskovich, 2008; Dulebohn & Hoch, 2017b). As a consequence, isolation might be set in motion because a team member could have the perception that his or her effort is invisible to the rest of the team, reducing their intrinsic involvement and motivation (Furst, Blackburn, & Rosen, 1999). Indeed, Carte and Chidambaram (2008), found that the contribution and participation in the virtual team decreases due to such isolation. Thus, it could be stated that involving behavior is not only beneficial for team members' intrinsic motivation and contributions, but it also emphasizes the long-term orientation of the team and its long-term effectiveness under all aspects. Hence, the following proposition could be suggested:

***Proposition 9:*** *In a virtual team, when leaders display involving behaviors, they are more likely to prevent the subordinates from being isolated which could be harmful in virtual settings to the effectiveness of the team.*

Moreover, linking the novel behavior to the virtual team lifecycle, this thesis also contributed to the further exploration of this model, as it was introduced by the founders of this model that it did not reach its full potential yet (Zander et al., 2013). Indeed, the model could be improved by introducing activities in all the phases which are related to the novel *involving behavior* to

stimulate the effectiveness of the team throughout the virtual team's lifecycle. Hence, the following proposition could be suggested:

***Proposition 10:*** *Throughout all the phases of the Lifecycle of Virtual Team Management the effectiveness of the virtual team could benefit from a leader presenting involving behaviors.*

Yet, research has noted that several leadership behaviors have a larger impact in a virtual setting in comparison to face-to-face settings (Zimmerman, Wit, & Gill, 2008). Moreover, due to the absence of co-presence, no direct observations, informal interactions and nonverbal communication can be carried out, which asks for additional effort during the management of a virtual team (Alsharo et al., (2017; Flood 2019; Hoch 2017b). This additional effort is likely to be expressed by a leader showing the introduced leadership behaviors more often. As a consequence, when the job becomes more demanding, it could result in a higher chance of exhaustion for the leader and be harmful to the process (Sardeshmukh, Sharma & Golden, 2012). A possible theory that could be linked to this is called ego depletion, which emphasizes the exhaustion of an individual (Muraven, Buczny & Law, 2019). For example, research found that high-maintenance interactions, such as those in virtual teams, are more likely to trigger ego depletion and results in e.g., poorer performance of tasks (Muraven et al., 2019). Therefore, it could be suggested that even these minor behaviors have a larger impact and cost extra effort in virtual settings in comparison to traditional teams to improve team effectiveness. Nonetheless, earlier research found that different behaviors should be applied depending on the situation by a leader to be effective in traditional teams (Vroom & Jargo, 2007; Zaccaro et al., 2009). Altogether, this study contributes to the underexplored field of how leadership behaviors could enhance team effectiveness within virtual teams (Hoch & Kozlowski, 2014; Liao, 2017) and extend earlier research to the virtual setting which found that different behaviors should be applied depending on the situation by a leader to be effective in traditional teams (Vroom & Jargo, 2007; Zaccaro et al., 2009). Thus, the final proposition could be suggested:

***Proposition 11:*** *In a virtual team, leaders are likely to carry out many other task- and relationship-oriented behaviors more often and with additional energy cost due to the absence of co-presence, and therefore such display tends to have a larger impact on team effectiveness compared to traditional teams.*

## 5.2 Practical implications

Since the on-going shift from traditional teams to virtual teams has increased significantly due to the COVID-19 pandemic, managers and employees have faced, increasingly, several challenges (Newman & Ford, 2020). Moreover, Newman and Ford (2020) highlighted that leaders have started to reflect on leadership to achieve the highest outcome possible for the team. Therefore, on a practical level this thesis contributes to leaders' personal growth and development in relation to how to boost team effectiveness, by presenting how leaders' behaviors can influence their virtual team dynamics and effectiveness. More specifically, this thesis points to several ways whereby a leader can improve the virtual team effectiveness, which will be presented next.

Firstly, a leader should take into account that their behavior has an impact on team effectiveness via multiple aspects (e.g., process-type and out-put type of performance, and satisfaction) in virtual teams. Hence, given the importance of planning, clarifying and supporting behaviors at the beginning of a virtual team's lifecycle, leaders should introduce a strong kick-off, with time to get familiar with the project, planning and team (Warkentin & Beranek, 1999; Furst-Holloway, 2004). This could be done for example over a period of two days, one day to get to know all the ins and outs of the project and the other day to get to know the fellow team members. This is likely to increase the team effectiveness, stimulate the establishment of trust, and reduce the number of emerging problems in subsequent phases of the virtual team lifecycle.

Secondly, practitioners should be aware of the fact that as the lifecycle progresses a shift of behaviors should occur as well. Whereas during the start task-oriented behavior shows to be most effective, it becomes clear based on the findings of this thesis that relation-oriented leadership behavior takes over during the subsequent phases and other expressions of these meta-categories are asked for. Therefore, a leader should be able to express monitoring, supporting, recognizing, empowering, and developing behaviors. Having recognized these behaviors, a leader could guide the team to an effective outcome. However, when a leader is aware about his or her weaknesses concerning these behaviors, the leader could engage in training to improve the effectiveness of the execution of their behavior and accordingly the effectiveness of the virtual team.

Thirdly, as mentioned by several studies, a leader should be aware of the fact that leading a virtual team requires a different approach in comparison to non-virtual teams. Also, this thesis suggested that even the minor behaviors are more effective and should therefore be

carried out more often. For example, due to the absence of co-presence, no direct observations, informal interactions and nonverbal communication can be carried out, resulting in the cost of additional effort by the practitioner when leading a virtual team (Alsharo et al., (2017; Flood 2019; Hoch 2017b). Consequently, the job could become more demanding, therefore, leaders should be aware of the fact that this could be harmful for their own well-being and lead to exhaustion. Subsequently, ego depletion could occur, which in turn could be harmful to the effectiveness of the virtual team. So, leaders could reach out for counseling to prevent the aforementioned from occurring.

Lastly, practitioners should recognize that leadership has deeper roots than only interpersonal and transactional aspects, and that it should also be accounted for on the strategic and work-facilitation domain (Antonakis & House, 2014). Therefore, leaders should introduce the novel involving behavior throughout the entire lifecycle, by involving followers into e.g., strategic development, the improvement of team processes and organizational development. To stress, organizational identification and reduce isolation amongst subordinates.

### 5.3 Limitations and future research

Although this study provides several new insights and contributions to the limited topic of leadership behavior in virtual teams, it also has its limitations. To begin with, the selection of the sample. Initially, this study was supposed to investigate pairs of leaders and subordinates from different organizations to capture the potential differences in perception. However, due to the limited availability of participants who met the desired qualifications, this study was not able to acquire only pairs of leaders and followers working in a virtual team, but had to give consideration also to non-paired leaders and followers. Therefore, to capture multiple perspectives, future research could focus specifically on leader-follower pairs to explore how followers perceive their leaders' behavior in a virtual team, and thus highlight if differences between leaders' and followers' perception of leadership behaviors exists.

Moreover, all the participants had a Dutch nationality. As a consequence, different behavioral outcomes could have emerged if other nationalities were taken into account as well, based on cultural differences. Snaebjornsson and Edvardsson (2013) highlighted that nationality has an impact, among other elements, on leadership style and behavior. Therefore, future studies could build on this study by extending the current findings and investigate the influence of nationality on leadership behavior throughout a virtual team's lifecycle.

Another interesting aspect that could be investigated in future studies is the different influence of gender. In this study the sample was roughly equally distributed in terms of gender composition (M = 8, F = 7) and, since it was beyond the scope of this thesis, no differences were investigated. Yet, Snaebjornsson and Edvardsson (2013) noted that gender may have an impact on leadership. Therefore, future studies could explore the different impact of a leader's behavior accounting on gender within a virtual team's lifecycle. Future research could also expand on other differences in leader's demographics, the industry, the size of the team etc.

Furthermore, this study captured data at one moment in time, being a qualitative cross-sectional study capturing individuals' perception of leadership behavior by looking back at their past experience. As a consequence, certain memories or perceptions might be forgotten or unclear as these are no longer fresh in mind. Therefore, subsequent studies could investigate the topic of this thesis through a longitudinal approach. By observing virtual teams' lifecycle while unraveling, a researcher could capture the evolution of leaders' behaviors as they occur, likely providing a more detailed description of events and memories that occurred.

Besides, this study investigated task-oriented and relationship-oriented leaders' behaviors within virtual teams, as team effectiveness was found to be mostly influenced by relationship-oriented and task-oriented leadership behavior (Behrendt, Matz, & Göritz, 2017; Bordia, 1997; Lin et al., 2008; Powell et al., 2004). Future studies could introduce and explore the other meta-categories as presented by Yukl (2012) to cover all leaders' behaviors and offer a more complete picture of this topic. Next to this, forthcoming studies could explore the new involving-behavior, as this new finding offers extensive room for exploration. Researchers might investigate this behavior in a virtual team or study it in a more traditional setting.

Lastly, the qualitative nature of this study has presented several insights and contributions to the virtual team literature. We strongly recommend future work to investigate the effect of the different leadership behaviors on the aspects of team effectiveness within the virtual environment through a qualitative study. Hopefully, this study contributed to an increased interest to researchers and practitioners, to help us thrive in the pandemic and the years to come. As an earlier quote by Bell and Kozlowski (2002) shows to be more relevant than ever: "Virtual teams are here, and they are here to stay" (p. 45).

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# Appendices

## Appendix I: Demographics questionnaire

Thank you for participating in the interview concerning leadership behavior and the performance of your team. First of all, I would like to inform you on the topic of team performance which is described as:

*“a multidimensional phenomenon, which emerges when team members draw from individual and shared resources to engage in individual as well as interdependent tasks within the teamwork and taskwork processes to meet output goals (e.g. quality, functionality, and reliability of products/services)”*

Second of all, I would like to ask you to provide me with the answers to the following questions:

- What is your age?
- What is your gender?
- What is your nationality?
- In which industry do you work?
- What is your educational level?
- What is your role in the company?
- When did you start to work within your team?
- How long have you been working at the company?
- How big is your team?

Third of all, to be better able to provide an answer to some questions, I would like to ask you to think about some situations which made some impact on which your manager/leader or yourself played a major role within the virtual team.

Once again, thank you for your effort and I am looking forward to the interview.

## Appendix II: Interview protocol

First of all, thank you for your time to have this interview. I am a student at the University of Twente and for my Master thesis I am researching the topic of leadership behavior on team effectiveness throughout a virtual team's lifecycle. As a consequence, this interview is taking place, and I would like to know your perception of the prior mentioned. Before we start, I would like to ask you to read and sign the informed consent.

Next to this, do you mind if I record this interview? The recording will be used to transcribe and analyze the interview. Hereby, great value is given to anonymity and the transcript will be saved carefully. Do I have your permission for this?

During the interview, I will take some notes to be able to adapt to your answers as well as possible. Moreover, this interview will take about 30 minutes of your time with no longer than an hour. The goal of this research is to find how leadership behavior's affect perceived team effectiveness throughout a virtual teams lifecycle. Therefore, the following question will be central:

**Central question:** "How can a leader's behavior affect team effectiveness within virtual teams throughout the lifecycle?"

First of all, I would like to ask you to tell you something about yourself and your relation to this topic and your team setting.

Theme	General question	Components
Leadership behavior	Can you describe how your superior behaves in general?	<ul style="list-style-type: none"> <li>- In a meeting</li> <li>- During feedback</li> <li>- Personal contact</li> <li>- Within the team</li> </ul>
	Can you describe how your leader makes sure everything is organized in order to achieve the team's goal?	<ul style="list-style-type: none"> <li>- Planning</li> <li>- Clarifying</li> <li>- Monitoring</li> <li>- Problem solving</li> </ul>

	Can you describe how your leader makes sure there is a good work culture?	<ul style="list-style-type: none"> <li>- Supporting</li> <li>- Developing</li> <li>- Recognizing</li> <li>- Empowering</li> </ul>
	How do you experience the leader's behavior within the virtual team setting?	
Team effectiveness	To what extent do you think your team is performing well?	<ul style="list-style-type: none"> <li>- Improvements</li> <li>- Role of leader</li> <li>- How important is this?</li> </ul>
	To what extent do you think the team contributes to your personal growth?	<ul style="list-style-type: none"> <li>- Improvements</li> <li>- Role of leader</li> <li>- How important is this?</li> </ul>
	To what extent do you think the team contributes to your personal well-being?	<ul style="list-style-type: none"> <li>- Improvements</li> <li>- Role of leader</li> <li>- How important is this?</li> </ul>
	Can you recall an episode (or two) in which you thought/felt your leader was particularly effective?	<ul style="list-style-type: none"> <li>- Task-oriented behaviors</li> <li>- Relation-oriented behaviors</li> </ul>
	What leadership behavior do you find more appropriate in a virtual team to boost team effectiveness?	<ul style="list-style-type: none"> <li>- Task-oriented behaviors</li> <li>- Relation-oriented behaviors</li> </ul>
<b>Lifecycle</b>	Can you recall what leadership behaviors were shown at the beginning 'launch'?	<ul style="list-style-type: none"> <li>- Getting acquainted</li> <li>- Goal clarification</li> <li>- Development of rules</li> </ul>
	Do you recall which leadership behaviors were shown in order to enhance the team process?	<ul style="list-style-type: none"> <li>- Performance management</li> <li>- Team development</li> </ul>
	Can you recall which behaviors were shown at the end of a project/team effort?	<ul style="list-style-type: none"> <li>- recognizing</li> <li>-</li> </ul>
	Do you perceive a change in the role	<ul style="list-style-type: none"> <li>- Task-oriented</li> </ul>

	of a leader as the teamwork is progressing?	- Relation-oriented
<b>Critical Incident</b>	What has happened?	
	Why was this behavior effective?	
	How did this turn out?	



## Appendix III: Informed consent

- Removed due to privacy-sensitive data

## Appendix IV. Quotes and 2nd Order themes

<b>Paragraph 4.1 Influence of leadership behaviors</b>	
<b>Quote:</b>	<b>Theme:</b>
<p><i>“For me, clarity is the most important. There are days that I just do not know what to do exactly, because you (in this case the manager) did not make it clear during your communication with us. Then I'd ask for an explanation, and she states that I could do what she said. So, I still do not know what to do precisely, this makes me feel lost.”</i> (Patricia, subordinate)</p>	Clarifying behavior
<p><i>“I do not feel troubled to ask questions when something is not clear. He is always open for questions, so I get in touch with him when necessary and we will start a meeting or something similar.”</i> (Charles, subordinate)</p>	Clarifying behavior
<p><i>“That is mainly because of the way she behaves. Her way of behaving makes her feel like a colleague next to being our manager. Since, I know that I can always reach out to her if I need help. For example, when I really have a question and do not know where to begin, I do not feel burdened to ask her via phone or e-mail. I also know in advance that she isn't annoyed, and she is ready to help.”</i> (Edward, subordinate)</p>	Supporting behavior
<p><i>“... Especially how it goes with you as a person, if we do not look at work either. So, by taking a moment to stop talking about work and ask other questions. For example, “What did you do last weekend?”, “Do you have any plans for this summer?”, and “Are you feeling comfortable?”. Since, I do believe that, where you normally have a quick chat with everyone for 5 minutes or at a coffee machine that is now possible through Teams. So, she also tries to emphatically dwell on that in such conversations (referring to individual</i></p>	Supporting behavior

<i>meetings).” (Edward, subordinate)</i>	
<i>“By putting some effort in taking a moment to talk about certain aspects: e.g., the team, progress, and future visions. I try to make sure people do not go beyond their borders or feel left out, to prevent them from wandering off the team.” (Susan, leader)</i>	Involving behavior
<i>“What I experience is that we get a lot of freedom to operate independently. What I like about this is that we have the possibility to do our thing and develop ourselves. I think that’s great.” (Charles, subordinate)</i>	Empowering behavior
<i>“We have had several problems with an individual, I had multiple conversations with him to discuss this and how it could be resolved. However, the person was hard to help, because he was not open for it. As a consequence, we were not able to resolve the problem and this resulted in a separation of our ways.” (Susan, leader)</i>	Problem-solving behavior
<b>Paragraph 4.2 Leadership behaviors throughout the lifecycle</b>	
<b>Quote:</b>	<b>Theme:</b>
<i>“We received the end goal and several targets as well from our manager. Does he tell me what to do? No. He really puts me in my strength and expects me to be ambitious enough to get there my own way. Of course this is difficult sometimes, but I like it alot that I can do it in my own way.” (Denise, subordinate)</i>	Welcoming phase
<i>“By receiving the freedom to make decisions about what I do think is best for the project, I feel like I can make the project my own. Besides, I get the freedom to work on the project whenever I have planned it myself. Therefore, I have the feeling that the work is going accordingly and I am progressing more rapidly.” (Charles, subordinate)</i>	Working phase
<i>“When the project is finished, I will bring the team together in a meeting. First, to celebrate and by showing my appreciation. Most often this is done in an informal setting</i>	Wrapping-up phase

*by giving compliments. Another meeting will be held to reflect upon the process, in doing so we will grow as a person and as a team finding out the flaws and the things that did go well.” (Mary, leader)*