

Task and person-focused leadership behaviors and team performance: A meta-analysis

Meltem Ceri-Booms^a, Petru Lucian Curşeu^{b,c,*}, Leon A.G. Oerlemans^{a,d,e}

^a Department of Organization Studies, Tilburg University, P.O. Box 90153, 5000 LE Tilburg, The Netherlands

^b Department of Psychology, “Babeş-Bolyai” University, Republicii 37, Cluj-Napoca, 400015, Cluj, Romania

^c Open University of the Netherlands, Heerlen, The Netherlands

^d Center for Innovation Research, Tilburg University, P.O. Box 90153, 5000 LE Tilburg, The Netherlands

^e Graduate School of Technology Management, University of Pretoria, South Africa

* Corresponding author

E-mail addresses: cerimel@hotmail.com (M. Ceri-Booms), petrucurseu@psychology.ro (P.L. Curşeu),

L.A.G.Oerlemans@tilburguniversity.edu (L.A.G. Oerlemans).

Abstract

This paper reports the results of a meta-analytic review of the relationship between person and task-focused leader behaviors, on the one hand, and team performance, on the other hand. The results, based on 89 independent samples, show a moderate positive ($\rho=.33$) association between both types of leadership behaviors and subjective team performance. For objective team performance as dependent variable, the effect sizes are smaller, yet positive ($\rho=.18$ for task-focused leadership behaviors and $\rho=.19$ for person-focused leadership behaviors). Furthermore, with respect to the methodological moderators, the analyses show that the relationships were stronger when leadership behaviors were rated by the leaders themselves, rather than by others, and the association was stronger when the correlations were estimated at the individual level, as opposed to the team level of analysis. Concerning conceptual moderators, team type was identified as a significant moderator, and correlations between a person-focused leadership behavior and team performance were stronger for service and

project teams than for action/performing teams. Task interdependence was another moderator tested in our meta-analysis, yet our results show no clear moderating effect of task interdependence in the relationship between leadership behavior and team performance.

Keywords: task-focused leadership, person-focused leadership, meta-analysis, team performance

1. Introduction

Leadership is one of the most prolific research areas within the field of organizational behavior, as leadership has important implications for individual, team and organizational performance. The interest in exploring the team level influences of leadership behaviors increased steadily in the last two decades (DeChurch, Hiller, Murase, Doty & Salas, 2010) and empirical research on the effect of leadership behaviors on team outcomes was integrated in narrative reviews (Kozlowski, Chao & Mak, 2016; Morgeson, DeRue, & Karam, 2010) as well as in meta-analytic investigations (Burke, Stagl, Klein, Goodwin, Salas & Halpin, 2006). The main claim of the leadership behavior theories is that leaders' patterns of behaviors or behavioral tendencies influence the followers' actions and team functioning. In a functional perspective, team leaders have to manage personnel resources and the progression towards the task accomplishment in order to foster team performance (Morgeson et al., 2010). In their meta-analysis, Burke and colleagues (2006) show that both person and task-focused leader behaviors are positively related to team performance. The aim of our meta-analysis is to further advance the understanding of the influence of person and task-focused leadership behaviors on team performance.

By conducting this meta-analysis we intend to extend the insights reported in Burke et al. (2006) in three ways. First, as the empirical literature exploring the team level outcomes of leadership increased after 2005 (DeChurch et al., 2010), we aim to review a substantially

larger body of empirical evidence that explores the association between leadership behaviors and team performance. Second, as the project based organization increased in importance (Bakker, 2010) so did the reliance on project teams. While in general, various types of teams are building blocks in most modern organizations (Hollenbeck, Beersma & Schouten, 2012) with nearly two thirds of the Fortune 500 organizations using some form of teamwork in their midst (Sivasubramaniam et al., 2002) we intend to take into account team typology in our meta-analysis. We argue that different types of teams perform different tasks and that the function of person and task-focused leadership is likely to vary across different types of teams. Therefore, we set out to test the moderating effect of team types and task interdependence (as conceptual moderators) as well as level of analysis and method used to evaluate leadership behaviors (as methodological moderators) in the relationship between leadership behaviors and team performance. Finally, as the meta-analytic framework we use the method presented in Hunter and Schmidt (2015) that allows an estimation of true correlations by correcting for the unreliability of the predictor and criterion variables, for the sampling error and for the dichotomization of criterion variable. We continue by summarizing the conceptual framework for our meta-analysis, namely the integrated model of leadership functions and team performance (Burke et al., 2006). For comparative reasons we organize our conceptual discussion along the same categorization of leadership behaviors used in the original meta-analysis. We then describe the meta-analytic procedures, the results and we conclude with the discussion of our findings.

1.1. Leadership behaviors and team performance

Research on leadership behaviors explores a wealth of behaviors through which leaders influence team dynamics and performance. Using a functional perspective on leadership, Burke et al. (2006) argue that specific leadership behaviors can be clustered in two main categories, depending on their target. They can focus on task accomplishment and/or on

the team members and their interaction. This categorization into task directed and person directed leadership behaviors is also consistent with previous theoretical analyses of leadership behaviors (Fleishman et al., 1991) and the meta-analytical results reported in Burke et al. show that both behaviors are conducive to team performance. A first aim of our paper is to extend the number of papers analyzed and to replicate the findings reported in Burke et al. (2006) using a different meta-analytic approach, namely the procedure described by Hunter and Schmidt (2015).

Reducing relevant leadership behaviors to just two categories, however, could lead to a loss of information. Stewart (2006) claims that one of the purposes of meta-analysis is to determine the extent to which different measures can be grouped together to form a broader construct which has consistent relationships with other variables. However, Hunter and Schmidt (2015) suggest that if the variance across primary studies stays even after the corrections for artifacts, it might be a sign of improper grouping. Based on these views, we first analyzed the two broad categories of leadership behaviors and then examined the criterion and predictor relations for more specific leadership behaviors when the variance after correction for artifacts remained. In the next sections, we present the specific leadership behaviors, considered in the meta-analysis and subsumed to the two main categories.

1.2. Person-focused behaviors

In line with previous research on leadership behaviors (e.g. Tyssen et al., 2014; Savelsbergh et al., 2015; Burke et al., 2006) we included the following six types of leader behaviors to the person-focused behavior: transformational leadership, empowering leadership, consideration, emotionally intelligent leadership, coaching focused leadership and charismatic leadership. The last three leadership behaviors are new additions to the person-focused behaviors analyzed in Burke et al (2006). All these specific leadership behaviors

focus on the satisfaction of the social and esteem needs of the individual team members as well as on creating a positive relational climate within the team.

Transformational leaders, transform followers' values, needs and beliefs (Kuhnert et al., 1987) and inspire them to go beyond their own self-interests for the good of the larger organizational unit (Avolio & Bass, 2004) by engaging in behaviors that trigger admiration and respect in their followers (Bass, 1985). Transformational leaders motivate followers to achieve out-of-range goals (Antonakis et al., 2003) by heightening their awareness with the vision they create (Avolio & Bass, 2004; Den Hartog et al., 1997) and they stimulate the intellectual capacity of followers by motivating them to engage in creative thinking and problem solving (Dionne et al., 2004).

Charismatic leaders, with their personal abilities and personal power, are capable of having profound and extraordinary effects on their followers (Conger & Kanungo, 1987) by using articulation and impression management skills to formulate their visions. They are sensitive to environmental constraints and to follower needs.

Empowering leadership is defined as “sharing power with subordinates and raising their level of autonomy and responsibility” (Lorinkova et al. 2013, p. 573). Accordingly, empowering leaders promote participative management practices by allowing their followers to be involved in the decision-making processes. They encourage them to take on personally challenging demanding tasks, to solve problems and produce innovative ideas and solutions (Dulewicz & Higgs, 2005).

Coaching focused leadership focuses on developing the follower's capabilities and skills. Coaching focused leaders are supportive and provide non-defensive responses to questions and challenges (Savelsbergh et al., 2015). They invest time and effort in coaching the followers, identify new tasks and roles to develop their competencies, and believe that critical feedback and challenge are important (Dulewicz & Higgs, 2005).

The emotionally intelligent (EI) leader is a person who has an ability to perceive, appraise, express and regulate emotion, both in him/herself and in others (Mayer & Salovey, 1997). Leaders scoring high on EI can sense employees' emotional reactions and are willing to integrate emotional consideration in their leading behavior (Hur et al., 2011).

Consideration refers to the degree to which the leader exhibits a human-relations orientation toward his/her subordinates (Nealey & Blood, 1968, p.415). It involves the degree of two-way communication and consultation, mutual trust, respect, and warmth a leader exhibits toward his followers (Oh, Kim & Lee, 1991).

1.3. Task-focused behaviors

In line with previous research (e.g. Burke et al., 2006; Stoker, 2008; Klein et al., 2011), we have classified the following behaviors as the task-focused leadership behaviors initiating behavior, transactional leadership and boundary spanning behavior. Task-focused leadership behaviors aim at increasing the task commitment and task involvement of the individual team members and on defining the task structure (role definition and allocation) and providing the resources necessary for task accomplishment.

Initiating behavior describe the extent to which the leader performs the management functions of planning, organizing, controlling and pressing subordinates for production (Nealey & Blood, 1968, p.415). These functions ultimately serve the purpose of task structuring (Pratt, 1981) and emphasize overt attempts to achieve specific organizational goals (Oh, Kim & Lee, 1991). Leaders adopting such behaviors ensure that members have a clear sense of direction and purpose (Burke et al., 2006) and take control and determine in detail what needs to be done and how it should be done (Savelsbergh et al., 2015).

Transactional behaviors are “those who focus on the motivation of followers through rewards or discipline, clarifying for their followers the kinds of rewards that should be expected for various behaviors” (Goodwin et al., 2001 p.759). This definition refers to the

contingent rewarding dimension of transactional leadership. Accordingly, transactional leadership is a process of exchange (Den Hartog et al., 1997) based on the contractual obligations (Antonakis et al., 2003) between the leader and the follower. Transactional leaders also actively seek for deviations from the standard procedures which is referred to as active management by exception in the literature (Den Hartog et al., 1997).

Boundary spanning behaviors are the external activities (Benoliel & Samuel, 2015) involving the management of external relationships, such as coordinating tasks, negotiating resources and goals with stakeholders, scanning for information and ideas, initiating politically focused communication to increase the resources available to the team (Hirst & Mann, 2004).

Given these (more specific types of) leadership behaviors, our second aim is to explore the extent to which these specific types of leadership behaviors have a differentiated effect on team performance.

1.4. Conceptual moderators

The degree of task interdependence is a task design feature that describes the extent to which the collective task assigned to a team requires the individual members to interact and depend on their peers (Burke et al., 2006; Saavedra, Earley & Dyne, 1993). In other words, the collective performance of teams with a high level of task interdependence results from a multi-directional work flow, in which the tasks of the individual members are combined and re-combined continuously through interpersonal interactions. The collective performance of teams with pooled tasks combine the individual performances of their members without any requirement for interpersonal interaction (Saavedra et al., 1993). The moderation arguments presented in the Burke et al. (2006) claim that both categories of leadership behaviors should have a stronger association with team performance in teams with high, rather than low, level of task interdependence. These results point to the fact that a team design feature namely, task

interdependence, requires both task and person-focused leadership behaviors, pointing towards the central role of leaders as facilitators of collective performance.

Another conceptual moderator refers to the type of team in which the relationship between leadership behaviors and team performance develops. Beyond differences in task interdependence, different types of teams vary in terms of their temporal perspective (project teams versus permanent teams), their stakeholders (production versus service teams) and, as such, the leadership behaviors may have a differential impact on performance in different types of teams. A final aim of this meta-analysis is to test the moderating role of team type and the degree of task interdependence on the relationship between leadership behaviors and team performance.

1.5. Methodological Moderators

Our study also examines the roles of two methodological moderators on the results, namely the level of analysis and the measurement method chosen for the leadership behaviors. The level of analysis refers to the unit at which the analyses are conducted (Gully et al., 2002). As organizations consist of multiple levels, the level of analysis issues in organizational studies are commonly discussed and the debate concerning level issues is not new (Klein et al., 1994), but little is known about how it may influence the research findings on the relation between leadership behaviors and team performance. Based on the literature examining the effect of level of analysis that found differential results at each level (Gully et al., 2002; Ostroff and Harrison, 1999; Klein et al., 1994), the study expects that the level of analysis moderates the relationship between leadership behaviors and team performance.

The second methodological moderator refers to the measurement method used for the predictor variable. In the primary studies included in this meta-analysis, the measurement method used to assess the leader behavior is either based on self-reports or on external evaluations and these differences are expected to have an effect on the correlation between

leader behaviors and team performance. Self-reports are considered to be a source of common method bias, which inflates the covariation between the criterion and predictor (Hülshager et al., 2009). Hence, it is important to systematically assess the variability on the effect sizes due to differences in the measurement method used (Hülshager et al, 2009). Due to possible response biases, such as social desirability, higher correlations can be expected between the team performance and subjective ratings compared to objective ratings.

2. Method

2.1. Literature search

We searched the literature on the relationship between the leader behaviors and team performance between 1967 and 2015. In order to identify all potential studies examining this relationship, seven different searching strategies were used. First, without any restriction on the date of publications, the PsycINFO, EBSCOhost and Web of Science databases were searched. As it has been done in the meta-analysis literature before (Devine & Phillip, 2001), the terms *group*, *work group*, and *team* were used interchangeably to refer to the individuals interacting for the purpose of accomplishing one or more shared goals interdependently. The key words used for the computerized search were: “*leader behavior or leadership or leader style or team leadership or group leadership or team leader or group leader or project leader or project leadership*” and “*team performance or team success or team effectiveness or team productivity or group performance or group success or group effectiveness or group productivity or project success or project productivity or project effectiveness*”. Second, a manual search was conducted, using the reference list of every paper that was conceptually relevant for our study. Third, several leading academic journals, such as *Journal of Organizational Behavior*, the *Journal of Applied Psychology*, *Organizational Behavior and Human Decision Processes*, *Leadership Quarterly*, *Academy of Management Journal*,

Administrative Science Quarterly, *International Journal of Project Management* and *Project Management Journal* were searched to find potential studies. Fourth, in order to obtain unpublished studies, a Google Scholar search with the above-mentioned key words was also performed. Fifth, through interlibrary loan and ProQuest Theses and Dissertations database, unpublished theses and dissertations were requested. Sixth, the annual conference proceedings of Society for Industrial and Organizational Psychology (SIOP) and the Academy of Management annual meeting programs from 2001 to 2015 were explored. Finally, paper requests were sent to the researchers whose studies could not be downloaded from the databases. Approximately, 60% of the papers requested were provided by the authors, however, only 40% of them were found to be appropriate for inclusion in this study. All these search efforts resulted in 238 published and unpublished studies.

2.1.1. Rules for inclusion of studies in the meta-analysis

We used several inclusion criteria for the studies that resulted from the initial literature search. First, we selected studies that reported team performance evaluations as the dependent variable. Second, studies that reported the correlation between leader behavior and team performance were included. Finally, the studies were excluded, when: a) the dependent variable was individual or organizational performance; b) they were conducted in the virtual office context; c) the sample consisted of sport teams; d) they were conceptual in nature; e) they measured the predictor variable only with one item and f) they had duplicated data and they did not report the sufficient information to calculate the effect sizes.

These inclusion criteria resulted in 88 studies (54 of them published in the last ten years) containing 222 effect sizes from 89 independent samples. It should be noted that the present study differs from Burke et al's (2006) meta-analysis because it corrects for artifacts, investigates more variant types of person-focused behavior (i.e. charismatic leadership and emotionally intelligent behaviors and coaching focused behaviors), includes the studies

conducted at the individual level and conducts moderating tests for four moderating variables. Furthermore, some studies included in Burke et al. (2006) were excluded or coded differently in this study, when the research context did not fit the inclusion criteria for our study (e.g. Komaki et al., 1989), when the predictor variable did not directly evaluate leadership behaviors (e.g. Keller, 2001), when the operationalization of the leader behavior was not clear (e.g. Higgins & Routhieaux, 1999), or when the outcome variable was not a clear indicator of subjective or objective team performance (e.g. Wilson-Evered, 2001).

The measurement method for both criterion and predictor variables were not considered to be a criterion for inclusion. However, the differences in the measurement methods were dealt with in a way that made it possible to examine their effects on the results. On the predictor side, leader behaviors were rated by leaders themselves (*considered as subjective ratings*) or others (*considered as objective ratings*), such as team members, non-team members, observers, or in a few cases, by multiple parties. In order to assess if the subjective or objective ratings affect the results, the measurement method used for the predictor was coded and analyzed as a potential moderator in the study.

On the criterion side, we considered objective team performance measures (consist of indicators, such as speed of development, sales per day or objective performance scores obtained in simulations) and subjective team performance measures (are based on the assessments conducted by the team leader, team members, outsiders, and project stakeholders). Both performance indicators were treated separately in the study by subdividing the data accordingly. Combined with the different behavioral styles of leaders (i.e. person and task-focused), 4 different datasets (i.e. person-focused behavior-subjective team performance, task-focused behaviors-subjective team performance, person-focused behaviors-objective team performance, task-focused behaviors-objective team performance) were created and separate meta-analyses were conducted on these datasets. Meta-analyses

examining the relationship between the leader behaviors and subjective team performance were conducted at the individual level and the number of individual respondents was taken as the sample size. On the other hand, the meta-analyses investigating the relationship between the leader behavior and objective team performance were conducted at the team level and the number of teams was taken as the sample size. The total sample size reached to 37190 individual respondents for the total subjective team performance datasets and 1015 teams for the objective team performance datasets.

2.1.2. Data classification and coding

From the primary studies, 18 indicators were extracted: (a) date of the publication, (b) publication type, (c) research type, (d) nature of the organization and participant sample, (e) sample size, (f) team type, (g) team size (h) country, (i) predictor and criterion descriptions, (j) respondents for the predictor and criterion (k) effect size or sizes which are the correlation coefficients between the predictor and criterion variables, (l) level of interdependence among the team members, (m) ad hoc or intact team, (n) level of analysis, (o) reliability of predictor measures, (p) reliability of criterion measures, (r) whether the criterion was dichotomized or not (s) recommendation for inclusion.

Along with the information that was essential for the main analysis (i.e. sample size, effect size(s), reliability coefficients), the information for potential methodological and theoretical moderators was also coded. The level of analysis, as one of the methodological moderators was coded by determining whether or not the effect sizes were computed at the individual or the team level. Measurement method, which is the other methodological moderator, was determined according to who assessed the leader behavior. In terms of theoretically defined moderators, task interdependence was coded, based on the typology of Saavedra et al. (1993) , who categorized the interdependencies within the teams as pooled, sequential, reciprocal and team, from low level interdependency to high level interdependency

respectively. The team type, on the other hand, was coded according to the typology developed by Sundstrom et al. (2000) that classified the teams as production, service, project, executive/management, action/performing. The frameworks that were also used in Burke et al.'s (2006) study, were chosen purposefully to be able to compare the meta-analytical results. When multiple indicators of team performance were reported in the primary studies (e.g. separate source evaluation), we did not average the correlations, but rather took the measure that gave the least biased rating (when available non-member ratings were chosen in order to account for common method bias).

The first two authors separately coded 20 papers and discussed the problematic issues (estimation of combined reliabilities, inconsistencies in reported sample size, etc). For these 20 papers, the two coders achieved substantial consistency, the agreement varied between 90% and 100%. All disagreements were solved through discussion and therefore, the remaining papers were further coded by the first author and these codes were ultimately used in the analyses. An additional number of 17 problematic papers (unclear level of task interdependence and team type) were further discussed by the first two authors, after these papers were also coded independently. For this second batch of papers, only 12 % of the codes appeared to generate discrepancies in interpretation, on which consensus was reached after discussions. The codes that the two coders agreed upon through discussion were eventually used in the final analyses.

2.2. Meta-analysis procedures

To conduct the meta-analysis, the procedures described by Hunter and Schmidt (2015) were followed and the analyses were aided by the Hunter-Schmidt Meta-Analysis Programs 2.0 (Schmidt & Le, 2014). This interactive software uses a random-effects model, which allows the true effect sizes to vary. It is contrary to the fixed effects model, which assumes that the true effect sizes have fixed values.

The procedure followed consisted of a couple of consecutive steps. First, when the primary study had multiple effect sizes, composite scores were calculated by using the formula presented in Hunter and Schmidt (2015) to ensure that each study contributed only one correlation coefficient to the meta-analysis. This was possible when the inter-correlations among the variables with multiple effect sizes were available. When this information was missing, the average of the effect sizes was included in the analyses. The fact that the effect sizes were highly similar in most cases, minimized concerns associated with the approach of taking the average. Multiple measures appeared in different forms in the primary studies. For instance, in some cases, the team performance was measured repeatedly using the same measure resulting in multiple effect sizes. In other cases, composite scores were obtained when correlations referring to different leadership behaviors that could be grouped under one of the main leadership behaviors (person and task-focused) were provided in the same study.

Second, the effects sizes were corrected individually for the measurement error in each primary study. There were several reasons for choosing individual corrections rather than using artifact distributions. First, the reliability information for both the predictor and the criterion variables were available in the majority of the studies. The reliability information was missing in only 12 studies examining the relationship between leader behaviors and subjective team performance. Second, the type of reliability coefficients, used for correcting measurement errors, changed in each study. For instance, the inter-rater reliability coefficients were considered when the different independent raters rated the same variable. The Cronbach's alpha coefficients were used when the meta-analysis was conducted at the individual level, or when the leader behavior and team performance were assessed by the leaders. The ICC2 coefficients were used to correct for artifacts when the meta-analysis was conducted at the team level. When the reliabilities were missing, the average of the relevant reliabilities was taken (see Table 1 for the average reliabilities). The calculation of the

Table 1*Average Reliabilities for the Study Variables*

Variables	Reliabilities
Person-focused Leadership – Subjective team performance	.81 ^a - .83 ^a
Task-focused Leadership – Subjective team performance	.76 ^a - .78 ^a
Person-focused Leadership* – Objective team performance	.82 ^b - 1
Task-focused Leadership* – Objective team performance	.55 ^b - 1
Transformational Leadership – Subjective team performance	.84 ^a - .85 ^a
Empowering Leadership – Subjective team performance	.79 ^a - .85 ^a
Coaching Leadership – Subjective team performance	.71 ^a - .83 ^a
Consideration – Subjective team performance	.74 ^a - .84 ^a
Emotionally Intelligent Leadership – Subjective team performance	.77 ^a - .80 ^a
Charismatic Leadership – Subjective team performance	.76 ^a - .83 ^a
Boundary Spanning – Subjective team performance	.80 ^a - .85 ^a
Transactional Behavior – Subjective team performance	.81 ^a - .88 ^a
Initiating Behavior – Subjective team performance	.79 ^a - .81 ^a

a. Average Cronbach's alpha values. b. Average ICC₂ values

composite scores via the interactive system provided new reliability coefficients that were used to correct the measurement errors. As the objective team performance was an objective measure, the reliability for this variable was taken as 1. Furthermore, when the need arose, a set of decision rules on reliabilities was used in order to have more conservative effect sizes. For instance, when in a study (e.g. Ehrhardt, 2014) the team performance was measured by a single item, the reliability was determined as .25 following Hunter and Schmidt's (2015) advice (p.257). Moreover, when the author did not report the reliability coefficients of the measurements, but only noted a range, the largest reliability coefficient was taken as the reliability coefficient (e.g. Keller, 2006, Lee, 2011). Finally, in cases, where the reliabilities

were reported to be good without a definite number (e.g. Oshinubi, 2007), .8 was taken as the reliability coefficient.

Third, when eligible, the correlations were also corrected for the dichotomization of the predictor variable in order to decrease the overestimation of the sampling error. The point-biserial correlations were attenuated to convert the correlations to a full “1” scale. The adjustments to the sample sizes for the corrected correlations were also done, which decreased the sample size by almost half in most of the studies (e.g. Durham et al., 1997).

Fourth, sample-weighted means of the corrected correlations were computed in order to correct for sampling error and sample size. For the meta-analysis conducted at the individual level, the number of individual respondents in the primary studies was looked up and entered as the sample size in the analyses (also done by Hülshöger et al, 2009). However, in the analysis conducted at the team level, the team number was entered as the sample size. Finally, although correcting for range restriction would have resulted in more accurate estimates of the relationships, no information on range restriction was presented in the primary studies included in this research. Therefore, we did not correct for range restriction. Hence, it should be noted that the estimations resulting from the analyses might be underestimates of the true relationships.

3. Results

Given our focus on two categories of leadership behaviors and two categories of team outcomes, we used four different datasets that combined leader behaviors (person and task-focused) and the type of team performance (subjective team performance and objective team performance). The results will be presented separately for each dataset.

3.1. Person-focused behaviors and subjective team performance

The first dataset was used to examine the relationship between the person-focused leader behaviors and subjective team performance (see Table 2). This overall analysis was

Table 2
Relationships Between Person-focused Leader Behaviors and Subjective team performance

Leader Behavior	<i>N</i>	<i>k</i>	\bar{r}	$SD\bar{r}$	<i>P</i>	$SD\rho$	95% <i>CV (P)</i>	80% <i>CI (P)</i>	% <i>VE</i>
Person-focused	26,266	72	.255	.177	.328	.201	(.280, .377)	(.071, .585)	8.63
Consideration	3,352	11	.301	.190	.365	.215	(.232, .497)	(.090, .640)	7.94
Charismatic	2,588	10	.259	.106	.338	.113	(.254, .422)	(.194, .482)	31.31
EI	3,335	10	.291	.134	.351	.169	(.240, .463)	(.135, .567)	11.89
Empowering	4,616	13	.171	.159	.202	.178	(.100, .304)	(-.026, .430)	11.89
Coaching	5,511	11	.190	.154	.289	.183	(.175, .403)	(.054, .524)	10.1
TRF	9,971	27	.295	.167	.360	.193	(.284, .436)	.114, .607)	8.34

Note: *N* = total number of individual respondents; *k* = number of effect sizes included; \bar{r} = weighted mean correlation; $SD\bar{r}$ = standard deviation for weighted mean correlation; ρ = correlation for population estimate corrected for attenuation due to measurement error, sampling error variance and dichotomization on the predictor, if eligible; $SD\rho$ = standard deviation for population estimate; *CV* = confidence interval for the corrected correlation, *CI* = credibility interval for the corrected correlation. % *VE* = variance accounted for by artifacts.

conducted at the individual level, therefore the number of individual respondents reported in the primary studies was entered as the sample size for the meta-analysis. The results indicated that person-focused behaviors have a moderate, positive relationship with subjective team performance ($\rho=.328$). The analysis was based on 72 effect sizes representing 26266 individual respondents. Both the credibility and confidence intervals did not contain zero, indicating that the result was significant and could be generalized in other situations. The same dataset was also examined for the subgroups classified according to specific person-focused leader behaviors. The results were in line with the main analyses. Except for empowering leadership, all the person-focused leader behaviors, namely transformational, charismatic, emotionally intelligent, considerate and coaching behaviors of leaders, had a moderately positive relationship with team performance. The strongest corrected correlations occurred for consideration ($\rho=.365$) and transformational ($\rho=.357$) leader behaviors, followed by emotional intelligence ($\rho=.351$), charismatic behaviors ($\rho=.338$) and coaching behaviors ($\rho=.289$), Confidence, as well as credibility intervals, excluded zero, indicating that corrected

correlations were not only significant, but also consistent across different situations. However, for empowering leadership behavior, the relationships varied greatly among the primary studies suggesting the inconsistency of the findings. The variances accounted for by artifacts were low, ranging between 7.94% and 31.31% for the sub-analyses. The variance was 8.56% for the overall person-focused behaviors. This evidenced that studies contained variations beyond sampling and measurement error, indicating that potential moderators were affecting the relationship between the criterion and the predictor.

3.2. Task-focused behaviors and subjective team performance

The second dataset consisted of studies exploring the relationship between the task-focused leader behaviors and subjective team performance (see Table 3). The analysis with this dataset was also conducted at the individual level. The results showed a moderate, positive effect of the task-focused behaviors on perceived performance ($\rho=.33$), which was equal to the person-focused behaviors. The analyses were based on 26 effect sizes, representing 10924 individual respondents. Both the credibility and the confidence intervals did not include zero, which indicated that the result was significant and consistent. When the task-focused behaviors were analyzed separately for each specific task-focused leader behavior, all of them were found to have moderately positive and significant relationships with the subjective team performance. Effect sizes ranged between $\rho=.321$ and $\rho=.349$, which were in line with the results of the total task-focused behaviors. It should also be noted that the results of boundary spanning leadership had only 3 effect sizes. Therefore, the results must be interpreted with great caution, as a small number of effect sizes increases the possibility of a second-order sampling error (Hunter & Schmidt, 2015). Arthur et al. (2003) also advise researchers to approach the studies that have less than five effect sizes with caution. The overall results indicated that the percentages of variance accounted for by artifacts were low, ranging between 5.12% and 29.45% for the sub-analyses. For the task-

focused behaviors, it was 11.26% in total. According to the 75% rule of Hunter and Schmidt (2015), the amount of variation that could not be explained by artifacts suggested the possible existence of moderators.

Table 3

Relationships Between Task-focused Leader Behaviors and Subjective team performance

Leader Behavior	<i>N</i>	<i>k</i>	\bar{r}	$SD\bar{r}$	<i>P</i>	SD_P	95% <i>CV (P)</i>	80% <i>CI (P)</i>	% <i>VE</i>
Task-focused	10,924	26	.260	.143	.330	.160	(.264,.395)	(.124,.535)	11.26
Boundary	906	3	.285	.107	.349	.099	(.215,.483)	(.222,.476)	29.45
	3439	8	.266	.212	.321	.225	(.161,.481)	(.033,.609)	5.12
Transactional									
Initiating	5282	13	.269	.091	.330	.098	(.268,.391)	(.254,.455)	25.04

Note: *N* = total number of individual respondents; *k* = number of effect sizes included; \bar{r} = weighted mean correlation; $SD\bar{r}$ = standard deviation for weighted mean correlation; ρ = correlation for population estimate corrected for attenuation due to measurement error, sampling error variance and dichotomization on the predictor, if eligible; $SD\rho$ = standard deviation for population estimate; *CV* = confidence interval for the corrected correlation, *CI* = credibility interval for the corrected correlation. % *VE* = variance accounted for by artifacts.

3.3. Person and task-focused behaviors and objective team performance

Using the third and fourth datasets, the relation between leader behaviors and objective team performance was examined (see Table 4). The analyses were conducted at the team level, as all the eligible primary studies were conducted at the team level. Therefore, the number of teams was taken as the sample size. The total number of effect sizes contributed to the analyses was quite low for both behavior types. It was 13 for the person-focused behavior and 4 for the task-focused behavior, while the team sizes were 817 and 198 respectively. The results showed that the correlations were similar for both leader behaviors ($\rho = .175$ for person-focused and $\rho = .185$ for task-focused), albeit much lower than the relationship between the leader behaviors and subjective team performance. The effect sizes were marginally significant and could be generalized across different situations. Analyses on the specific task-focused behaviors and objective team performance could not be examined due to the low number of effect sizes. What was interesting in these analyses was that the artifacts explained 80% of the person-focused and 100% of the task-focused behaviors, which ruled out any potential moderators. Thus, variance in these relationships could be explained by the sampling

and measurement errors. Therefore, the moderator analyses were only conducted for the relationships between the leader behavior and subjective team performance.

Table 4
Relationships Between Leader Behaviors and Objective team performance

Leader Behavior	<i>N</i>	<i>K</i>	\bar{r}	<i>SD</i> \bar{r}	<i>P</i>	<i>SD</i> ρ	95% <i>CV</i> (<i>P</i>)	80% <i>CI</i> (<i>P</i>)	% <i>VE</i>
Person-focused	875	13	.153	.134	.175	.065	(.085,.246)	(.082,.249)	80.47
Task-focused	226	4	.125	.093	.185	.000	(.030,.288)	(.159,.159)	100

Note: *N* = total number of teams; *k* = number of effect sizes included; \bar{r} = weighted mean correlation; *SD* \bar{r} = standard deviation for weighted mean correlation; ρ = correlation for population estimate corrected for attenuation due to measurement error, sampling error variance and dichotomization on the predictor, if eligible; *SD* ρ = standard deviation for population estimate; *CV* = confidence interval for the corrected correlation, *CI* = credibility interval for the corrected correlation. % *VE* = variance accounted for by artifacts.

3.4. Moderator Analysis

As the results indicated, considerable variation existed across studies examining the relationship between leader behaviors and subjective team performance. This suggested that moderators might be operating in these relationships. Consistent with the Schmidt and Hunter (2015) method, moderators were tested by creating subsets of correlations via the interactive system. All the moderator variables were categorical.

3.4.1. Methodological Moderators

3.4.1.1. Level of Analysis.

The level of analysis reflects the estimation of correlations (individual versus group) in the original study. It should be noted that in the datasets, the number of individual respondents was coded as the sample size and the individual level reliability values (e.g. Cronbach alpha, interrater reliability) were used for the corrections of measurement errors.

The moderator analysis examining the effect of level of analysis detected a difference between individual and team-level findings for the person-focused leadership (see Table 5 and 6). The corrected mean correlation was higher for the individual level analysis than for the team-level analysis ($\rho=.405$ and $\rho=.319$, respectively). Both effect sizes were significant and consistent and the confidence intervals had very little overlap indicating that the effect sizes at

Table 5

Relationships Between Person-focused Leader Behaviors and Subjective team performance: Moderator Analyses for Both Methodological and Theoretical Moderators

Moderating Variables	<i>N</i>	<i>k</i>	\bar{r}	$SD\bar{r}$	<i>P</i>	SD_p	95% CV (<i>P</i>)	80% CI (<i>P</i>)	% VE
Level of Analysis									
Ind. Level	4,247	25	.346	.123	.405	.123	(.347,.463)	(.247,.562)	29.77
Team Level	22,019	47	.238	.181	.31	.211	(.248,.373)	(.041,.580)	6.51
Team Level	4,157 ^a	49	.246	.177	.319	.198	(.251,.386)	(.065,.572)	32.39
Measurement Method									
Subj. Rating	1,523	11	.348	.103	.412	.088	(.337,.486)	(.299,.524)	50.85
Obj. Rating	22,316	54	.232	.172	.302	.198	(.247,.357)	(.049,.555)	8.22
Task Interdep.									
Low Interdep.	4,938	11	.231	.146	.290	.188	(.174,.406)	(.050,.531)	8.61
High Interdep.	20,516	55	.259	.184	.335	.205	(.279,.392)	(.073,.598)	8.08
Team Type									
Production	561	2	.229	.167	.254	.173	(-.001,.509)	(.033,.476)	11.72
Service	5,977	16	.327	.189	.402	.225	(.288,.516)	(.114,.691)	6.04
Project	14,466	40	.253	.159	.351	.165	(.296,.406)	(.139,.563)	13.42
Management	746	2	.406	.166	.512	.099	(.357,.666)	(.386,.638)	21.71
Action/Perf	4072	8	.125	.138	.145	.15	(.035,.255)	(-.047,.337)	10.18

Note: *N* = total number of individual respondents, except for “a” which refers to team number. *k* = number of effect sizes included; \bar{r} = weighted mean correlation; $SD\bar{r}$ = standard deviation for weighted mean correlation; *p* = correlation for population estimate corrected for attenuation due to measurement error, sampling error variance and dichotomization on the predictor, if eligible; SD_p = standard deviation for population estimate; CV=confidence interval for the corrected correlation, CI=credibility interval for the corrected correlation. % VE= variance accounted for by artifacts.

Table 6

Relationships Between Task-focused Leader Behaviors and Subjective team performance: Moderator Analyses for Both Methodological and Theoretical Moderators

Moderating Variables	<i>N</i>	<i>k</i>	\bar{r}	$SD\bar{r}$	<i>P</i>	SD_p	95% CV (<i>P</i>)	80% CI (<i>P</i>)	% VE
Level of Analysis									
Ind. Level	1,527	8	.308	.103	.378	.109	(.283,.473)	(.238,.518)	35.79
Team Level	9,397	18	.252	.147	.322	.166	(.241,.402)	(.109,.534)	8.78
Team Level	1,633 ^a	20	.273	.150	.385	.166	(.287,.483)	(.173,.597)	44.75
Task Interdep.									
Low Interdep.	1,987	4	.177	.127	.209	.167	(.036,.382)	(-.005,.423)	9.66
High Interdep.	8,860	21	.279	.141	.356	.146	(.289,.423)	(.169,.543)	12.86
Team Type									
Production	-	-	-	-	-	-	-	-	-
Service	734	4	.289	.14	.385	.237	(.134,.637)	(.082,.689)	14.71
Project	5,634	14	.297	.162	.408	.157	(.320,.497)	(.207,.610)	12.55
Management	746	2	.245	.092	.296	.073	(.166,.425)	(.202,.390)	38.24
Action/Perf	3,273	4	.205	.104	.238	.102	(.132,.345)	(.108,.368)	12.42

Note: *N* = total number of individual respondents, except for “a” which refers to team number. *k* = number of effect sizes included; \bar{r} = weighted mean correlation; $SD\bar{r}$ = standard deviation for weighted mean correlation; *p* = correlation for population estimate corrected for attenuation due to measurement error, sampling error variance and dichotomization on the predictor, if eligible; SD_p = standard deviation for population estimate; CV=confidence interval for the corrected correlation, CI=credibility interval for the corrected correlation. % VE= variance accounted for by artifacts.

both levels were significantly different from each other. For the task-focused behavior and subjective team performance relationship, on the other hand, the moderating effect of the level of analysis was not observed. Although the correlations for the individual level were slightly

higher, the confidence intervals in both levels overlapped to a great degree, which indicates that the level of analysis did not emerge to be a moderating factor for the task-focused behaviors. The effect sizes were significant and consistent across different situations at each level. However, the variance across studies could still not be explained simply by the sampling error and unreliability, suggesting moderation by some other variables.

What was interesting in these analyses was that for both types of leader behaviors, the variances explained by artifacts were notably higher for the individual level studies (29.77% for person-focused behaviors and 35.79% for the task-focused behaviors) compared to the overall group analysis (8.63% for person-focused behaviors and 11.26% for the task-focused behaviors). Hence, examining studies separately, based on their level of analyses, improved the explanation power of artifacts for the individual level studies. However, for the team level analysis, the variance explained by artifacts even dropped in the sub-analyses compared to overall group analyses (to 6.51% for person-focused behaviors and 8.78% for task-focused behaviors). In order to gain more information about the possible reasons causing this situation, the same moderating analysis was conducted by creating team level datasets for each leader behavior type. In this case, the team number was coded as the sample size and the systematic error was corrected by taking the ICC_2 values as the reliability coefficients of the predictor and, when applicable, also for the criterion variable. This way, two more studies, which provided only team numbers, were also included in the analysis (i.e. Wageman, 2001; Cooper & Wakelam, 1999). Out of 49 studies conducted at the team-level, 25 provided ICC_2 values. The missing ICC_2 values were replaced by the average ICC_2 values that refer to the same type of leader behavior. For the person-focused leadership, although the estimated effect size showed almost no difference, the percentage of the variance explained by the artifacts improved greatly (32.39 % compared to 6.51% in the first approach). For the task-focused leadership, on the other hand, the effect size increased from .32 to .39 and the artifacts

explained 44.75% of the variability across studies, compared to 8.78% in the first approach. Another interesting finding was that, although the overall analysis resulted in equal effect sizes for both leader behaviors, the moderation analyses exhibited that, for the individual level studies, person-focused leadership and, for the team-level studies, task-focused leadership had higher relationships with subjective team performance.

3.4.1.2. Measurement Method.

Another methodological moderator examined in the study was the measurement method used for the predictor variable. When the leader behavior was assessed by the leader him/herself, it was coded as the subjective rating, while when the assessment was done by others, it was coded as the objective rating (see Table 5 and 6). The moderator analysis could only be conducted for the person-focused behaviors and subjective team performance, as there were only 2 studies providing subjective ratings for the task-focused leader behavior. For the person-focused leader behaviors, the respondent of the predictor was found to be a moderator. The corrected correlations for the subjective ratings were larger ($\rho=.348$) compared to objective ratings ($\rho=.232$) and there was very little overlap in the confidence intervals. The variance explained by the artifacts largely differed for respondent types (50.85% for the subjective ratings and 8.22 % for the objective ratings), but still remained lower than 75%. This suggested that there could be other moderating variables affecting the relationship.

3.4.2. Theoretical Moderators.

Task interdependence was a categorical variable with four levels and in line with previous studies (Burke et al, 2006; Gully et al. 2002), for analytic purposes we have dichotomized the variable in low and high task interdependence using a median split.. In the person-focused leadership behaviors and subjective team performance dataset, the corrected mean correlations were lower for the teams with low interdependence than for the teams with high interdependence ($\rho=.29$ and $\rho=.335$ respectively), nevertheless, because of the

substantially overlapping confidence intervals, this moderation effect is not significant. Similarly, for the relationship between task-focused leadership and team performance, despite higher correlations for highly interdependent teams compared to the teams with low interdependency, the confidence intervals overlapped to a great degree, indicating that the level of interdependence was not a moderating factor in this relationship. The findings also suggested that for teams with low level of interdependency, person-focused leadership behaviors have a stronger association with subjective team performance than task-focused behaviors ($\rho=.290$ compared to $\rho=.209$). On the other hand, task-focused behaviors had higher relations with subjective team performance in highly interdependent teams ($\rho=.335$ compared to $\rho=.356$). Nevertheless the substantial overlap in the confidence interval shows that the moderating role of task interdependence is not supported. Moreover, the low percentages of the variances accounted by artifacts indicate that for both leader behaviors some other moderators rather than task interdependence are possibly playing roles in the relationships.

Team type included five types of teams chosen as the research contexts in the primary studies. However, the number of effect sizes for task-focused behaviors ranged between 2-4 for 4 out of 5 categories of the moderator. Only the project teams had the appropriate size to conduct a separate meta-analysis. Following the advice of Arthur et al. (2013), only the meta-analytical results based on at least 5 effect sizes will be explained. As shown in Table 5, the corrected correlations between person-focused leader and subjective team performance were significantly higher for the service (.402) and project teams (.351) as compared to the action/performing teams (.145). The confidence intervals between the action teams and the other types of teams were not overlapping. However, the relationship was not found to be consistent for the action-focused teams, as the lowest range for the interval was -.047. Project teams had higher correlations for the task-focused behavior, compared to person-focused behavior ($\rho=.408$ and $\rho=.351$ respectively). However, for both cases, the percentage of

variances explained by the artifacts was around 13%, which indicated that there were other moderators operating in the relationships examined.

4. Discussion

Our meta analytical investigation had three important aims: (1) to replicate in a larger sample of studies (88 studies compared to 50 studies) the results reported in Burke et al. (2006) concerning the positive influence of task and person-focused leadership behaviors on team outcomes, (2) to explore the association between more specific types of leadership behaviors (subsumed to the two main categories) and team outcomes (3) to test the moderating role of task interdependence and team type in the relationship between leadership behaviors and team outcomes, and (4) to test the moderating role of the method used to evaluate leadership behaviors (self-rated versus others-rated) and the level of analysis (individual versus group).

Concerning the first aim, our study replicated in general the findings reported by Burke et al. (2006), showing that both task and person-focused leadership behaviors are positively and significantly related to subjective team performance, exhibiting the same magnitude of effect size ($\rho=.32$). The consistency of these findings with previous research (e.g. Thamhain, 2004; Stewart, 2006; Burke et al., 2006, Tyssen et al., 2014) supports the robustness of the positive association between the two categories of leadership behaviors and team performance. In other words, team performance is enhanced both by task-focused leadership behaviors as well as by person-focused leadership behaviors. In a similar vein, in another meta-analysis Chiaburu and colleagues (2014) showed that leader-member exchange, contingent reward leadership and transformational leadership styles predict positively subordinates' proactivity. These results suggest that alternative mechanisms might explain the association between leadership behaviors and team outcomes and are aligned with some recent calls for conceptual refinements of leadership theories (Van Knippenberg &

Sitkin, 2013). In particular, functional leadership approaches could further explore the functions served by various leadership behaviors in various team performance episodes (Zaccaro et al., 2001) and further clarify the mechanisms that explain the positive association between leadership behaviors and team performance.

With respect to the second dependent variable, namely objective team performance, the magnitude of the relationships between both leader behaviors and objective team performance were again almost identical to each other ($\rho=.175$ and $\rho=.185$). Furthermore, the artifacts explained more than 75% of the variation overruling any possibility for moderators. This was not surprising, as the analysis included only team-level studies that removed the potential moderating effect of the level of analysis. However, due to the low number of effect sizes for task-focused leadership the conclusions should be interpreted with caution. Although the estimated effect sizes in this study were lower than the ones reported in Burke et al. (2006), they are expected to be more reliable due to the larger number of studies included in our analysis and the corrections for the artifacts based on the Hunter and Schmidt (2015) method. A novel insight from our results is that person-focused behaviors did not explain more variance in objective team performance than task-focused leadership (both task and person-focused behaviors explained around 3% of the variance in objective team performance). However, a conclusion common in both studies was that the magnitude of the relationship between leadership behaviors and objective team performance emerged to be nearly half of the one obtained for subjective team performance, but was still significantly positive and consistent. In line with Burke et al (2006), we argue that common method bias could be a plausible explanation for these differences.

Concerning the second aim of the study, our results showed rather similar effect sizes across the subcategories of task and person-focused leadership behaviors and subjective team performance. For person-focused leadership behaviors, the results especially highlighted the

robustness of the relationship between transformational leadership and subjective team performance found previously (Burke et al., 2006; Stewart, 2006; Tyssen et al., 2014). In all these studies, the effect sizes ranged between .33 and .36. Thus, combined with the present finding ($\rho=.36$), the moderately strong relationship between transformational leadership and team performance can be considered to be stable and consistent across different situations. Other person-focused behaviors, namely consideration, emotionally intelligent, charismatic behaviors and coaching behaviors also resulted in very similar effect sizes as they conceptually overlap with transformational leadership. For instance, consideration, charismatic and coaching behaviors are similar to the sub-dimensions of transformational leadership, referred to as “individualized consideration”, “idealized influence” and “intellectual stimulation” respectively. Furthermore, emotional intelligence is positively related to the various dimensions of transformational leadership, as confirmed in a meta-analysis done by Harms and Crede (2010). Last, the relationship between the empowering leadership and subjective team performance was weak and found to be inconsistent across situations. It could be that in some teams, where strict deadlines apply, top-down decisions and timely assignment of tasks might be more preferable than being able to participate in decisions.

The specific task-focused leader behaviors also revealed similar effect sizes for their relations with subjective team performance. Very similar results were obtained for transactional and initiating behaviors ($\rho=.32$ and $\rho=.33$ respectively), as they are partially overlapping behaviors (Keller, 1992), both focusing on clarification and assignment of role requirements. The findings indicated a couple of differences with Burke et al.’s (2006) study. Although in their study person-focused behaviors accounted for slightly more variance in team performance, such a difference was not replicated by our results. Furthermore, effect sizes for consideration and transactional leadership were higher and consistent in this study,

because of the corrections done for the artifacts. The fact that the effect size for empowering leadership was half the value obtained in Burke et al.'s study ($\rho=.20$ compared to $\rho=.47$) can be explained with the different operational definitions of the concept. In our study, we distinguish between developing (coaching-focused) and participative leadership behaviors (empowering) whereas in their study the two type of behaviors were classified together. Finally, a common conclusion from both studies was that boundary-spanning behaviors explained the most variance in team performance. However, caution is advised in interpreting these results, as the number of effect sizes was lower than the suggested number of five (Arthur et al., 2003).

The third aim of the paper, was to address the moderating role of task interdependence and task type in the relationship between leadership behaviors and team performance. With respect to task interdependence, we did not find a moderating role of task interdependence for the relationships between leader behavior and team performance.

With respect to the team type as a moderator, our results indicated a clear difference between the service and project teams on the one hand and the action/performing teams on the other hand. Especially, person-focused behaviors had the strongest and most consistent relationship with subjective team performance for service teams. This is consistent with the findings in the literature (e.g. Lam & Schaubroeck, 2000; MacKenzie et al., 2001), showing that in settings where the team members themselves are expected to perform person-focused behaviors towards their customers, team leaders need to empower, inspire, and serve as role models in order for their frontline subordinates to understand the process leading to the best possible service (Hui et al, 2007). It should also be noted that service teams can also benefit from task-focused leader behaviors as the magnitude of the effect size indicated ($\rho= .385$). For instance, in order for people to focus on their customers' needs and to function comfortably in their jobs, they need a well-defined structure of tasks and a clear sense of direction.

Furthermore, in order to find customer-focused solutions, they need to scan their environment for information and ideas.

The findings also indicated that project teams can benefit from both person-focused and task-focused leader behaviors. However, compared to person-focused behaviors, task-focused behaviors had a higher relation with subjective team performance. In project settings where the outcomes are unknown and time bound tasks are performed, Turner and Muller (2003) define the functions of leaders as being responsible of defining the purpose and objectives of the project, planning, executing (i.e. initiating behavior) and controlling the processes (i.e. management by exception), motivating the team members (i.e. contingent rewarding) and as managing the project relative to internal and external objectives (i.e. boundary spanning). Therefore, each of these task-focused leader behaviors are expected to be effective in project environments, which is a fact supported by the findings of our meta-analysis.

Last, the findings also provided insight for the relationship between leader behaviors and team performance for action/performing teams. Devine (2002) defined action teams as groups consisting of highly specialized individuals that engage in relatively brief real-time performance events that are unpredictable. The findings in this study showed that both leader behaviors had the weakest relation with team performance in action/performing teams. This might be due to the highly specialized characteristics of the individuals composing these teams. Such teams, which are able to self-manage themselves, leadership might become redundant and its relation with team performance might decrease. Furthermore, the results highlighted that the relationship between task-focused leaders and subjective team performance was higher compared to person-focused leadership ($\rho=.238$ compared to $\rho=.145$) in action/performing teams. Individuals in such teams might be more likely to be motivated by a task-focused leader who can give them directions to solve the challenges in unexpected

situations and who can monitor task execution and encourage followers to actively avoid committing any mistakes (Miles, 2014).

4.1. Methodological and practical implications

Our study supports the need to correct for unreliability of the scores and for including team level reliability scores when analyses are performed at the team level of analysis. Our findings also highlighted the importance of using objective measurement methods for the leader behavior. If authors intend to use self-reports, they should be aware of the fact that this method overestimates the effect sizes considerably (Hülshager et al., 2009) and that more objective measures from multiple sources are desirable.

The systematic analysis done in this study evidenced that both person and task-focused behaviors are essential for a good team performance. The general belief about the superiority of person-focused behaviors on performance was refuted in the team context by the findings of this study. In fact, task-focused behaviors were found to have a slightly stronger relation with team performance at team-level and also for teams that have a high degree of interdependence, such as project teams. Although the differences between leader behaviors were small, the findings confirm the previous meta-analysis finding of Judge et al. (2004). Thus, team leaders, especially if they are leading teams with high degree of interdependence, should first realize that task allocation and coordination behaviors are essential for an effective team leader (Keller, 1992). They should also be aware of the fact that, despite transparent and flat organizational structures, most of the important decisions are often made through informal and hidden networks (Hirst & Mann, 2004). This requires them to be involved in boundary spanning activities by communicating with stakeholders and negotiating for resources. Bass (1990) claims that transactional leadership serves as the basis of all leadership in organizations. Thus, in order to be able to motivate their team members, leaders should clarify rewarding mechanisms.

However, the practitioners should also not disregard the importance of person-focused behaviors on their teams' performance. They should be aware of the fact that the higher task interdependence also increases the need for person-focused behaviors. The effect sizes found for the relationship between person-focused behaviors and subjective team performance clearly indicated that qualities, like being considerate for the needs of their team members, understanding others' and their own emotions and regulating them constructively, coaching, facilitating the development of their team members and using their personal abilities and power to influence others in order to make them intrinsically believe in their vision, are important to obtain higher team performance. The results also indicated that the relationship between empowering leadership and subjective team performance changes across different situations. Therefore, team leaders should be able to judge the context well before creating opportunities for members to participate in the decisions. Finally, the findings of this current study especially highlight the importance of team leaders' transformational behaviors by confirming the stability and consistency of past findings.

4.1.1. Limitations and Future Research Directions

There are also some limitations to this study. First, some analyses were based on a relatively small number of effect sizes, especially in the subgroup analyses examining the relationships between specific leader behaviors and objective team performance. A small number of effect sizes provides information to researchers by showing the areas that still need more investigation. Furthermore, even if the mean effect sizes would be more accurate if they were based on large number of primary studies, a small number of effect sizes (Hülshager et al., 2009) still provides valuable information. Nevertheless, it should be emphasized that analyses based on additional effect sizes will provide more accurate results for the relationships lacking in appropriate effect sizes.

The second limitation is that, although the study was able to reach quite a few unpublished theses and conference papers, there is still a possibility that some relevant unpublished studies were left out. However, Stewart (2006) claims that there is a trade-off between the quality of the unpublished papers and their possible contribution. Therefore, considering the various approaches undertaken to search for relevant papers, the estimated parameters in this study can only be a slight overestimation of the true parameters.

Third, Judge et al. (2004) warn about the importance of the correction for range restriction. In this study, the need for this correction was also valid, as it is likely that individuals are selected to leadership positions on the basis of the degree to which they are person-focused or task-focused. It is likely that corrections for range restriction would have made the corrected correlations somewhat higher. Although based on the Schmidt and Hunter (2015) method, we were able to correct effect sizes for three types of errors (i.e. systematic error, sampling error and dichotomization) alternative methods like weighted least squares regression (Rosopa, Schaffer & Schroeder (2013) and Steel & Kammeyer-Mueller, 2002) could further help, especially in exploring plausible moderators.

Although this study clearly highlights the importance of leadership in team performance, the processes explaining how and under which conditions leaders effect team performance still remains to be examined. Understanding the extent to which different leadership behaviors similarly affect teams can provide information on the mechanisms (Stewart, 2006). Thus, this study can be a good basis for future researchers to examine these processes. There is also a need for researchers to integrate some other leadership behaviors that might be influential in team contexts, such as ethical leadership, authentic leadership, servant leadership etc. However, despite the countless number of studies examining the relations between these leadership behaviors and performance at the individual levels, there are unfortunately still not many empirical studies conducted in team environments. Thus,

future studies could contribute to this field. Furthermore, as the findings exhibited, research looking at objective team performance is quite limited in numbers. Only a minority of studies used objective methods to evaluate team performance. Due to methodological reasons, the effect sizes obtained for subjective methods (i.e. subjective team performance) were nearly double the ones provided for objective methods (i.e. objective team performance). Last, studies examining boundary spanning behaviors of leaders in team contexts are clearly missing. Moreover, this field of research seems to be unpopular in team research as in the last ten years, since Burke et al.'s (2006) research, the amount of eligible data for the meta-analysis emerged to be the same and thus very low to be able to draw concrete conclusions (i.e. only three studies). Considering the effect sizes of the relationship found between boundary spanning and team effectiveness in both the current and Burke et al.'s (2006) study, which were the highest among the task-focused behaviors, the need for future research on this relationship is apparent for the advancement of the field.

References

- Antokanis, J., Avolio, B. J., Sivasubramaniam, N. (2003). Context and Leadership: an examination of the nine-factor full-range leadership theory using the Multifactor Leadership Questionnaire. *The Leadership Quarterly*, Vol. 14, pp. 261-295.
- *Aronson, Z. H., Shenhar, A. J., & Patanakul, P. (2013). Managing the Intangible Aspects of a Project: The Affect of Vision, Artifacts, and Leader Values on Project Spirit and Success in Technology-Driven Projects. *Project Management Journal*, 44(1), 35-58.
- Arthur, W., Jr., Bennett, W., Jr., Edens, P. S., & Bell, S. T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology*, 88, 234–245.
- * Avolio, B. J., Waldman, D. A., & Einstein, W. O. (1988). Transformational leadership in a management game simulation: Impacting the bottom line. *Group & Organization Studies*, 13(1), 59–80.
- Avolio, B. J., Bass, B. M. (2004). *Multifactor Leadership Questionnaire*. Manual and Sampler Set, Third Edition, published by Mind Garden, Inc.
- *Ayoko, O. B., & Konrad, A. M. (2012). Leaders' transformational, conflict, and emotion management behaviors in culturally diverse workgroups. *Equality, Diversity and Inclusion: An International Journal*, 31(8), 694-724.
- *Ayoko, O. B., & Callan, V. J. (2010). Teams' reactions to conflict and teams' task and social outcomes: The moderating role of transformational and emotional leadership. *European Management Journal*, 28(3), 220-235.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Bass, B. M. (1990). *Bass and Stogdill's handbook of leadership*. New York: Free Press.
- * Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of applied psychology*, 88(2), 207.
- *Benoiel, P., & Somech, A. (2014). The Role of Leader Boundary Activities in Enhancing Interdisciplinary Team Effectiveness. *Small Group Research*, 1046496414560028.
- * Bhatia (2013). *Leader Coaching and Contentious Communication in Teams: Intervening to Prevent Disruption of Team Learning and Effectiveness* (unpublished manuscript).

- *Bolman, D. B. (2012). *Examining the Relationship Between Technology Leadership Behaviors and Project Success*. Northcentral University.
- * Brewer, N., Wilson, C., & Beck, K. (1994). Supervisory behavior and team performance amongst police patrol sergeants. *Journal of Occupational and Organizational Psychology*, 67, 69–78.
- * Braun, S., Peus, C., Weisweiler, S., & Frey, D. (2013). Transformational leadership, job satisfaction, and team performance: A multilevel mediation model of trust. *The Leadership Quarterly*, 24(1), 270-283.
- Burke, C. S., Stagl, K. C., Klein, C., Goodwin, G. F., Salas, E., & Halpin, S. M. (2006). What type of leadership behaviors are functional in teams? A meta-analysis. *The leadership quarterly*, 17(3), 288-307.
- * Burrell, M. A. (1996). *The relationship between team leader behaviors and team performance and satisfaction*. (Doctoral Thesis / University of North Texas).
- *Chang, J. W., Sy, T., & Choi, J. N. (2011). Team emotional intelligence and performance: Interactive dynamics between leaders and members. *Small Group Research*, 1046496411415692.
- *Chen, N. Y. F., & Tjosvold, D. (2013). Inside the leader relationship: constructive controversy for team effectiveness in China. *Journal of Applied Social Psychology*, 43(9), 1827-1837.
- *Chi, N.W., Chung, Y.Y., Tsai, W.C. (2011). How Do Happy Leaders Enhance Team Success? The Mediating Roles of Transformational Leadership, Group Affective Tone, and Team Processes1. *Journal of Applied Social Psychology*, 41(6), 1421-1454.
- Chiaburu, D. S., Smith, T. A., Wang, J., & Zimmerman, R. D. (2014). Relative Importance of Leader Influences for Subordinates' Proactive Behaviors, Prosocial Behaviors, and Task Performance. *Journal of Personnel Psychology*, 13, 70-86.
- *Cole, M. S., Bedeian, A. G., & Bruch, H. (2011). Linking leader behavior and leadership consensus to team performance: Integrating direct consensus and dispersion models of group composition. *The Leadership Quarterly*, 22(2), 383-398.
- Conger, J.A., Kanungo, R.N. (1987). Toward a Behavioral Theory of Charismatic Leadership in Organizational Settings, *Academy of Management Review*, Vol. 12, No. 4, 637-647.
- *Cooper, S., & Wakelam, A. (1999). Leadership of resuscitation teams: 'Lighthouse leadership'. *Resuscitation*, 42, 27–45.
- DeChurch, L. A., Hiller, N. J., Murase, T., Doty, D., & Salas, E. (2010). Leadership across levels: Levels of leaders and their levels of impact. *The Leadership Quarterly*, 21(6), 1069-1085.
- * De Hoogh, A. H., Greer, L. L., & Den Hartog, D. N. (2015). Diabolical dictators or capable commanders? An investigation of the differential effects of autocratic leadership on team performance. *The Leadership Quarterly*.
- Den Hartog, D. N., Van Muijen, J. J., Koopman, P.L.(1997), *Journal of Occupational Psychology*, Vol. 70, pp. 19-34.¹
- * DeRue, D. S., Barnes, C. M., & Morgeson, F. P. (2010). Understanding the motivational contingencies of team leadership. *Small Group Research*, 41(5), 621-651.
- Devine, D. J., & Phillips, J. L. (2001). Do smarter teams do better a meta-analysis of cognitive ability and team performance. *Small Group Research*, 32(5), 507-532.
- Devine, D.J. (2002). A review and integration of classification systems relevant to teams in organizations. *Group Dynamics: Theory, Research and Practice*. 6, 291-310.
- Dionne, S. D., Yammarino, F. J., Atwater, L.E., Spangler, W. D. (2004). Transformational Leadership and Team Performance. *Journal of Organizational Change Management*, Vol. 17, No. 2, pp. 177-193.
- Dulewicz, V., & Higgs, M. (2005). Assessing leadership styles and organisational context. *Journal of Managerial Psychology*, 20(2), 105-123.
- *Durham, C. C., Knight, D., & Locke, E. A. (1997). Effects of leader role, team-set goal difficulty, efficacy, and tactics on team effectiveness. *Organizational Behavior and Human Decision Processes*, 72(2), 203–231.
- * Dusig M. S.(1999). *Enhancing Team Confidence: Collective Efficacy as a Mediator of the Relationship Between Team Leadership Style and Team Outcomes*. (Doctoral Dissertation, Tulane University).
- *Dyett, V. (2011). *Roles and characteristics of the project manager in achieving success across the project life cycle*. (Doctoral Dissertation/Lynn University).
- *Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 4, 350–383.
- *Edmondson, A. C. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. *Journal of Management Studies*, 40(6), 1419–1452.
- *Ehrhardt, K., Miller, J. S., Freeman, S. J., & Hom, P. W. (2014). Examining Project Commitment in Cross-Functional Teams: Antecedents and Relationship with Team Performance. *Journal of Business and Psychology*, 29(3), 443-461.
- * Eisenberger, R., Wang, Z., Mesdaghinia, S., Wu, H., & Wickham, R. (2013 April). *Perceived follower*

* References marked with an asterisk indicate studies included in the meta-analysis.

- support: *Contributions to supportive supervision and workgroup outcomes*. Poster presented at Society for Industrial and Organizational Psychology, Houston, TX.
- *Faraj, S., & Sambamurthy, V. (2006). Leadership of information systems development projects. *Engineering Management, IEEE Transactions on*, 53(2), 238-249.
- *Feyerherm, A. E., & Rice, C. L. (2002). Emotional intelligence and team performance: The good, the bad and the ugly. *The International Journal of Organizational Analysis*, 10(4), 343-362.
- Fleishman, E. A., Mumford, M. D., Zaccaro, S. J., Levin, K. Y., Korotkin, A. L., & Hein, M. B. (1991). Taxonomic efforts in the description of leader behavior: A synthesis and functional interpretation. *Leadership Quarterly*, 4, 245-287.
- *Flood, P. C., Hannan, E., Smith, K. G., Turner, T., West, M. A., & Dawson, J. (2000). Chief executive leadership style, consensus decision making, and top management team effectiveness. *European Journal of Work and Organizational Psychology*, 9(3), 401-420.
- Goodwin, V. L., Wofford, J.C., Whittington, L.J. (2001). A Theoretical and Empirical Extension to the Transformational Leadership Construct. *Journal of Organizational Behavior*, Vol. 22, No. 7. pp. 759-774.
- *Graham, K. A. (2015). *Do leaders' hierarchical perceptions matter? A social dominance theory perspective of empowering leadership, abusive supervision, and team performance* (Doctoral dissertation, Drexel University).
- Gully, S. M., Incalcaterra, K. A., Joshi, A., & Beaubien, J. M. (2002). A meta-analysis of team-efficacy, potency, and performance: interdependence and level of analysis as moderators of observed relationships. *Journal of Applied Psychology*, 87(5), 819.
- *Gundersen, G., Hellesøy, B. T., & Raeder, S. (2012). Leading International Project Teams The Effectiveness of Transformational Leadership in Dynamic Work Environments. *Journal of Leadership & Organizational Studies*, 19(1), 46-57.
- *Hagen, M., & Park, S. (2013). Ambiguity acceptance as a function of project management: A new critical success factor. *Project Management Journal*, 44(2), 52-66.
- Harms, P. D., & Crede, M. (2010). Emotional intelligence and transformational and transactional leadership: A meta-analysis. *Journal of Leadership & Organizational Studies*, 17, 5-17.
- *Harris, T. B. (2012). *The functionality of focus: An investigation into the interactive effects of leader focus and task interdependence* (Doctoral dissertation, Texas A&M University).
- *Higgins, S. E., & Routhieaux, R. L. (1999). A multiple-level analysis of hospital team effectiveness. *Health Care Supervisor*, 17(4), 1-13.
- *Hirst, G., Mann, L., Bain, P., Pirola-Merlo, A., & Richver, A. (2004). Learning to lead: The development and testing of a model of leadership learning. *The Leadership Quarterly*, 15, 311-327.
- Hui, C. H., Chiu, W. C. K., Yu, P. L. H., Cheng, K. and Tse, H. H. M. (2007), The effects of service climate and the effective leadership behaviour of supervisors on frontline employee service quality: A multi-level analysis. *Journal of Occupational and Organizational Psychology*, 80: 151-172.
doi: 10.1348/096317905X89391.
- Hülsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: a comprehensive meta-analysis spanning three decades of research. *Journal of Applied psychology*, 94(5), 1128.
- *Hur, Y., van den Berg, P. T., & Wilderom, C. P. (2011). Transformational leadership as a mediator between emotional intelligence and team outcomes. *The Leadership Quarterly*, 22(4), 591-603.
- Judge, T. A., Piccolo, R. F., & Ilies, R. (2004). The forgotten ones? The validity of consideration and initiating structure in leadership research. *Journal of applied psychology*, 89(1), 36.
- *Kahai, S. S., Sosik, J. J., & Avolio, B. J. (1997). Effects of leadership style and problem structure on work group process and outcomes in an electronic meeting system environment. *Personnel Psychology*, 50, 121-146.
- *Kearney, E. (2008). Age differences between leader and followers as a moderator of the relationship between transformational leadership and team performance. *Journal of Occupational and Organizational Psychology*, 81(4), 803-811.
- *Kearney, E., & Gebert, D. (2009). Managing diversity and enhancing team outcomes: the promise of transformational leadership. *Journal of applied psychology*, 94(1), 77.
- *Keller, R. T. (1992). Transformational leadership and the performance of research and development project groups. *Journal of Management*, 18(3), 489-501.
- *Keller, R. T. (2006). Transformational leadership, initiating structure, and substitutes for leadership: a longitudinal study of research and development project team performance. *Journal of Applied Psychology*, 91(1), 202.
- *Kim, Y., Min, B., & Cha, J. (1999). The roles of R&D team leaders in Korea: A contingent approach. *R&D Management*, 29(2), 153-165.

- * Kirkman, B. L., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42(1), 58–74.
- Klein, K. J., Dansereau, F., & Hall, R. J. (1994). Levels issues in theory development, data collection, and analysis. *Academy of Management Review*, 19(2), 195-229.
- *Klein, K. J., Knight, A. P., Ziegert, J. C., Lim, B. C., & Saltz, J. L. (2011). When team members' values differ: The moderating role of team leadership. *Organizational Behavior and Human Decision Processes*, 114(1), 25-36.
- * Kline, T. J. B. (2003). The psychometric properties of scales that assess market orientation and team leadership skills: A preliminary study. *International Journal of testing*, 3(4), 321–332.
- *Kolb, J. A. (1992). Leadership of creative teams. *The Journal of Creative Behavior*, 26(1), 1–9.
- Komaki, J. L., Desselles, M. L., & Bowman, E. D. (1989). Definitely not a breeze: Extending an operant model of effective supervision to teams. *Journal of Applied Psychology*, 74(3), 522–529
- Kozlowski, S. W. J., Chao, G. T. & Mak, S. (2016). Team-centric leadership: An integrative review. *Annual Review of Organizational Psychology and Organizational Behavior*, 3.
- Kuhnert, K.W, Lewis, P. (Oct. 1987). Transactional and Transformational Leadership: A Constructive / Developmental Analysis. *The Academy of Management Review*, Vol. 12, No. 4, pp. 648-657.
- *Lorinkova, N. M., Pearsall, M. J., & Sims, H. P. (2013). Examining the differential longitudinal performance of directive versus empowering leadership in teams. *Academy of Management Journal*, 56(2), 573-596.
- Lam, S. K., & Schaubroeck, J. (2000). A field experiment testing frontline opinion leaders as change agents. *Journal of Applied Psychology*, 85, 987–995.
- *Lee, P. K., Cheng, T. E., Yeung, A. C., & Lai, K. H. (2011). An empirical study of transformational leadership, team performance and service quality in retail banks. *Omega*, 39(6), 690-701.
- *Lee, J., Lee, H., & Park, J. G. (2014). Exploring the impact of empowering leadership on knowledge sharing, absorptive capacity and team performance in IT service. *Information Technology & People*, 27(3), 366-386.
- *Lim, B., & Ployhart, R. E. (2004). Transformational leadership: Relations to the five-factor model and team performance in typical and maximum contexts. *Journal of Applied Psychology*, 89(4), 610–621.
- *Liu, M. L., Liu, N. T., Ding, C. G., & Lin, C. P. (2015). Exploring team performance in high-tech industries: Future trends of building up teamwork. *Technological Forecasting and Social Change*, 91, 295-310.
- MacKenzie, S. B., Podsakoff, P. M., & Rich, G. A. (2001). Transformational and transactional leadership and salesperson performance. *Journal of the Academy of Marketing Science*, 29, 115–134.
- Mayer, J. D., Salovey, P., & Caruso, D. R. (1997). *Emotional intelligence test*. Needham, MA: Virtual Knowledge.
- * Mazur, A., Pisarski, A., Chang, A., & Ashkanasy, N. M. (2014). Rating defence major project success: the role of personal attributes and stakeholder relationships. *International Journal of Project Management*, 32(6), 944-957.
- * McDonough, E. F., & Barczak, G. (1991). Speeding up new product development: The effects of leadership style and source of technology. *Journal of Product Innovation Management*, 8, 203–211.
- Michaelson, L. K. (1973). Leader orientation, leader behavior, group effectiveness and situational favorability: An empirical extension of the contingency model. *Organizational Behavior and Human Performance*, 9, 226–245.
- * Mitchell, R., Boyle, B., Parker, V., Giles, M., Chiang, V., & Joyce, P. (2015). Managing Inclusiveness and Diversity in Teams: How Leader Inclusiveness Affects Performance through Status and Team Identity. *Human Resource Management*, 54(2), 217-239.
- *Muller, R., Gerdali, J., & Turner, J. R. (2012). Relationships between leadership and success in different types of project complexities. *Engineering Management, IEEE Transactions on*, 59(1), 77-90.
- Miles, A. (2014). *An Examination of the Relationship Between Perceived Leadership Behaviors, Perceived Team Cohesion and Team Performance* (Doctoral Dissertation/Kennesaw State University).
- Morgeson, F. P., DeRue, D. S., & Karam, E. P. (2010). Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of Management*, 36,1, 5-39.
- *Müller, R., & Turner, J. R. (2007). Matching the project manager's leadership style to project type. *International journal of project management*, 25(1), 21-32.
- *Nauman, S., Khan, A. M., & Ehsan, N. (2010). Patterns of empowerment and leadership style in project environment. *International Journal of Project Management*, 28(7), 638-649.
- *Nealey, S. M., & Blood, M. R. (1968). Leadership performance of nursing supervisors at two organizational levels. *Journal of Applied Psychology*, 52(5), 414–422.
- *Nohe, C., Michaelis, B., Menges, J. I., Zhang, Z., & Sonntag, K. (2013). Charisma and organizational change: A multilevel study of perceived charisma, commitment to change, and team performance. *The Leadership Quarterly*, 24(2), 378-389.
- *O'Donnell, J. G. (2010). *A study of the relationships among project managers' leadership practices, project complexity, and project success* (Doctoral dissertation, Argosy University/Seattle).

- *Oh, K., Kim, Y., & Lee, J. (1991). An empirical study of communication patterns, leadership styles and subordinate satisfaction in R&D project teams in Korea. *Journal of Engineering and Technology Management*, 8, 15–35.
- *Oshinubi, O. O. (2007). *The influence of project managers' leadership styles on project team performance in the construction industry* (Doctoral dissertation, University of Phoenix).
- Ostroff, C., & Harrison, D. A. (1999). Meta-analysis, level of analysis, and best estimates of population correlations: Cautions for interpreting metaanalytic results in organizational behavior. *Journal of Applied Psychology*, 84, 260–270.
- *Owens, B., & Hekman, D. R. (2015). How does leader humility influence team performance? Exploring the mechanisms of contagion and collective promotion focus. *Academy of Management Journal-amj* 2013.
- *Özaralli, N. (2003). Effects of transformational leadership on empowerment and team effectiveness. *Leadership & Organization Development Journal*, 24(6), 335-344.
- *Prabhaker, G. (2005). An Empirical Study Reflecting the Importance of Transformational Leadership on Project Success Across Twenty-Eight Nations. *Project Management Journal*, 36(4), 53-60.
- *Pirola-Merlo, A., Hartel, C., Mann, L., & Hirst, G. (2002). How leaders influence the impact of affective events on team climate and performance in R&D teams. *The Leadership Quarterly*, 13, 561–581.
- *Pratt, J., & Jiambalvo, J. (1981). Relationships between leader behaviors and audit team performance. *Accounting, Organizations and Society*, 6(2), 133–142.
- Rosopa, P. J., Schaffer, M. M., & Schroeder, A. N. (2013). Managing heteroscedasticity in general linear models. *Psychological Methods*, 18, 335-351. doi:10.1037/a0032553
- Sackett, P. R., Harris, M. M., & Orr, J. M. (1986). On seeking moderator variables in the meta-analysis of correlational data: A Monte Carlo investigation of statistical power and resistance to Type I error. *Journal of Applied Psychology*, 71(2), 302.
- *San Lam, C., & O'Higgins, E. (2015). To Examine the Influence of Emotional Intelligence on Team Outcomes via the Mediating Mechanism of Transformational Leadership. *Management and Organizational Studies*, 2(1), p120.
- Saavedra, R., Earley, P. C., & Van Dyne, L. (1993). Complex interdependence in task-performing groups. *Journal of Applied Psychology*, 1, 61–72.
- Savelsbergh, C. M., Poell, R. F., & van der Heijden, B. I. (2015). Does team stability mediate the relationship between leadership and team learning? An empirical study among Dutch project teams. *International journal of project management*, 33(2), 406-418.
- *Schaubroeck, J., Lam, S. S., & Peng, A. C. (2011). Cognition-based and affect-based trust as mediators of leader behavior influences on team performance. *Journal of Applied Psychology*, 96(4), 863.
- Schmidt, F.L., & Le, H. (2014). *Software for the Hunter-Schmidt meta-analysis methods*. Version 2.0. University of Iowa, Department of Management & Organizations, Iowa City, IA 52242.
- Schmidt, F. L., & Hunter, J. E. (2015). *Methods of Meta-Analysis: correcting error and bias in research findings*. 3rd Edition Sage.
- *Shea, G. P., & Guzzo, R. A. (1987a). Groups as human resources. In K. M. Rowland & G. R. Ferris (Eds.), *Research in personnel and human resources management* (Vol. 5, pp. 323– 356). Greenwich, CT: JAI Press.
- Sivasubramaniam, N., Murry, W. D., Avolio, B. J., & Jung, D. I. (2002). A longitudinal model of the effects of team leadership and group potency on group performance. *Group & Organization Management*, 27(1), 66-96.
- *Somech, A. (2006). The effects of leadership style and team process on performance and innovation in functionally heterogeneous teams. *Journal of management*, 32(1), 132-157.
- * Song, M., & Noh, J. (2006). Best new product development and management practices in the Korean high-tech industry. *Industrial Marketing Management*, 35(3), 262-278.
- * Sosik, J. J. (1997). Effects of transformational leadership and anonymity on idea generation in computer-mediated groups. *Group & Organization Management*, 22(4), 460–487.
- *Sosik, J. J., Avolio, B. J., & Kahai, S. S. (1997). Effects of leadership style and anonymity on group potency and effectiveness in a group decision support system environment. *Journal of Applied Psychology*, 82(1), 89–103.
- *Spangler, W. D., & Braiotta Jr., L. (1990). Leadership and corporate audit committee effectiveness. *Group & Organization Studies*, 15(2), 134–157.
- *Srivastava, A., Bartol, K. M., & Locke, E. A. (2006). Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. *Academy of management journal*, 49(6), 1239-1251.
- Steel, P. D., & Kammeyer-Mueller, J. D. (2002). Comparing meta-analytic moderator estimation techniques under realistic conditions. *Journal of Applied Psychology*, 87, 96-111. doi:10.1037//0021-9010.87.1.96

- Stewart, G. L. (2006). A meta-analytic review of relationships between team design features and team performance. *Journal of management*, 32(1), 29-55.
- Stoker, J. I. (2008). Effects of team tenure and leadership in self-managing teams. *Personnel review*, 37(5), 564-582.
- *Stoker, J. I., Looise, J. C., Fisscher, O. A. M., & de Jong, R. D. (2001). Leadership and innovation: Relations between leadership, individual characteristics and the functioning of R&D teams. *International Journal of Human Resource Management*, 12(7), 1141-1151.
- Sundstrom, E., M. McIntyre, T. Halfhill, and H. Richards. 2000. Work groups: From the Hawthorne studies to work teams of the 1990s and beyond. *Group Dynamics: Theory, Research and Practice* 4 (1): 44-67.
- *Taggar, S., & Seijts, G. H. (2003). Leader and staff role efficacy as antecedents of collective efficacy and team performance. *Human Performance*, 16, 131-156.
- *Tesluk, P. E., & Mathieu, J. E. (1999). Overcoming roadblocks to effectiveness: Incorporating management of performance barriers into models of work group effectiveness. *Journal of Applied Psychology*, 84(2), 200-217.
- Thamhain, H. J. (2004). Linkages of project environment to performance: lessons for team leaderships. *International Journal of Project Management*, 22 (7), pp. 533-544.
- * Thomas, D., & Bendoly, E. (2009). Limits to effective leadership style and tactics in critical incident interventions. *Project Management Journal*, 40(2), 70-80.
- Turner, J. R., & Müller, R. (2003). On the nature of the project as a temporary organization. *International Journal of Project Management*, 21(1), 1-8.
- Tyssen, A.K. , Wald, A. and Heidenreich, S. (2014), Leadership in the context of temporary organizations: a study on the effects of transactional and transformational leadership on followers' commitment in projects, *Journal of Leadership and Organizational Studies*, 21(4), pp. 376-393.
- Van Knippenberg, D., & Sitkin, S. B. (2013). A critical assessment of charismatic—transformational leadership research: Back to the drawing board? *Academy of Management Annals*, 7, 1-60.
- * Wageman, R. (2001). How leaders foster self-managing team effectiveness: Design choices versus hands-on coaching. *Organization Science*, 12(5), 559-577.
- *Waldman, D. A., & Atwater, L. E. (1994). The nature of effective leadership and championing processes at different levels in a R&D hierarchy. *The Journal of High Technology Management Research*, 5(2), 233-245.
- * Walumbwa, F. O., Morrison, E. W., & Christensen, A. L. (2012). Ethical leadership and group in-role performance: The mediating roles of group conscientiousness and group voice. *The Leadership Quarterly*, 23(5), 953-964.
- *Wang, E., Chou, H. W., & Jiang, J. (2005). The impacts of charismatic leadership style on team cohesiveness and overall performance during ERP implementation. *International Journal of Project Management*, 23(3), 173-180.
- * Watson, W. E., Johnson, L., & Zgourides, G. D. (2002). The influence of ethnic diversity on leadership, group process, and performance: An examination of learning teams. *International Journal of Intercultural Relations*, 26, 1-16.
- *Weer, C. H., DiRenzo, M. S., & Shipper, F. M. (2015). A Holistic View of Employee Coaching Longitudinal Investigation of the Impact of Facilitative and Pressure-Based Coaching on Team Effectiveness. *The Journal of Applied Behavioral Science*, 0021886315594007.
- *Wilderom, C. P., Hur, Y., Wiersma, U. J., Berg, P. T. V., & Lee, J. (2015). From manager's emotional intelligence to objective store performance: Through store cohesiveness and sales-directed employee behavior. *Journal of organizational behavior*, 36(6), 825-844.
- Wilson-Evered, E., Härtel, C. E. J., & Neale, M. (2001). A longitudinal study of work group innovation: The importance of transformational leadership and morale. *Advances in Health Care Management*, 2, 315-340
- *Yang, L. R., Wu, K. S., Wang, F. K., & Chin, P. C. (2012). Relationships among project manager's leadership style, team interaction and project performance in the Taiwanese server industry. *Quality & Quantity*, 46(1), 207-219.
- *Yang, L. R., Wu, K. S., & Huang, C. F. (2013). Validation of a model measuring the effect of a project manager's leadership style on project performance. *KSCE Journal of Civil Engineering*, 17(2), 271-280.
- Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team leadership. *The Leadership Quarterly*, 12, 451-483.
- *Zhang, X. A., Cao, Q., & Tjosvold, D. (2011). Linking transformational leadership and team performance: A conflict management approach. *Journal of Management Studies*, 48(7), 1586-1611.
- * Zhang, L., & Fan, W. (2013). Improving performance of construction projects: A project manager's emotional intelligence approach. *Engineering, Construction and Architectural Management*, 20(2), 195-207.