**Let's Be Clear: Explaining Purpose Clarity**

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**Abstract.** Many modern organizations tout that they seek to serve broader purpose. However, operational-level employees such as members of work teams in purpose-pursuing firms often lack understanding of what their firm's purpose is and how it matters for their work, despite that such understanding is essential to the success of purpose pursuit, strategy execution, and performance. The current research examines when and why members of a work team fail to have understanding of the meaning and importance of a firm's purpose, or purpose clarity, and how managers can promote purpose clarity. We theorize that team leaders' purpose communication is positively related to members' purpose clarity, while dissimilarity in visible characteristics between leaders and their team undermines it by leading the dissimilar leader to be viewed as less committed to the team. We further expect that purpose communication is particularly important in teams with a dissimilar leader, because leader purpose communication can alleviate unfavorable perceptions of the dissimilar leader. In two studies—a large-scale proprietary survey and a vignette experiment—we find support for our predictions. Our findings contribute to the literatures on corporate purpose, leadership, and the managerial theory of the firm.

*Keywords*: Corporate purpose, managerial theory of the firm, clarity, leader communication, team leader dissimilarity, commitment

Three decades ago, discussions about strategy research revealed a chasm between the view of firms' managers that was rooted in disembodied assumptions and another view that was inspired by practice. More specifically, Bartlett and Ghoshal (1993) questioned the simplification of human agency in strategy inspired by economic traditions, wherein individuals were seen as opportunistic and vile (Cyert and March 1963, Williamson 1975, Chandler 1990). Instead, drawing on Barnard (1938), Bartlett and Ghoshal argued in favor of a "managerial theory of the firm" whereby 1) a firm possesses a purpose hanging over and corralling specific and local goals and 2) employees clearly understand (or not) what the firm purpose is and how their collaboration imbues the firm with initiative, trust, and learning advantages (Bartlett and Ghoshal 1993). Subsequently, the insistence on firm purpose and the role of middle managers as core for strategic management research fell away from academic interest; however, the notion of purpose is everywhere nowadays, in practitioners' discourse and outlets, arousing scholars' attention anew.

Indeed, as profound trends question the role of corporations in society, an increasing number of firms have started articulating and publicizing that their purpose is about "making a difference in the world" (Henderson and Van den Steen 2015, Edmans 2020, George et al. 2021). Accordingly, in both academia and practice, discussions around the purpose of firms and managerial roles in the firms' pursuit of purpose have been rejuvenated, debating whether firms possess an economic advantage when overtly pursuing a stated purpose, that is, a statement that expresses the firm's reason for being and continuing in the long run—a statement that can be, but is not necessarily, prosocial in nature (Ernst & Young and Oxford University Saïd Business School 2016, Quinn and Thakor 2018, George et al. 2021, Durand, 2023). Emerging research suggests that corporate purpose can facilitate internal alignment and coordination, potentially putting the firm at an economic advantage over rivals (Henderson and Van den Steen, 2015, Henderson, 2021). Crucially, research further suggests that these strategic benefits stemming from a precisely stated purpose materialize to the extent that the purpose concerns not only firms' senior executives, but also the operational execution taking place at lower levels. That is, in an echo of Bartlett and Ghoshal (1993)'s managerial theory of the firm, for a firm's purpose to generate advantages,

employees must understand, endorse, and enact it (Gartenberg et al. 2019, van Knippenberg 2020).

Nevertheless, evidence shows that no matter how widely touted a firm's purpose is, many employees fail to understand or derive meaning from it (Stam et al. 2014, Gartenberg et al. 2019). In a large academic study of half a million survey responses, Gartenberg et al. (2019) demonstrated that even within the same firm, there is much variation in how clearly employees understand their firm's purpose, with senior executives possessing a clearer sense of their firm's purpose than others. Practitioners reach the same conclusion, with about three quarters of employees not able to clearly articulate their firm's purpose, leaving purpose as a concern primarily for top executives (Dhingra et al. 2020). Why, then, do operational level employees, such as members of work teams, lack understanding and support of their firm's purpose? And how can firms ensure adhesion to their purpose throughout the organization? Answers to these questions bear critical importance, considering that firm-level advantages of purpose require its widespread understanding and support within firms (Bartlett and Ghoshal 1993, Henderson and Van den Steen 2015, Gartenberg et al. 2019).

Therefore, the primary objective of this research is to identify when members of a work team might (not) understand the meaning and importance of a firm's purpose. Our focus is on purpose clarity, which we conceptualize as the extent to which employees understand the relevance of their firm's purpose to their own more concrete, day-to-day operations (c.f., Gartenberg et al. 2019). We suggest that levels of purpose clarity will vary across different teams within a firm. Drawing on the managerial theory of the firm, we then build on the insight that the dissemination and internalization of purpose hinge on middle management (Bartlett and Ghoshal 1993, Gartenberg et al. 2019, van Knippenberg 2020) and the capacity of team leaders to engage in purpose communication. Specifically, we propose that, as "information brokers and capability integrators" (Bartlett and Ghoshal 1993: 44), team leaders influence the purpose clarity of team members through the way they engage with their team regarding the firm's purpose (i.e., communicating the purpose and relating it to the team's objectives).

Furthermore, since the actual outcomes of team leader-member interactions are determined not simply by leaders' actions, but in consideration of with whom they are enacted (Bartlett and Ghoshal

1993), we suspect that leader purpose communication may be more important in certain contexts than in others. Informed by research on social identification in small groups (e.g., Turner et al. 1987, Ellemers et al. 2004, van Knippenberg 2011) and on organizational commitment (Rivera and Tilcsik 2016, Bode et al. 2022, Feldberg, 2022), we reason that team-leader dissimilarities, i.e., the differences between the apparent or observable characteristics of a team leader and the same characteristic represented in the team[1], will muddy team members' purpose clarity due to the perception that leaders lack commitment to the team. We further propose that leaders' purpose communication is particularly important in teams where there is a readily observable dissimilarity between the team and its leader because this sort of communication can alleviate the negative perception of a lower commitment of dissimilar leaders. Hence, we expect that when team leaders actively attempt to communicate the firm's purpose, their efforts will both directly enhance the teams' purpose clarity and indirectly so by alleviating the negative effect of team-leader dissimilarity on purpose clarity.

We report two studies that test these ideas. In Study 1, using a large-scale proprietary survey dataset (7,194 and 45,928 team- and individual-level observations, respectively), we find that leader purpose communication is positively associated with team members' purpose clarity. We also find that the positive association between leader purpose communication and team purpose clarity is stronger in teams with team-leader dissimilarity (in both gender and age). Our findings indicate that team-leader dissimilarity lowers team members' purpose clarity by 9 to 13% depending on model specifications, but when leaders' purpose communication is high, this negative relationship between team-leader dissimilarity and purpose clarity is cancelled out—or even flips. Study 2 describes a vignette experiment that explores individual-level foundations of the Study 1 findings, focusing on team-leader gender dissimilarity. In Study 2, we document again that purpose communication has positive effects on purpose clarity, team-leader dissimilarity has a negative effect on purpose clarity, and the effects of purpose

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[1] While we acknowledge that these characteristics can concern both ascribed characteristics (e.g., gender, age, and race) and acquired characteristics (e.g., educational and functional backgrounds), the present research empirically focuses on gender and age.

communication are stronger in the presence of team-leader gender dissimilarity. Furthermore, we find evidence that purpose communication alleviates the detrimental effects of team-leader gender dissimilarity on purpose clarity through its attenuation of the negative relationship between team-leader gender dissimilarity and perceived leader commitment.

In sum, our studies demonstrate the essential role of middle managers (i.e., team leaders) in firms' pursuit of purpose and identify when and where they will have to be particularly attentive in serving this role. In so doing, our work makes several contributions. First, we contribute to burgeoning research on corporate purpose by highlighting the socio-psychological pathway that links purpose statement to its actual reception by operational level employees, an often-bracketed step that is yet crucial for strategy implementation (Wooldridge et al. 2008). Second, our theory and findings provide nuance to extant knowledge on leading teams and improving employee commitment to work and to a firm's purpose, by underscoring that people in leadership positions who might face detrimental social categorization effects (due to gender and age differences) can offset such disadvantages through purpose communication. Finally, this paper participates in rejuvenating a forgotten but crucial agenda for strategy research and, in particular, the managerial theory of the firm (Bartlett and Ghoshal 1993, Ghoshal and Bartlett 1994): the pivotal role of middle-management as an incarnated vector of superordinate firm dimensions (such as purpose) that matters for strategy execution and actual performance.

## Theory and Hypotheses

"Purpose" expresses a firm's reason for being and continuing in the long run. It is a particular "set of beliefs about the meaning of a firm's work beyond quantitative measures of financial performance" (Gartenberg et al. 2019, see also Henderson and Van den Steen 2015, Henderson 2021). Corporate purpose is suggested to have the potential to solve problems from which society suffers without creating new problems for other parties—hence leading to a legitimate profit (Mayer 2021). Scholars have further suggested that beneficial effects of purpose accrue primarily through mechanisms internal to the firms (Henderson and Van den Steen 2015, Quinn and Thakor 2018, Gulati, 2022): purpose provides internal stakeholders—current employees—with meaning and value, which in turn increases motivation and

internal coordination, and ultimately better operational functioning.

Yet, in reality, a purpose statement in itself does not directly engender operational advantage: not all employees in purpose-pursuing firms find the purpose meaningful, nor do they all support it (Bode et al. 2015, Bode et al. 2022). Furthermore, corporate purpose may or may not coincide with organizational leadership practices per se and the motivational profile of employees (van Knippenberg 2020, Durand and Huynh, 2022), which impedes the manifestation of the expected benefits. As such, a large-scale investigation by Gartenberg and her colleagues (2019) documents no direct association between a firm's purpose and its performance. Critically, however, Gartenberg et al. (2019) found that purpose is positively and significantly associated with financial performance when there is a greater clarity about it within the firm, suggesting that purpose clarity is a key condition for purpose to lead to strategic and operational benefits.

Accordingly, Gartenberg et al.'s (2019) findings call for an examination of what impedes or enhances purpose clarity, especially at lower levels of a firm, such as its operational workgroups and teams. Their findings also stress the importance of middle management—team leaders and their characteristics and behavior—which likely influences overall collective functioning, operational efficiency, and when aggregated across teams, strategy implementation and firm performance (Bartlett and Ghoshal 1993, Wooldridge et al. 2008).

Building on these insights, we focus specifically on purpose clarity held by employees in teams. We conceptualize purpose clarity as the team members' overall understanding of their firm's purpose and of how their daily tasks and responsibilities relate to that purpose. Purpose is generally formulated in abstract terms by top and senior executives (George et al. 2021), which implies that purpose-pursuing firms must expend an effort to tighten the link between abstract aspirations at the strategic directions level and concrete actions at the operational level. Indeed, evidence suggests that rank-and-file employees typically have lower levels of purpose clarity than senior managers and top executives: more than 80% of top executives can state their firm purpose, whereas less than 20% of the rest of employees do (Dhingra et al. 2020).

**Leader Purpose Communication and Purpose Clarity**

No matter how carefully and clearly established the purpose is at the firm's senior level, there is no guarantee that lower-level employees—who perform tasks essential for the firm to fulfill its purpose—understand it, because purpose is, by definition, abstract and loosely connected to the "local" actions where tasks and duties are carried out (Gartenberg et al. 2019, van Knippenberg 2020). Carton (2018) found that lower-level employees often fail to make a clear association between their routine responsibilities and the organization's purpose because the purpose is often too abstract to be comprehended and acted on concretely.

Middle managers such as team leaders play a key role in articulating, communicating, and diffusing abstract firm-level notions to lower-level employees and front-liners (Bartlett and Ghoshal 1993). As such, they can either aid or impede employees' understanding of a firm's purpose (Gartenberg et al. 2019, van Knippenberg 2020). Therefore, team leaders' efforts to communicate purpose to their teams and connect it to their tasks and activities—*leader purpose communication*—is crucial in helping members concretely understand the firm's ultimate objectives and imbue their work with meaning (c.f., Carton et al. 2014, Carton 2018).

It is important to note here that we view leader purpose communication as a leader's endeavor specifically geared toward disseminating a firm's purpose and helping peers and subordinates relate their daily responsibilities to the broader (and typically more abstract) purpose of the firm. Our emphasis on purpose has two crucial ramifications. For one, if members' purpose clarity increases through leaders' efforts to explain the relevance of their subordinates' everyday duties to their firm's purpose as we argue, then leader behaviors that are not directly associated with the firm's purpose, such as those giving orders to their teams and establishing roles and responsibilities within the teams, should be associated with members' purpose clarity not as strongly as leader purpose communication. In addition, if leader communication is indeed specifically about purpose, then it should be more strongly associated with proximal, purpose-related outcomes and members' purpose clarity in particular, than with other general

outcomes.[2]

Bartlett and Ghoshal (1993) underscored the social nature of organizations beyond the economic or political views taken by agency and behavioral theories of the firm. In so doing, they put center stage the role of middle managers as integrators of knowledge and conveyors of information and motivation. Depending on middle managers' communication of higher ends and purpose (and of the contextual characteristics of team members), Bartlett and Ghoshal count that people "act in the way they would as a member of a functional family or disciplined sporting team" (1993: 45). Echoing these expectations, leadership research demonstrates that when executives and leaders of firms do not actively embody and communicate a firm's purpose (Shamir et al. 1993, Waldman and Yammarino 1999, van Knippenberg and Stam 2014), employees fail to understand meaning of their work (Tsai and Ghoshal 1998, Stam et al. 2014, Carton 2018).

Therefore, we propose as a baseline that leader purpose communication helps connect members with a firm's purpose (c.f., Carton et al. 2014, Stam et al. 2014, Carton 2018). Team leaders' purpose communication facilitates team members' awareness of their firms' purpose and understanding of how their work contributes to its achievement (Shamir et al. 1993, Carton et al. 2014, Stam et al., 2014). Thus, when team leaders engage in purpose communication, team members will have higher purpose clarity. By contrast, when leaders do not actively engage in purpose communication, purpose clarity will be low because members may not clearly understand the relevance of their daily tasks to the firm's purpose.

*Hypothesis 1 (H1): Purpose clarity is positively related to team leaders' purpose communication.*

**Dissimilarity between Leader and Team and Purpose Clarity**

Team members in general might have difficulty understanding the firm's purpose in relation to their operational objectives, but purpose clarity might be even more difficult to cultivate in some teams than in others. Informed by research on social identification in small groups (e.g., Hogg et al. 1998, Ellemers et al. 2004, van Knippenberg 2011) and on organizational commitment (Rivera and Tilcsik 2016, Bode et al.

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[2] We will devote efforts to attest to purpose communication's specific effects on purpose clarity by running several different placebo tests.

2022, Feldberg 2022), we reason that dissimilarity between a team leader and the majority characteristics represented within his or her team may compromise the members' purpose clarity. Specifically, we expect that the difference between a team and its leader engenders members' doubts as to whether the leader is committed to ensuring the team's successful task accomplishment, which in turn impedes their comprehending of the firm's purpose.

When a social group is homogeneous, the attributes shared by members tend to form a salient frame of reference which they rely on in perceiving and evaluating others (Turner et al. 1987, Hogg 2001, van Knippenberg 2011). Specifically, members perceive others who are different from the group less favorably, for example, trusting them less, viewing them as less competent and capable, and expecting them to be less loyal and committed to the group than those who fit the group (Marques et al. 1988, Ellemers et al. 2004, Giessner and van Knippenberg 2008, Campbell and Hahl 2022). The same principle operates when team members perceive their leader: given a team's common characteristics, leaders who do not match the local identity well are evaluated more unfavorably than those who do (Hogg 2001, van Knippenberg 2011).

Of particular importance to the current discussion of purpose clarity is how team members perceive their leader's commitment to the team, or the extent to which they believe that their leader cares about and is dedicated to ensuring the team's successful task accomplishment. Evidence indicates that individuals view their leaders who are different from their group's common characteristics as less interested in devoting themselves to the group (Bielby and Bielby 1984, Hogg et al. 1998, De Cremer and Van Vugt 2002, Giessner and van Knippenberg 2008). Critically, when leaders do not show strong commitment to the team, members typically fail to find the meaning and significance of their work (Galperin et al. 2020, van Knippenberg 2020) because leaders are a lens through which employees perceive and make sense of their work and their firm (Tyler and Blader, 2003, Bass and Bass 2008).[3]

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[3] This leads for instance female leaders to face a task bind i.e., "a dilemma that managers experience as they try to disprove negative group stereotype by doubling down on one set of tasks at the expense of other essential tasks" (Feldberg 2022: 1049)

When leaders' dissimilar characteristics make team members perceive that their leader lacks interest in the team's performance, members infer that their (team's) work is less important and less relevant to the firm's goals. Consequently, when there is an apparent dissimilarity between leaders and their team, purpose clarity will be impaired.

For instance, a long-existing research tradition substantiates the idea that when a work team is homogeneous in terms of members' gender, an identity as well as associated norms and expectations emerge around the gender that comprises the majority of the team (e.g., Kanter 1977, Eagly et al. 1995, Hogg et al. 2006, Danbold and Bendersky 2020). As per our reasoning, this identity established in gender-homogeneous teams is then used to inform how members perceive their leader and subsequently influences purpose clarity: leaders who deviate from a homogeneous team (i.e., male leaders of female-majority teams and female leaders of male-majority teams) are evaluated as less committed to the team's successful task accomplishment, therefore hindering the development of members' purpose clarity. Similarly, when a team is largely composed of members in particular age group (e.g., members in their forties), such homogeneity can also create norms and expectations around age (McCann and Giles 2002, McDonald and Levy 2016). Critically, if a team leader does not belong to the same age group and is considerably older (e.g., in their sixties) or younger (e.g., in their twenties), such a difference engenders less favorable perceptions of the leader (e.g., Tsui and O'Reilly 1989, Pelled and Xin 2000). As a result, members will view a leader who is different from them as less committed to the team's success and will thus have lower purpose clarity. In other words, we contend that dissimilarity in between the team leader and team as a whole is negatively associated with members' purpose clarity.

*Hypothesis 2 (H2): Purpose clarity is negatively related to team-leader dissimilarity.*

Thus far, we have proposed that a team leader's effort to communicate purpose can increase purpose clarity (H1) and that an apparent dissimilarity between a team leader and the majority characteristics (e.g., gender and age) represented within the team can decrease purpose clarity (H2). We further argue that leader purpose communication is especially important—and effective—for purpose clarity in teams with

such team-leader dissimilarity.

Although team members would on average unfavorably perceive dissimilar leaders, their perceptions and evaluations are not fixed but subject to change, depending on available information about the leader (Turner et al. 1987, Bartlett and Ghoshal, 1993, Hogg 2001). If team members observe that their leader displays behaviors that defy their prior evaluations, they will revise their assessment of the leader accordingly. Consistent with this possibility, De Cremer and Van Vugt (2002) showed that in the absence of specific information about a leader, group members evaluate the leader less positively when the leader deviates from the group identity than when he or she conforms to it. However, such a difference in leader evaluation disappears when more information about the leader becomes available: when group members see that the leader makes personal sacrifices for the group's success, they view their leader equally positively, not differentially evaluating the leader because he or she deviates from the group identity.

Seen in this light, when leaders who are dissimilar to their team engage little in purpose communication, they will continue to be deemed not as committed to the team as similar leaders. As a result, purpose clarity will be lower on average in teams with dissimilar leaders. However, when leaders endeavor to communicate a firm's purpose, these efforts will contradict expectations of lower commitment to the team. Dissimilar leaders' time and effort to communicate the firm's purpose and explain how the team's tasks matter for the purpose help countervail the perception of a lower commitment to the team. Thus, members may keep or revise their assessment of the leader depending on the leader's engagement in purpose communication.

This line of reasoning suggests that while leader purpose communication is essential to enhance purpose clarity, it will be more effective in teams where there is an apparent dissimilarity between the team and their leader. Put differently, we predict that when a leader strives to communicate purpose to a team, the negative effect of team-leader dissimilarity on purpose clarity will be weakened because the negative association between leader dissimilarity and perceived commitment to the team will be weakened by purpose communication. Overall,

*Hypothesis 3 (H3): Leader purpose communication moderates the negative relationship between purpose clarity and team-leader dissimilarity, such that the relationship is weaker (less negative) when leader purpose communication is high than when it is low.*

Figure 1 Panel A synthesizes our research hypotheses.

*----------Insert Figure 1 about here----------*

## Overview of Studies

We report two studies that tested the above predictions. Using large-scale proprietary survey data of work teams in multiple firms, Study 1 examined how leader purpose communication and team-leader dissimilarity independently and jointly influence team members' purpose clarity. Study 2 sought to replicate the findings of Study 1 using an experimental vignette methodology, and more importantly, to examine the role of perceived leader commitment in explaining purpose clarity.

## Study 1

### Method

**Sample.** Following Gartenberg et al. (2019), we focused on the level of purpose clarity independent of the actual content of purpose. To this end, we constructed our sample for Study 1 to include a broad range of different-sized firms across various industries, using the database of a consulting firm operating worldwide. This database contained data from various teams and team leaders, which were collected as part of the consulting firm's leadership assessment and training programs. Members of these teams provided information on their understanding of their firm's purpose and its relevance to their daily tasks and responsibilities (purpose clarity), and information on their leader (purpose communication). Some teams participated in the program multiple times, enabling us to construct the unbalanced panel data. Our study used only teams where three or more members provided useable data, to avoid one or two members' responses being used as a representation of a team (Timmerman, 2005). This procedure left us with a total of 45,928 team member (individual) responses. We aggregated these individual responses to the team level, constructing a sample of 7,194 team-level observations (4,220 teams in 174 organizations, $M_{\text{team size}} = 6.38$, $SD_{\text{team size}} = 3.70$; see Online Appendices 1a through 1c for summary statistics).

**Measures.**

**Dependent Variable: Purpose Clarity.** Gartenberg et al. (2019), in highlighting the importance of purpose clarity in linking purpose and firm performance, suggested that purpose clarity refers to the extent to which employees understand the direction of the firm and its relevance to their daily activities. Similarly, van Knippenberg (2020) suggested that helping employees understand both the firm's direction and vision and the relevance of employees' day-to-day operations to achieving the firm's purpose are crucial to leading with purpose. In light of these ideas, we measured purpose clarity using three items (α = .80), by asking the extent to which team members perceive and understand the directions of their firm and their responsibilities in relation to the firm's objectives, using the team as a referent of measurement (Chan 1998). A sample item was: "People in my team understand exactly how the team's goals are related to the firm's goals" (see Online Appendix 1g for a list of all items). Each team-level observation was constructed based on ratings from, on average, six members. We aggregated the team-level purpose clarity variable by taking the average of individual member responses to the three-item measure of purpose clarity ($ICC(1) = .23$, $ICC(2) = .65$, $p < .001$, the median $r_{wg} = .83$).

**Independent Variable: Leader Purpose Communication.** We conceptualized purpose communication as leaders' engagement in communicating their firm's purpose and explaining its relevance to their team's everyday tasks and responsibilities. We measured leader purpose communication with questions asking team members to rate their leader' engagement in such communication (four items, α = .77). A sample item was "My leader often discusses how the direction and vision will benefit members of my team" (see Online Appendix 1g for full items). We also conceptualized leader purpose communication as leader behaviors enacted towards the team as a whole; therefore, team members would have similar assessments of leader purpose communication. Indeed, member responses showed adequate levels of agreement for aggregation, $ICC(1) = .23$, $ICC(2) = .66$, $p < .001$, the median $r_{wg} = .79$, so we averaged team members' ratings to create the leader purpose communication variable.

**Independent Variable: Team-leader Dissimilarity.** We examined the influences of two

characteristics that might yield apparent dissimilarity between a team and its leader: gender and age.

We created a dummy variable indicating *team-leader gender dissimilarity*, using data on the gender composition of a team and the gender of a team leader. We first identified a (fe)male-majority team, where (fe)male team members comprised 65 percent or more of a team, following Cohen et al. (1998) and Kanter (1997), which resulted in 3,325 teams comprising more than 65 percent of one gender (806 teams with 65% or more female members and 2,519 teams with 65% or more male members, out of 4,220 teams in our sample). For these 3,325 teams, we assigned 1 when the gender of a team leader differed from the majority gender comprising the team (i.e., team-leader gender dissimilarity). This procedure resulted in 657 teams with team-leader gender dissimilarity (360 female-majority teams led by a male leader and 297 male-majority teams led by a female leader; see Online Appendices 1d and 1e for the distribution of team gender composition and team leader gender details). Overall, these teams with team-leader gender dissimilarity represented 15.03% of our unbalanced panel data (a total of 1,081 observations, 584 observations from female-majority teams led by a male leader and 497 observations from male-majority teams led by a female leader).

We created another dummy variable for *team-leader age dissimilarity*. In our dataset, age was measured in five age categories (twenties, thirties, forties, fifties, sixties or older). We identified teams composed of 65 percent or more of one age category (e.g., teams with more than 65% of members in their thirties). A total of 1,823 teams out of 4,220 teams were identified as ones with one age category being the majority comprising the team age composition (285 teams with the majority twenties, 731 teams with the majority thirties, 523 teams with the majority forties, 275 teams with the majority fifties, and 9 teams with the majority sixties). For these teams, we assigned 1 to teams when the leader's age fell into a category two or more ages away from the age that comprised the team's majority (e.g., a leader is in his/her fifties or in sixties while his/her team comprises more than 65 percent members in their thirties). Doing so resulted in 214 teams assigned 1 for team-leader age dissimilarity (see Online Appendix 1f). We assigned the value 0 to teams composed of one majority age category and led by a leader in the same or adjacent age category and also to teams not represented by one majority age category. Our unbalanced

panel data used for analyses included 4.73% of teams with team-leader age dissimilarity (340 observations out of 7,194 total team-level observations).

**Control Variables.** We included several control variables in our analyses. Specifically, we controlled for teams' gender and age composition to examine whether team composition variables affect purpose clarity. In our analyses, we included leader, function (see Online Appendices 1a through 1f), and rating period fixed effects to control for unobserved heterogeneity between leaders, functions, and across rating periods.

**Analytic Strategy.** The Hausman test (Baltagi 1995) revealed that fixed-effects specifications were preferred to random-effects specifications, $\chi^2$ ($df = 9$) = 51.03, $p < .001$. Thus, we used fixed-effects unbalanced panel models to test our predictions.

**Results**

Panel A of Table 1 presents descriptive statistics and correlations among study variables.

---------------*Insert Table 1 about here*-----------

**Preliminary Analysis.** We first conducted confirmatory factor analyses (CFA) to test the empirical distinctiveness between the two measured variables (purpose clarity and leader purpose communication). Results showed that the proposed two-factor model fit the data well, $\chi^2(13) = 1135.23$, $p < .001$, CFI = .990, and significantly better than the alternative one-factor solution, $\chi^2(14) = 17911.10$, $p < .001$, CFI = .838, $\Delta\chi^2(\Delta df = 1) = 16775.87$, $p < .001$.

**Hypotheses Tests.** In H1, we predicted a positive association between leader purpose communication and purpose clarity. As shown in Model 1, Table 1, Panel B, leader purpose communication was positively and significantly associated with purpose clarity, $b = .54$, $SE = .02$, $p < .001$. This supports our H1.

We next tested our H2, in which we predicted that purpose clarity would be negatively related to team-leader dissimilarity. As shown in Model 1, Table 1, Panel B, when purpose clarity was regressed on a leader purpose communication and team-leader gender dissimilarity dummy with all control variables described above, purpose clarity was significantly and negatively associated with team-leader gender dissimilarity, $b = -.09$, $SE = .03$, $p = .005$. The team-leader age dissimilarity was also significantly and

negatively associated with purpose clarity, $b = -.11$, $SE = .05$, $p = .024$, Model 1, Table 1, Panel B. H2 was thus supported (see Online Appendix 1i for results of analyses where leader purpose communication and team-leader dissimilarity variables were entered stepwise).

H3 further predicted that the negative association between purpose clarity and team-leader dissimilarity (H2) would be weaker when leader purpose communication is high than when it is low. To test this prediction, we regressed purpose clarity on leader purpose communication, team-leader dissimilarity, and the interaction between these two variables, along with control variables. Results revealed a significant coefficient of leader purpose communication, $b = .48$, $SE = .02$, $p < .001$, and team-leader gender dissimilarity, $b = -.63$, $SE = .15$, $p < .001$. Yet, these significant main effects are qualified by a significant team-leader gender dissimilarity × purpose communication interaction, $b = .13$, $SE = .03$, $p < .001$. These results give support to H3 (see Figure 1, Panel B and Figure 2). Specifically, when leader purpose communication was low (1 $SD$ below the mean), the association between team-leader gender dissimilarity and purpose clarity was negative and significant, $b = -.12$, $SE = .02$, $p < .001$, but the same association was weaker when leader purpose communication was high (1 SD above the mean), $b = -.03$, $SE = .02$, $p = .241$.

Analyses using team-leader age dissimilarity revealed the identical pattern of results. When purpose clarity was regressed on leader purpose communication, team-leader age dissimilarity, and the interaction between the two, along with control variables, a purpose communication × team-leader age dissimilarity interaction was significant, $b = .27$, $SE = .05$, $p < .001$. Specifically, when leader purpose communication was low (1 $SD$ below the mean), team-leader age dissimilarity was negatively associated with purpose clarity, $b = -.19$, $SE = .03$, $p < .001$. However, this negative association was alleviated (in fact, reversed) when leader purpose communication was high (1 $SD$ above the mean), $b = .12$, $SE = .04$, $p = .004$ (Figure 1, Panel B, and Figure 3). The effects of team-leader gender and age dissimilarity being moderated by leader purpose communication remained robust regardless that the interaction terms were entered simultaneously (Model 2, Table 1, Panel B) or separately (Models 3 and 5, Online Appendix 1i), providing support for H3.

*---------------Insert Figures 2 and 3 about here-----------*

**Placebo Tests.** Results of placebo tests are presented in Models 3 through 6 in Table 1, Panel B. Online Appendix 1j Panels A and B display results of these placebo tests, entering leader purpose communication and team-leader dissimilarity stepwise and analyzing the two team-leader dissimilarity variables separately.

We have suggested that, to enhance members' purpose clarity, leaders must endeavor to articulate and explain a firm's purpose in relation to their members' daily responsibilities, going beyond simply delivering information or orders. If our reasoning is correct, then leader behaviors that can serve to clarify members' responsibilities yet not necessarily relevant to a firm's purpose should be related to members' purpose clarity but not as strongly as leader purpose communication, if related at all. To verify this, we examined the roles of directive leader behaviors. Directive leaders emphasize the achievement of goals and objectives, often being clear about what they expect from their subordinates (Kahai et al. 1997, Peterson 1997). We created the variable *directive leadership* using four items (e.g., "My leader expects people to carry out their instructions immediately," $\alpha = .63$, see Online Appendix 1g). When we regressed purpose clarity on directive leadership in place of purpose communication, the directive leadership was negatively and significantly associated with purpose clarity, $b = -.07$, $SE = .03$, $p = .007$. Furthermore, directive leadership did not moderate the relationship between purpose clarity and team-leader dissimilarity variables (see Models 3 and 4, Table 1, Panel B).

Furthermore, we proposed that leader purpose communication is an effort made in relation to a firm's purpose. Therefore, it should have a more proximal and stronger effect on purpose-related outcomes such as members' purpose clarity than on other more general member outcomes. To this end, we investigated the association between leader purpose communication and performance motivation— desirable member outcomes that might ultimately be affected by leader communication yet not as closely associated as purpose clarity. To examine this possibility, we created the variable *performance motivation* using two items ("Mediocre performance is not tolerated in the team," and "In this team, mediocre performance is not acceptable," $\alpha = .82$, see Online Appendix 1g). As shown in Models 5 of Table 1,

Panel B, purpose communication was positively and significantly related to *performance motivation*, *b* = .22, *SE* = .02, *p* < .001. However, the magnitude of the association between purpose communication and performance motivation is less than half of the magnitude of the association between purpose communication and purpose clarity.

Together, these results support our theory, suggesting that purpose clarity requires leader efforts *specifically* designed to connect the goals of the teams with the purpose of the firm (see Panels A and B of Online Appendices 1j for further details of these analyses).

Finally, we run a third placebo test. To demonstrate that the estimated correlations between purpose clarity and purpose communication are unlikely to be statistical noise, we run 1,000 placebo experiments where we randomly assign values for the leader purpose communication variable. We found that the estimated *t*-statistic from the original data (as shown in Table 1) is considerably more positive than all 1,000 placebo test estimates (Panel C, Online Appendix 1j).

**Robustness Checks.** We conducted several additional analyses to assess the robustness of the findings reported above (see Online Appendices 1k through 1p for the details). First, we sought to address potential common method issues arising from our use of independent and dependent variables that were both measured by the same team members. To do so, we applied a split-group method, analyzing the data from mutually exclusive random subgroups to create purpose clarity and purpose communication (i.e., purpose clarity created by responses from a random subset of a particular team and a leader purpose communication variable created by responses from the rest of the team). Results remained unchanged substantively when analyzed using this split-group method.

Second, we examined the association between leader purpose communication measured at *t* and purpose clarity measured at *t*+1 to address concerns about the potentially inflated relationships among variables if measured in the same survey. Results did not change substantively in these analyses.

Third, we used different cutoff values of team composition in creating the team-leader dissimilarity variables. For the team-leader gender dissimilarity variable, in our main analyses, we used 65% (or more) representation of (fe)male to identify (fe)male-majority teams and to create the team-

leader gender dissimilarity variable, based on Kanter (1977) and Cohen et al. (1998), who suggested that more than 65% of one gender comprising the team creates an unbalanced gender composition. We sought to explore whether alternative cutoff values would change the effects of team-leader gender dissimilarity on purpose clarity. We repeated the analyses with cutoff values of 55%, 60%, and 70%. Our results remained unchanged at 55% and 60%, but the association between purpose clarity and team-leader gender dissimilarity was not significant when the team had more than 70% of members of one gender. For the team-leader age dissimilarity variable, we repeated the above procedure (i.e., using 70%, 60%, and 55% as cutoff values to identify teams with the majority age group). The results reported above did not change at any of the three alternative cutoff values.

We also examined the robustness of the effects of team-leader age dissimilarity in two ways. First, we investigated the effects of leader purpose communication and team-leader age dissimilarity in teams where team-leader age dissimilarity might be especially pronounced: when a team leader is *younger* than the majority age group represented within the team (e.g., a team's majority age group is forties and a leader is in his/her twenties). Results remain unchanged when these particular cases of team-leader age dissimilarity were examined. Second, we conducted the analyses reported above by calculating the team-leader age dissimilarity variable less conservatively. Specifically, unlike our main analyses above wherein we coded team-leader age dissimilarity when a team leader was at least ten years younger or older than the team's majority age composition, we assigned the value 1 for team-leader age dissimilarity to teams with a leader whose age category did not fall into the same majority age category of the team. The results reported above did not change when team-leader age dissimilarity was operationalized this way.

In our analyses, we did not distinguish two different configurations of team-leader gender dissimilarity: female-majority teams led by a male leader and male-majority teams led by a female leader. We examined whether the findings differ across these two team-leader gender dissimilarity conditions, by regressing purpose clarity on leader gender (dummy coded, 1 = *male leader*, 0 = *female leader*), team gender composition (proportion of men within a team, ranging from 0 to 1), and the interaction between

these two variables. This analysis revealed that in male-majority teams (male proportion of 65% or higher), leader gender (1 = *male*, 0 = *female*) had a positive and significant association with purpose clarity, $b = .10$, $SE = .03$, $p = .003$. Similarly, in female-majority teams (female proportion of 65% or higher), leader gender (1 = *male*, 0 = *female*) had a negative and significant association with purpose clarity, $b = -.19$, $SE = .04$, $p < .001$. These results confirmed H2.

We also tested the association between purpose clarity and team-leader gender and age dissimilarity (H2) using samples created by a coarsened exact matching procedure, a non-parametric matching procedure to minimize the imbalance between comparison groups (in this study, leaders of different genders and the gender composition; Iacus et al. 2012). Specifically, we constructed a sample (2,162 matched observations, 1,081 team-leader gender dissimilarity observations, and 1,081 non-team-leader gender dissimilarity observations) that, in an effort to rule out potential unobserved leader- and team-level differences, comprised teams that were homogeneous with regard to characteristics that might influence team members' perceptions, such as leadership experience, geographic location, industry, functional area. We tested whether this matched sample differed in purpose clarity, by regressing purpose clarity on the matched team-leader gender (dis)similarity. In this analysis, the effect of treatment (i.e., team-leader gender dissimilarity) was negative and significant, $b = -.09$, $SE = .03$, $p = .006$, consistent with H2. We also created a matched sample (680 matched observations, 340 team-leader age dissimilarity observations, and 340 non-team-leader age dissimilarity observations) using the same matching procedure. We also found that this matched sample differed in purpose clarity, with the effect of treatment (i.e., team-leader age dissimilarity) being negative and significant, $b = -.22$, $SE = .06$, $p < .001$.

Lastly, we sought to rule out the possibility of an ecological fallacy, that is, our results being valid at the team level but differing at the individual level. We thus conducted analyses using unaggregated individual-level observations, which enabled us not only to examine the proposed effects of team-leader gender and age differences at the individual level, but also to account for gender and age differences between members and their leaders. We found the same patterns of results as were at the aggregated team-level analyses (see Online Appendix 1p).

**Discussion**

Study 1, using a large-scale proprietary dataset, provides support for our predictions. Specifically, we found that team members reported higher levels of purpose clarity as their leader communicated the firm's purpose more frequently. Furthermore, when team leaders differed from the team's majority gender and age composition, members collectively reported lower levels of purpose clarity. Importantly, we also found that the negative associations between purpose clarity and team-leader gender and age dissimilarities were weakened when leaders engage in high levels of purpose communication.

While these results are consistent with our predictions, Study 1 did not show the mechanism through which purpose communication and team-leader dissimilarity influence purpose clarity. In Study 2, focusing on team-leader gender dissimilarity, we measured and tested the mechanism behind the proposed effects—perceived leader commitment. Study 2 employed an experimental vignette methodology to establish as best as possible the causal interpretations of the effects of leader purpose communication and team-leader dissimilarity on purpose clarity. Lastly, in Study 2, we focused on individual-level perceptions since homogenous patterns exist between our variables at the individual- and team-level (Online Appendix 1p).

## Study 2

**Method**

**Participants, Design, and Procedure.** We recruited 451 working adults from Prolific Academic (Peer et al. 2017). Per our preregistration, we excluded 2 participants who failed to pass an attention check item and 66 participants who failed to correctly remember the manipulation, resulting in a final sample of 383 participants (152 male, 231 female, $M_{age}$ = 39.05, $SD_{age}$ = 10.86). [4,5] Participants had an average of 19 years of work experience ($SD$ = 10.93) and were employed in a wide range of industries, including information and technology, manufacturing, retail, finance, and healthcare. Participants were randomly assigned to one of the conditions created by a 2 (leader purpose communication: low vs. high) × 2 (team

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[4] https://osf.io/vj2h5/?view_only=75adfa19e6884cd5bc2358763538b5f9
[5] Results reported below remain unchanged when these 66 participants were included in the analyses.

gender composition: male-majority vs. female-majority) × 2 (leader gender: male vs. female) between-participants design.

Upon entering the website containing study materials, participants were first asked to imagine being an employee of a medium-sized firm. Participants were then presented with information about their team leader and their team, in which we varied levels of leader purpose communication, leader gender, and team gender composition (see below for details). Next, participants responded to items designed to measure perceptions of their leader's commitment to the team success and purpose clarity.

**Manipulations and Measures.**

**Dependent Variable: Purpose Clarity.** To measure purpose clarity, we adapted and used the same three items from Study 1, $\alpha = .93$ (see Appendix 2a for a list of all items).

**Manipulated Independent Variable: Team–leader Gender Dissimilarity.** Participants were randomly assigned to one of the two gender composition conditions. Specifically, participants in the male-majority (female-majority) team condition read that their team was mostly men (women). We then presented participants with information about the team leader. We manipulated the leader's gender by varying the leader's first name. Specifically, participants in the male (female) leader condition read:

> *Kevin (Cathy), a seasoned male (female) manger, leads the team. He (She) has a record of excellence and a profound experience in many different functions in the company.*

Thus, we created four different versions: two team-leader gender dissimilarity conditions and two team-leader gender similarity conditions (the male leader of the male-majority team and the female leader of the female-majority team). To facilitate interpretations, we collapsed the two team-leader dissimilarity (female leader of male-majority team and male leader of female-majority team) conditions and coded these two conditions as 1 for our team-leader dissimilarity variable. The two team-leader similarity (female leader of female-majority team and male leader of male-majority team) conditions were also collapsed and coded as -1 for our team-leader dissimilarity variable.[6]

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[6] We conducted our analyses without collapsing the team-leader gender (dis)similarity conditions and found the identical patterns of results. Please see Appendix 2b for results of these analyses.

**Manipulated Independent Variable: Leader Purpose Communication.** Drawing on Study 1's operationalization, we manipulated the level of purpose communication by providing different descriptions of how the team leader had led the team. Specifically, participants in the low purpose communication condition read the following:

*Kevin (Cathy) has made several important decisions since his (her) appointment as a team leader. For each decision he (she) has made, Kevin (Cathy) organized* <u>an informational meeting to announce the decision. He (She) let your team figure out</u> *how the decisions were in the best interests of both your team and the company. Indeed, he (she) often* <u>repeats that you and team members are expected to accept assigned objectives and the company's purpose</u>.

By contrast, participants in the high purpose communication condition read:

*Kevin (Cathy) has made several important decisions since his (her) appointment as a team leader. For each decision he (she) has made, Kevin (Cathy) organized* <u>meetings to present and discuss the decision. He (She) took time and effort to explain</u> *how the decisions were in the best interests of both your team and the company. Indeed, he (she) often* <u>discusses how the company's purpose benefits your team and how each member's objectives connect with it</u>.

**Perceived Leader Commitment to Team.** We theorized that leader purpose communication and team-leader dissimilarity would affect purpose clarity by influencing members' perception of leader—the leader's commitment to the team, in particular. In Study 2, we measured perceived leader commitment with three items adapted from Giessner and van Knippenberg (2008), see Online Appendix 2a for a list of all items. A sample item was "The team leader is very committed to the team," $\alpha = .81$.

**Manipulation Checks.** To ascertain whether our manipulation of a leader's purpose communication behavior was effective, we asked participants to respond to the four items that we used to measure leader purpose communication in Study 1, $\alpha = .84$ (see Online Appendix 2a for a list of all items).

**Analytic Strategy.** We tested H1, H2, and H3 using ordinary least squares regressions. We also examined whether perceived leader commitment mediates the relationship between team-leader gender dissimilarity and purpose clarity and whether this indirect relationship is moderated by purpose

communication, using 10,000 bootstrap samples and bootstrap estimates of indirect effects and their 95 percent confidence intervals (Preacher et al. 2007).

**Results**

Table 2 Panel A presents descriptive statistics and correlations among Study 2 variables.

---------------*Insert Table 2 about here*-----------

**Preliminary Analyses.** A *t*-test revealed that participants in the high leader purpose communication condition perceived their leader to be significantly higher in purpose communicating ($M = 5.89$, $SD = .75$) than participants in the low leader purpose communication condition ($M = 4.74$, $SD = 1.27$), $t(381) = 10.67$, $p < .001$, Cohen's $d = 1.091$. Our manipulation was thus effective.

We also conducted CFA to verify empirical distinctiveness between the two measured variables (perceived leader commitment and purpose clarity). Results revealed that the proposed two-factor model that distinguished purpose clarity from leader commitment fit the data well, $\chi^2$ (8) = 60.88, $p < .001$, CFI = .970, and significantly better than the alternative model that combined these two variables into one factor, $\chi^2$ (9) = 215.42, $p < .001$, CFI = .884, $\Delta\chi^2$ ($\Delta df = 1$) = 154.54, $p < .001$.

**Hypotheses Tests.** Participants' gender neither had a main effect on nor interacted with the manipulated variables to influence our measured variables; therefore, participants' gender is not discussed further.

We predicted that leader purpose communication would positively relate to purpose clarity (H1). As a test of H1, we regressed purpose clarity on leader purpose communication (contrast coded, 1 = *high purpose communication*, −1 = *low purpose communication*). This analysis revealed that purpose communication had a significant and positive effect on purpose clarity, $b = .44$, $SE = .05$, $p < .001$. H1 was thus supported (Model 3, Table 2, Panel B).

H2 predicted that purpose clarity would be lower when there was team-leader gender dissimilarity than when there was no such apparent dissimilarity. To test H2, we regressed purpose clarity on the team-leader gender dissimilarity variable (contrast coded, 1 = *team-leader gender dissimilarity*, −1 = *team-leader gender similarity*). This analysis revealed a significant and negative effect of team-leader gender dissimilarity, $b = -.13$, $SE = .05$, $p = .019$. Thus, H2 was also supported (Model 3, Table 2, Panel

B).

　　We further predicted that the negative effect of team-leader (gender) dissimilarity would be weaker when leader purpose communication was high than when it was low (H3). This hypothesis was tested by regressing purpose clarity on leader purpose communication (contrast coded), team-leader gender dissimilarity (contrast coded), and the interaction between these two variables. Analyses revealed significant effects of leader purpose communication, $b = .43$, $SE = .05$, $p < .001$, and team-leader gender dissimilarity, $b = -.12$, $SE = .05$, $p = .021$. Yet, these significant main effects were qualified by a significant purpose communication × team-leader gender dissimilarity interaction, $b = .13$, $SE = .05$, $p = .017$ (Model 4, Table 2, Panel B, and Figure 3). Simple effects tests further revealed that in the low leader purpose communication condition, the effect of team-leader gender dissimilarity was negative and significant, $b = -.25$, $SE = .07$, $p = .001$, whereas in the high leader purpose communication condition, the negative effect of team-leader dissimilarity was weaker (not significant), $b = .01$, $SE = .08$, $p = .948$. These results replicate the findings of Study 1 and provide support for H3.

---------------*Insert Figures 4 and 5 about here*-----------

　　Next, we examined whether leader purpose communication and team-leader dissimilarity affected purpose clarity because the leader was seen as less committed to the team. Our analysis on perceived leader commitment, regressed on leader purpose communication (contrast coded), team-leader gender dissimilarity (contrast coded), and the interaction between these two variables, revealed significant main effects of both purpose communication, $b = .35$, $SE = .04$, $p < .001$, and team-leader gender dissimilarity, $b = -.10$, $SE = .04$, $p = .020$, and a significant leader purpose communication × team-leader gender dissimilarity, $b = .13$, $SE = .04$, $p = .003$. In the low leader purpose communication condition, the effect of team-leader gender dissimilarity on perceived leader commitment was negative and significant, $b = -.24$, $SE = .06$, $p < .001$, whereas in the high leader purpose communication condition, the same effect was not significant, $b = .03$, $SE = .06$, $p = .626$ (see Model 2, Table 2, Panel B). These results are consistent with our argument that when leaders do not engage in purpose communication, leaders dissimilar to the team are seen as less committed than leaders similar to the team, but when leaders engage in purpose

communication, the difference in perceived leader commitment disappears.

Lastly, we examined whether the joint effects of leader purpose communication and team-leader dissimilarity on purpose clarity are mediated by perceived leader commitment. We conducted tests of the conditional indirect effects with 10,000 bootstrap samples using PROCESS Macro for R. This analysis revealed that, consistent with our expectations, in the high leader purpose communication condition, the indirect effect of team-leader dissimilarity on purpose clarity through purpose communication was negative, $b = -.21$, $SE = .06$, and its 95% confidence interval (CI) did not include zero [-.33, -.09]. However, the same indirect effect was positive, $b = .03$, $SE = .05$, and its 95% CI included zero [-.07, .12], an index of moderated mediation = .23, $SE = .08$, 95% CI [.08, .39]. These results once more provide support for our theory by providing evidence that leader purpose communication is particularly important in teams where members might have difficulty developing purpose clarity due to the apparent dissimilarity between the team and its leader.

**Discussion**

Study 2 replicated the findings of Study 1 using an experimental vignette methodology. Specifically, the results of Study 2 showed that (1) when the leader communicated purpose, members reported that they experienced higher levels of purpose clarity (H1), and (2) when the leader's gender differed from the majority gender represented within the team, members expected to experience lower levels of purpose clarity (H2). Again, as in Study 1, the negative effect of team-leader dissimilarity was more pronounced under the conditions of low levels or lack of leader purpose communication.

More importantly, Study 2 provides evidence for why leader purpose communication is more important in teams with team-leader dissimilarity: team members perceive their gender-dissimilar leaders to be less committed to the team. In particular, our findings indicate that leader purpose communication not only had a main effect on purpose clarity, but also weakened the negative effect of team-leader gender dissimilarity on perceived leader commitment. Thus, leader purpose communication can be an effective vehicle for leaders who might face challenges in leading demographically different subordinates.

**General Discussion**

In two studies using complementary methodologies, we find that team leaders' efforts to express and explain a firm's purpose is crucial for team members' purpose clarity. We also find that when a leader's observable characteristics, specifically gender and age, do not correspond to the majority characteristics represented in the team, members report lower levels of purpose clarity, due to perceived lack of leader commitment. Furthermore, our results demonstrate that leader purpose communication is especially effective for members of teams who may have unfavorable perceptions of their leader due to the observed dissimilarity of their leader; indeed, purpose communication is positively associated with perceived commitment and neutralizes the negative mediation of the dissimilarity-purpose clarity relationship (see Panel B of Figure 1).[7]

**Implications**

First, we contribute to burgeoning research on corporate purpose by theorizing about purpose clarity and identifying why it may not be ensured uniformly throughout a firm and how it can be promoted. Although extant research suggests that the strategic and economic benefits of a firm's purpose are predicated upon how widely the meaning, importance, and relevance of purpose is understood and endorsed within the firm, not all members of firms have such clarity (Gartenberg et al. 2019). Research has yet to systematically investigate the determinants of the clarity members have about their firm's purpose as a crucial determinant of strategy execution and firm performance. By focusing on purpose clarity at the operational levels within firms, where promoting purpose clarity is most imperative (Bartlett and Ghoshal 1993, Gartenberg et al. 2019), we propose and demonstrate the essential role of team leaders and their purpose communication: when leaders endeavor to express and explain the firm's purpose and its relationships to team members' tasks, their efforts pay off in increased purpose clarity. These results resonate with Gartenberg et al.'s (2019) finding that firm performance is positively associated with middle managers' purpose clarity—and not that of top executives. In other words, the current findings

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[7] It is even flipped in Study 1 ($b = .12$, $p = .003$), whereas in Study 2 we found a positive but far from significant effect ($b = .01$ and $p = .948$).

suggest that the firm's purpose needs to be conveyed and disseminated throughout the firm, and crucially at the team level, resonating with earlier attempts at promoting the fundamental influence of middle managers in strategy implementation (Woolridge et al. 2008).

As the outcomes of team leader-member interactions are contextual, purpose clarity depends also on the (dis)similarity between a team leader's and the team's characteristics. Informed by research on social identification and commitment in workgroups, we hypothesized and tested that members' perception of their leader's commitment was a mechanism that explained the effects of team leader dissimilarity on purpose clarity. Our findings indicate that, when present, team-leader dissimilarity can decrease purpose clarity by 10.3% and 11.9% (gender and age dissimilarity respectively, Study 1, Models 2 and 4) and 12.7% (Study 2, Model 3).

Our findings highlight the importance of team leaders' effort to communicate purpose, showing that leader purpose communication not only directly enhances purpose clarity, but also mitigates the negative effects of team-leader dissimilarity on how members perceive their leader and their firm's purpose. Critically, we found that both male and female leaders overseeing dissimilar teams might experience difficulties ensuring their members' purpose clarity and, more importantly, both male and female leaders can overcome the difficulties through engaging in purpose communication. These results are consequential not only for research on the benefits and shortcomings of corporate purpose within and outside firms, but also for practice. If leader purpose communication contributes to positive perceptions of leaders' commitment and thereby enhances subordinates' purpose clarity, then embodying and communicating a higher-level purpose can enhance dissimilar and minority leaders' effectiveness. While the literature discusses many challenges that traditionally underrepresented leaders (e.g., women, racial minorities) face in organizations and in professions (Rudman and Glick 1999, Brescoll et al. 2010, Danbold and Bendersky 2020), our analysis focused on perceived commitment (Rivera and Tilcsik 2016, Bode et al. 2022, Feldberg 2022) and found that male- and age-dissimilar leaders shared the same challenges. One could infer that managing teams that largely represent the opposite gender or a widely different age category might be equally challenging to both male/female and junior/senior leaders, albeit

the challenges that female and young leaders experience are more widespread, given that more functions and more firms continue to be dominated by men and more senior people.

Finally, this paper participates in rejuvenating a disremembered but crucial agenda for strategy research. What internal theory of strategy execution do we, strategy scholars, assume? We opened this paper with a reference to the managerial theory of the firm that Bartlett and Ghoshal sketched three decades ago. Nurtured by practice, they advocated for a theorizing that does not pose that "the human role in organizations is essentially passive and pathological" and moves away from "the denial of purpose and direction" and "the assumptions about shirking, opportunism, and inertia" (Bartlett and Ghoshal 1993, p. 43). By contrast, they placed at the core of strategy the social interactions at the team level and the pivotal role of middle-management as "the horizontal integrators of strategy and capabilities" (p. 44). We would like our study to reignite the interest of scholars in the neglected aspects of strategy execution and the critical influence of managers. The current interest in purpose from both practical and theoretical perspectives marks a *kairos* in this regard.

Our study echoes Bartlett and Ghoshal's emphasis on the importance of superordinate aims for a firm, that is, purpose. Taking purpose clarity as a crucial variable that underpins resource allocation, operational efficiency, and firm performance, we offer a model accounting for purpose clarity heterogeneity across teams. More specifically, this study illuminates how mid-level leaders can potentially overcome the challenges of managing teams whose demographic makeup is, from a practical standpoint, not in their favor. Dovetailing with earlier and recent theorizing about purpose with a social identification approach (Henderson and Van den Steen 2015, Blader et al. 2020), our research highlights that purpose should be built and communicated around shared expectations not only at the firm level, but also at the team level. When identity expectations are not shared, such as when the team's demographic composition and leader demographic characteristics are not in sync, firms might not be able to reap the benefits of establishing and pursuing a superordinate purpose. As such, some teams might need more managerial attention and effort than others, by clarifying and tightening the relevance of abstract purpose to concrete actions. Overall, purpose, to the extent that it is clearly understood by team members,

promotes behaviors that benefit corporate functioning: therefore, as stipulated by the managerial theory of the firm, purpose pursuit serves not only to manage the image that a firm conveys to external stakeholders (Henderson and Van den Steen 2015, George et al. 2021, Durand and Gouvard 2022), but also to guide the actions of its most critical stakeholders—its employees.

**Limitations and Future Research Directions**

It is worth mentioning the limitations of the present work, which might spur interesting and promising opportunities for further research. First, we have focused on only two visible characteristics—gender and age—that constitute team-leader dissimilarity. Yet, we acknowledge that the logic developed here may apply to other ascribed characteristics of a leader, including race, which are visible and difficult, if not impossible, to change, as well as acquired characteristics, such as educational background, expertise, and international experience. Future work will benefit from further exploring the influence of these additional factors in shaping employees' perceptions of their leader and their clarity about the firm's purpose.

Second, regarding our examination of team-leader gender dissimilarity, we focused on mixed majority-minority work teams, where one category comprised the majority of the team. However, mixed majority-minority work teams might be further differentiated into skewed (less than 15 percent of a particular gender) versus tilted (15 percent~35 percent of a particular gender) majority-minority work teams (Cohen et al. 1998), and these distinctions might have different implications for how leaders and corporate practices are perceived. In fact, in our sample, the teams were largely tilted majority-minority work teams. In skewed majority-minority work teams, however, it is possible that appointing a leader who shares the characteristics of the minority could have a signaling value and affect purpose clarity differently. Further research could offer additional insights into the distinct implications of other majority-minority proportions.

Furthermore, although we build on the finding that purpose clarity at operational levels of firms is a crucial mechanism linking purpose to firm performance, we have not directly tested this relationship. It is important to directly investigate the performance implications of purpose clarity, especially for internal performance metrics (e.g., operational efficiency, coordination) within and between teams.

Finally, as mentioned above, this article is agnostic about the nature and content of a firm's purpose. It could be profit-oriented or not. We suspect that the magnitude of the effects we found may vary according to what a firm's purpose conveys and, as such, the nature of a firm's purpose represents a fertile avenue for research, since team members may be more receptive to certain kinds of purpose dimensions depending, for instance, on their prosociality and any incentive systems that might reinforce or contradict what, on an everyday basis, the team leaders communicate and do.

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**Table 1.** Study 1 results

Panel A. Descriptive statistics and correlations among study variables

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Purpose Communication | 4.31 | .69 | | | | | |
| 2. Team-Leader Gender Dissimilarity | .15 | .36 | -.04 | | | | |
| 3. Team-Leader Age Dissimilarity | .05 | .21 | -.06 | .04 | | | |
| 4. Purpose Clarity | 4.77 | .68 | .63 | -.05 | -.06 | | |
| 5. Directive Leadership | 3.62 | .67 | -.08 | -.04 | .03 | .05 | |
| 6. Performance Motivation | 4.24 | .75 | .31 | .06 | .01 | .42 | .15 |

*Note.* $N = 7{,}194$ team-level observations. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0. $|r| > .03$, $p < .05$; $|r| > .04$, $p < .01$; $|r| > .05$, $p < .001$.

Panel B. Results of fixed effects regressions predicting purpose clarity

| Variable | Purpose Clarity | | | | Performance Motivation | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Purpose Communication(PC) | .54*** | .48*** | | | .22*** | .25*** |
| | (.02) | (.02) | | | (.02) | (.02) |
| Gender Dissimilarity(GD) | -.09** | -.63*** | -.12** | -.10 | .01 | .32 |
| | (.03) | (.15) | (.04) | (.19) | (.04) | (.17) |
| Age Dissimilarity(AD) | -.11* | -1.18*** | -.32*** | -.15 | .05 | .26 |
| | (.05) | (.21) | (.06) | (.26) | (.05) | (.24) |
| PC × GD | | .13*** | | | | -.07 |
| | | (.03) | | | | (.04) |
| PC × AD | | .27*** | | | | -.05 |
| | | (.05) | | | | (.06) |
| | | | | | | |
| Directive Leadership (DL) | | | -.07** | -.07* | | |
| | | | (.03) | (.03) | | |
| DL × GD | | | | -.01 | | |
| | | | | (.05) | | |
| DL × AD | | | | -.05 | | |
| | | | | (.07) | | |
| | | | | | | |
| Control Variables | Included | Included | Included | Included | Included | Included |
| Leader Fixed Effects | Included | Included | Included | Included | Included | Included |
| Year Fixed Effects | Included | Included | Included | Included | Included | Included |
| Function Fixed Effects | Included | Included | Included | Included | Included | Included |
| | | | | | | |
| $R^2$ (within) | .30 | .31 | .04 | .04 | .06 | .06 |
| *F*-value | 43.75 | 43.45 | 4.42 | 4.15 | 6.51 | 6.28 |

*Note.* $N = 7{,}194$. Standard errors are shown in parentheses. For team-leader dissimilarity variables, dissimilarity was coded 1 and the rest was coded 0. See Online Appendix 1i Models 1 through 5 for results of fixed effects regressions when the team-leader dissimilarity variables are entered separately.
* $p < .05$; ** $p < .01$; *** $p < .001$.

**Table 2.** Study 2 Results

Panel A. Descriptive statistics and correlations among study variables

| Variable | $M$ | $SD$ | 1 | 2 | 3 |
|---|---|---|---|---|---|
| 1. Leader Purpose Communication | -.02 | 1.00 | | | |
| 2. Team-leader Gender Dissimilarity | .04 | 1.00 | .02 | | |
| 3. Perceived Leader Commitment | 5.76 | .94 | .38 | -.10 | |
| 4. Purpose Clarity | 5.64 | 1.14 | .38 | -.10 | .72 |

*Note.* $N = 383$. For leader purpose communication, high leader purpose communication condition was coded 1, and low leader purpose communication condition was coded -1. Team-leader gender dissimilarity (a female-majority team with a male leader condition and a male-majority team with a female leader condition) was coded 1; team-leader gender similarity (a female-majority team with a female leader condition and a male-majority team and with a male leader condition) was coded -1.

Panel B. Results of regressions predicting leader commitment and purpose clarity

| Variable | Leader Commitment | | Purpose Clarity | | |
|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| Leader Purpose communication (PC) | .36*** | .35*** | .44*** | .43*** | .15*** |
| | (.04) | (.04) | (.05) | (.05) | (.04) |
| Team-Leader Gender Dissimilarity (Dissimilarity) | -.11* | -.10* | -.13* | -.12* | -.04 |
| | (.04) | (.04) | (.05) | (.05) | (.04) |
| PC × Dissimilarity | | .13** | | .13* | .02 |
| | | (.04) | | (.05) | (.04) |
| Leader Commitment | | | | | .81*** |
| | | | | | (.05) |
| $R^2$ | .15 | .17 | .16 | .17 | .53 |
| $F$-value | 34.80 | 26.78 | 35.28 | 25.75 | 108.50 |

*Note.* $N = 383$. Standard errors are shown in parentheses. For leader purpose communication, high leader purpose communication condition was coded 1, and low leader purpose communication condition was coded -1. Team-leader gender dissimilarity (a female-majority team with a male leader condition and a male-majority team with a female leader condition) was coded 1, and team–leader gender similarity (a female-majority team with a female leader condition and a male-majority team with a male leader condition) was coded -1.
\* $p < .05$; \*\* $p < .01$; \*\*\* $p < .001$.

**Figure 1.** Conceptual and Empirically Tested Models

Panel A. Theoretical Model
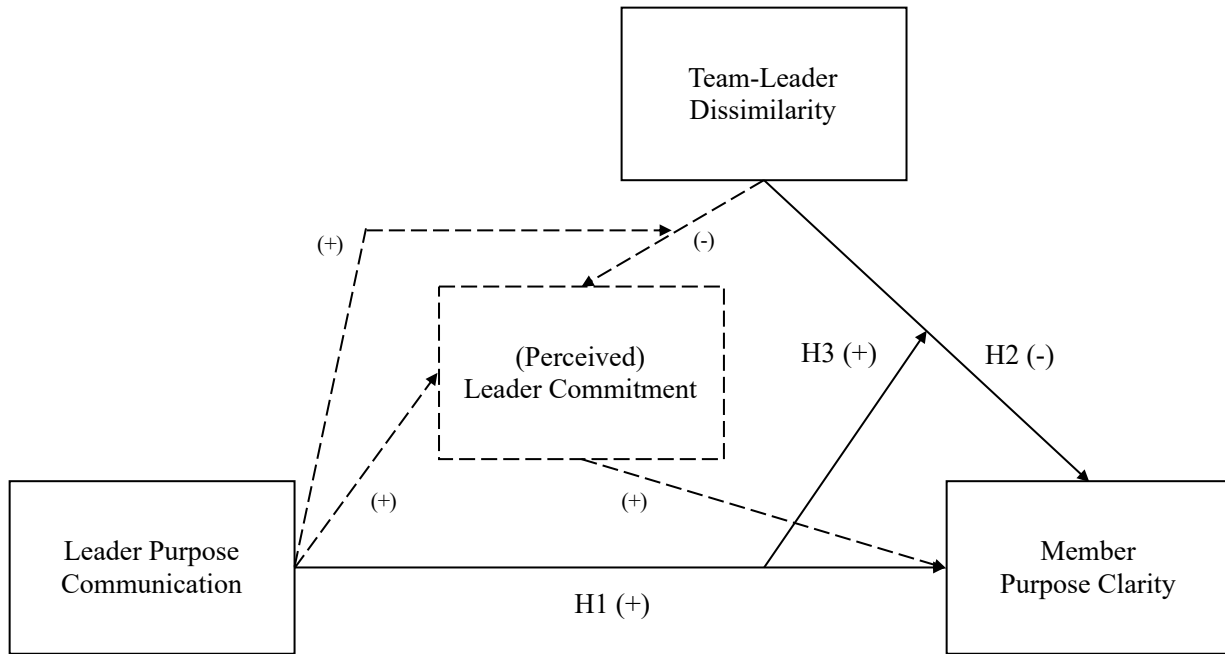


*Note.* Solid lines represent our three hypotheses. Dotted lines represent the full set of theorized relationships.

Panel B. Findings
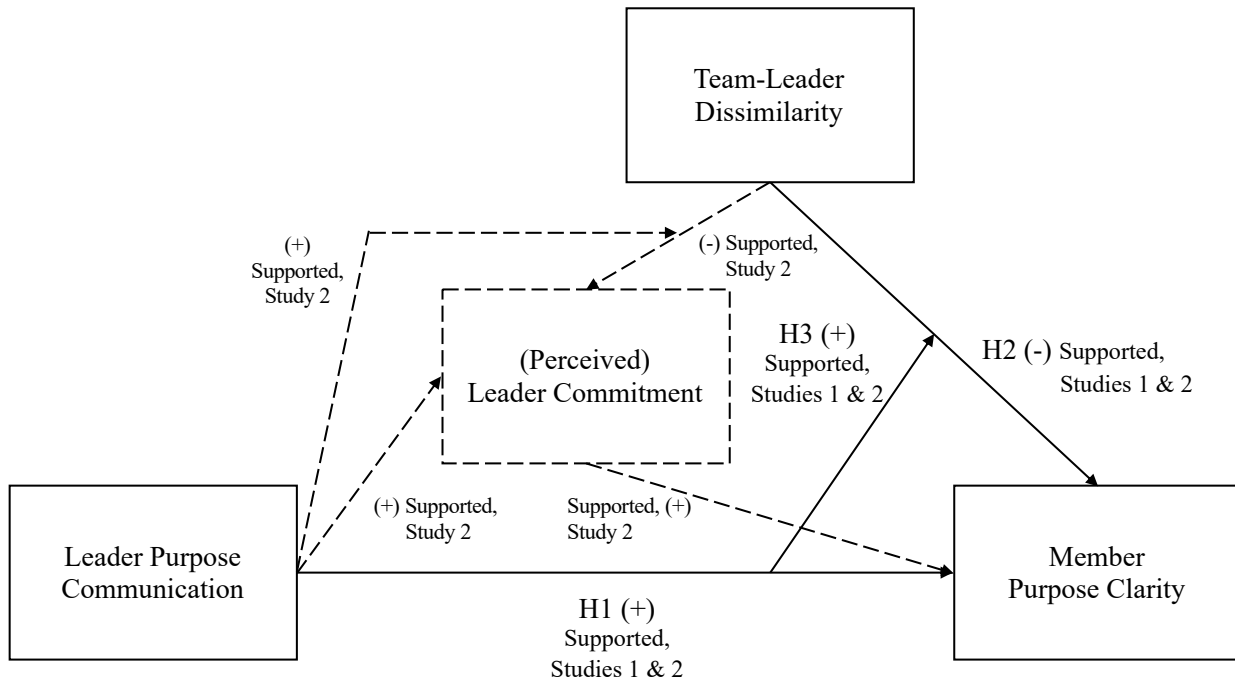
**Figure 2.** Interactive Effect of Leader Purpose Communication and Team-leader Gender Dissimilarity on Purpose Clarity (Study 1)
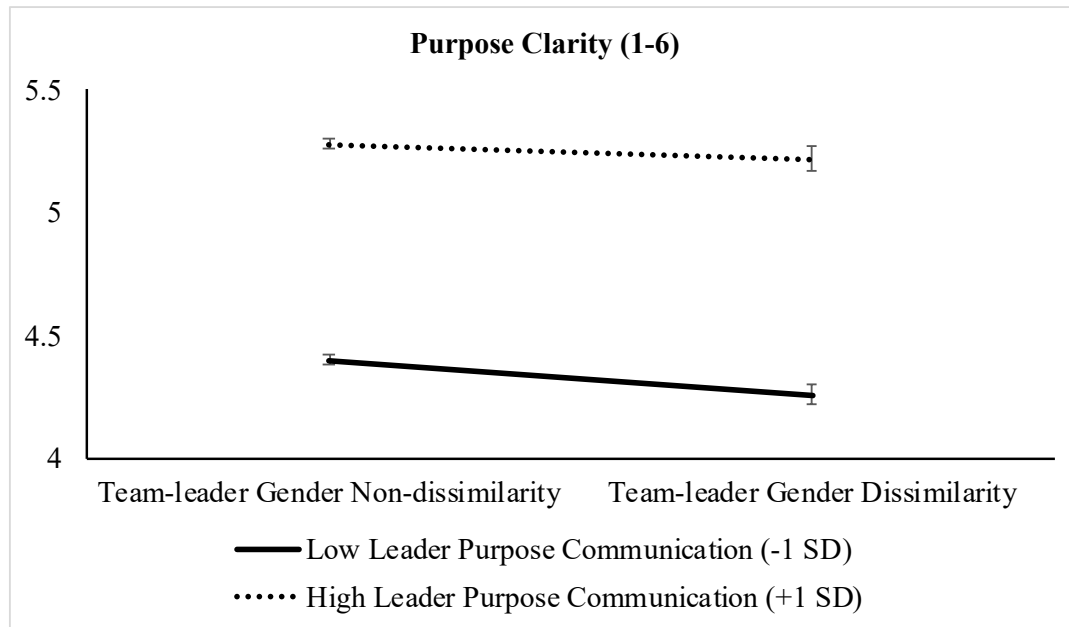


*Note*. Error bars represent standard errors. When leader purpose communication is low (1 *SD* below the mean), team-leader gender dissimilarity is negatively and significantly associated with purpose clarity ($p < .001$), whereas when leader purpose communication is high (1 *SD* above the mean), team-leader gender dissimilarity is not significantly associated with purpose clarity ($p = .247$).

**Figure 3.** Interactive Effect of Leader Purpose Communication and Team-leader Age Dissimilarity on Purpose Clarity (Study 1)
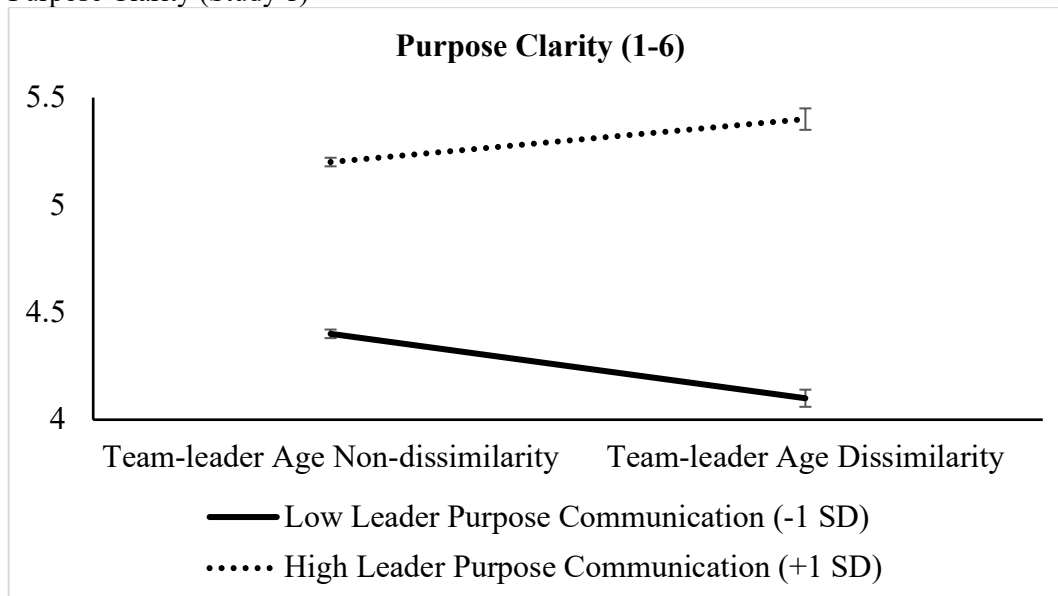


*Note*. Error bars represent standard errors. When leader purpose communication is low (1 *SD* below the mean), team-leader age dissimilarity is negatively and significantly associated with purpose clarity ($p < .001$), whereas when leader purpose communication is high (1 *SD* above the mean), team-leader gender dissimilarity is positively and significantly associated with purpose clarity ($p = .003$).

**Figure 4.** Interactive Effect of Leader Purpose Communication and Team-leader Gender Dissimilarity on Purpose Clarity (Study 2)
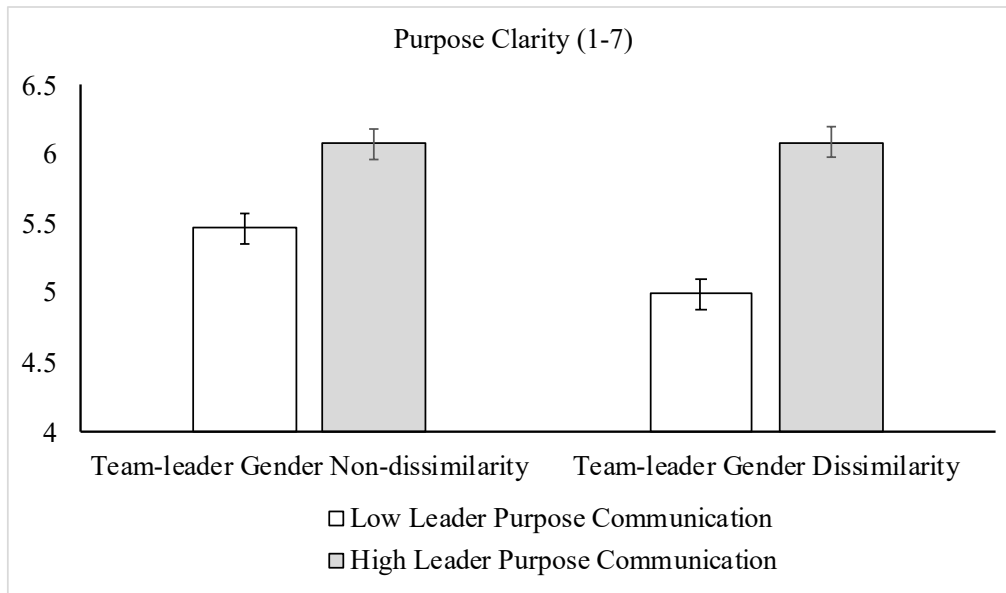


*Note.* Error bars represent standard errors. In the low leader purpose communication condition (white bars), team-leader gender dissimilarity is negatively and significantly associated with purpose clarity ($p = .001$), whereas in the high leader purpose communication condition (gray bars), team-leader gender dissimilarity is not significantly associated with purpose clarity ($p = .948$).

**Figure 5.** Interactive Effect of Leader Purpose Communication and Team-leader Gender Dissimilarity on Perceived Leader Commitment (Study 2)
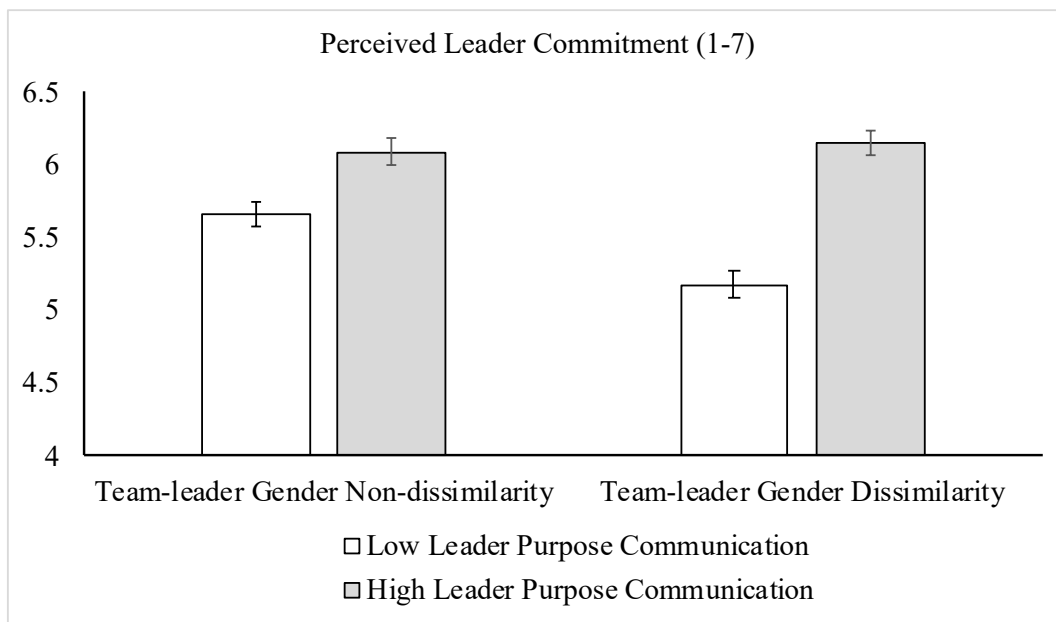


*Note.* Error bars represent standard errors. In the low leader purpose communication condition (white bars), team-leader gender dissimilarity is negatively and significantly associated with perceived leader commitment ($p < .001$), whereas in the high leader purpose communication condition (gray bars), team-leader gender dissimilarity is not significantly associated with purpose clarity ($p = .626$).

**ONLINE APPENDICES STUDY 1**

**Appendix 1a** Summary statistics (organizations)

| Industry | Organization N | Team (Leader) N | Member N |
|---|---|---|---|
| Manufacturing | 25 | 437 | 2462 |
| Food Products | 7 | 405 | 2419 |
| Consumer Products | 13 | 331 | 2176 |
| Chemical & Related | 4 | 24 | 183 |
| Pharmaceuticals | 17 | 277 | 1998 |
| Technology | 11 | 131 | 850 |
| Telecommunications | 2 | 14 | 119 |
| Financial Services | 6 | 52 | 378 |
| Banks and S&Ls | 13 | 1092 | 12016 |
| Insurance | 4 | 54 | 354 |
| Health | 8 | 73 | 467 |
| Utilities | 3 | 9 | 53 |
| Construction | 5 | 63 | 358 |
| Diversified Conglomerates | 5 | 69 | 390 |
| Agriculture | 5 | 71 | 538 |
| Petroleum | 5 | 361 | 2480 |
| Mining | 1 | 17 | 93 |
| Real Estate | 4 | 23 | 146 |
| Retail | 8 | 233 | 1720 |
| Hospitality & Tourism | 2 | 50 | 442 |
| Entertainment | 5 | 19 | 250 |
| Transportation | 7 | 98 | 851 |
| Communications | 3 | 147 | 669 |
| Professional Services | 10 | 169 | 1121 |
| Legal | 1 | 1 | 3 |
| | | | |
| *Total* | *174* | *4220* | *32536* |

| Geographic Region | Organization N | Team (Leader) N | Member N |
|---|---|---|---|
| North & Central America | 35 | 648 | 4494 |
| Europe | 60 | 1743 | 16487 |
| Asia | 52 | 1215 | 7554 |
| South America | 14 | 348 | 2126 |
| Australia, Africa, & Middle East | 13 | 266 | 1875 |
| | | | |
| *Total* | *174* | *4220* | *32536* |

**Appendix 1b** Summary statistics (team leaders)

| Characteristic | Category | N |
|---|---|---|
| Age | 20-29 | 80 |
| | 30-39 | 1035 |
| | 40-49 | 1945 |
| | 50-59 | 1111 |
| | 60 or older | 49 |
| Total | | 4220 |
| Leadership Experience | Less than 3 years | 657 |
| | 3-5 years | 603 |
| | 5-10 years | 1078 |
| | 10 years or more | 1882 |
| Total | | 4220 |
| Gender | Male | 3191 |
| | Female | 1029 |
| Total | | 4220 |
| Geographic Region | North & Central America | 648 |
| | Europe | 1743 |
| | Asia | 1215 |
| | South America | 348 |
| | Australia, Africa, & Middle East | 266 |
| Total | | 4220 |

**Appendix 1c.** Summary statistics by team leader gender

| Characteristic | Category | Male Leader | Female Leader |
|---|---|---|---|
| Age | 20-29 | 41 | 39 |
| | 30-39 | 695 | 340 |
| | 40-49 | 1494 | 451 |
| | 50-59 | 921 | 190 |
| | 60 or older | 40 | 9 |
| | | 3191 | 1,029 |
| Leadership Experience | Less than 3 years | 441 | 216 |
| | 3-5 years | 435 | 168 |
| | 5-10 years | 802 | 276 |
| | 10 years or more | 1513 | 369 |
| | | 3191 | 1029 |
| Geographic Region | North & Central America | 448 | 200 |
| | Europe | 1220 | 523 |
| | Asia | 1083 | 132 |
| | South America | 239 | 109 |
| | Australia, Africa, & Middle East | 201 | 65 |
| | | 3191 | 1029 |

**Appendix 1d.** Distribution of team gender composition and team leader gender (Study 1)

| Team Gender Composition | Female Leader | Male Leader | Total |
|---|---|---|---|
| Female-majority team | 446 | 360 | 806 |
| Male-majority team | 297 | 2222 | 2519 |
| Teams with balanced gender composition | 286 | 609 | 895 |
| Total | 1029 | 3191 | 4220 |

*Note*. (Fe)male-majority teams are defined as 65% or more of a team comprising (fe)male members. Teams with balanced gender composition are teams with less than 65% of either gender.

**Appendix 1e.** Team gender composition across different functional areas

| Function | Avg. Male % | Led by male | Led by female | Total |
|---|---|---|---|---|
| Management | .72 | 233 | 53 | 286 |
| Sales | .69 | 759 | 177 | 936 |
| Finance & Accounting | .53 | 269 | 115 | 384 |
| Human Resources | .35 | 69 | 95 | 164 |
| Manufacturing | .76 | 232 | 49 | 281 |
| Administration & Support Service | 54 | 174 | 108 | 282 |
| Information Technology | .77 | 244 | 49 | 293 |
| Marketing | .64 | 208 | 78 | 286 |
| Engineering | .90 | 150 | 10 | 160 |
| Project Management | .73 | 98 | 39 | 137 |
| Logistics | .74 | 135 | 30 | 165 |
| Research & Development | .76 | 117 | 21 | 138 |
| Quality Assurance | .56 | 55 | 42 | 97 |
| Legal | .49 | 23 | 14 | 37 |
| Product Development | .69 | 57 | 18 | 75 |
| Other | .65 | 368 | 131 | 499 |

**Appendix 1f.** Distribution of team age composition and team leader age (Study 1)

| | Leader Age | | | | | |
|---|---|---|---|---|---|---|
| Team Age Composition | 20s | 30s | 40s | 50s | 60s | Total |
| 65% or more members in 20s | 39 | 153 | 72 | 20 | 1 | 285 |
| 65% or more members in 30s | 9 | 308 | 326 | 82 | 6 | 731 |
| 65% or more members in 40s | 2 | 58 | 281 | 171 | 11 | 523 |
| 65% or more members in 50s | 0 | 14 | 96 | 160 | 5 | 275 |
| 65% or more members in 60s | 0 | 0 | 6 | 3 | 0 | 9 |
| No majority age group | 30 | 502 | 1164 | 675 | 26 | 2397 |
| Total | 80 | 1035 | 1945 | 1111 | 49 | 4220 |

**Appendix 1g.** Scale items used in Study 1

All items in Study 1 were measured on a 6-point scale, with contrasting statements on the poles of the scale.

*Purpose clarity* (3 items, α = .80)

- People in my team understand exactly how the team's goals are related to the organization's goals (6) – People in my team do not understand how the team's goals are related to the organization's goals (1).
- People in my team understand what the organization's goals are (6) – People in my team do not understand what the organization's goals are (1).
- The individuals in my team understand how their work is related to the team's goals (6) – The individuals in my team do not understand how their work is related to the team's goals (1).

*Leader purpose communication* (4 items, α = .77)

- My leader communicates a compelling vision or direction for our organization (6) – My leader does not communicate a compelling vision or direction for our organization (1).
- My leader takes time to explain the reasons for decisions in terms of the best interests of the organization and the team (6) – My leader expects people to accept decisions and realize that they are based on the organization's best interests (1).
- My leader often discusses how the direction and vision will benefit members of the team (6) – My leader rarely discusses how the direction and vision will benefit members of the team (1).
- My leader asks for input from the team whether the organization's direction is engaging to us (6) – My leader rarely asks for input from the team on whether the organization's direction is engaging to us (1).

*Directive leadership* (4 items, α = .63)

- To ensure instructions are followed exactly, my leader requires people to provide detailed updates (6) – My leader does not require people to provide detailed updates (1).
- My leader expects people to carry out their instructions immediately (6) –My leader does not always expect people to carry out their instructions immediately (1).
- To ensure compliance, my leader monitors what people are doing very closely (6) – My leader assumes people will do their jobs without constant monitoring (1).
- My leader makes most decisions for people in the team (6) – My leader allows people in the team to make most of their own decisions (1).

*Performance motivation* (2 items, α = .82)

- Mediocre performance is not tolerated in the team (6) – Mediocre performance is allowed to continue in the team (1).
- In this team, mediocre performance is not acceptable (6) – In this team, mediocre performance is okay (1).

**Appendix 1h.** Descriptive statistics and correlations among all variables used in Study 1

| Variable | M | SD | min. | max. | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Purpose Communication | 4.31 | .69 | 1.00 | 6.00 | | | | | | |
| 2. Team-Leader Gender Dissimilarity | .15 | .36 | .00 | 1.00 | -.04 | | | | | |
| 3. Team-Leader Age Dissimilarity | .05 | .21 | .00 | 1.00 | -.06 | .04 | | | | |
| 4. Purpose Clarity | 4.77 | .68 | 1.00 | 6.00 | .63 | -.05 | -.06 | | | |
| 5. Directive Leadership | 3.62 | .67 | 1.38 | 5.69 | -.08 | -.04 | .03 | .05 | | |
| 6. Performance Motivation | 4.24 | .75 | 1.33 | 6.00 | .31 | .06 | .01 | .42 | .15 | |
| 7. Team Gender Composition (% Male) | .67 | .30 | .00 | 1.00 | -.05 | -.27 | -.05 | -.09 | .10 | -.10 |
| 8. Proportion of Members in 20s | .13 | .23 | .00 | 1.00 | -.01 | .03 | .20 | -.04 | .01 | -.05 |
| 9. Proportion of Members in 30s | .32 | .27 | .00 | 1.00 | .05 | .05 | .07 | .04 | .00 | .01 |
| 10. Proportion of Members in 40s | .31 | .25 | .00 | 1.00 | .00 | -.03 | -.17 | .01 | .00 | .03 |
| 11. Proportion of Members in 50s | .21 | .24 | .00 | 1.00 | -.04 | -.06 | -.09 | -.02 | .00 | -.02 |
| 12. Proportion of Members in 60s | .02 | .08 | .00 | 1.00 | -.01 | .00 | .02 | .00 | -.04 | .07 |
| 13. Function Dummy 1 | .23 | .42 | - | - | .04 | -.01 | -.03 | .09 | .15 | .06 |
| 14. Function Dummy 2 | .09 | .29 | - | - | -.03 | .05 | .00 | -.01 | -.08 | .00 |
| 15. Function Dummy 3 | .03 | .18 | - | - | .01 | .03 | .06 | .03 | -.04 | .03 |
| 16. Function Dummy 4 | .06 | .25 | - | - | .01 | -.05 | .02 | .00 | .12 | -.01 |
| 17. Function Dummy 5 | .07 | .26 | - | - | .03 | .02 | -.00 | -.01 | -.04 | -.05 |
| 18. Function Dummy 6 | .07 | .26 | - | - | -.04 | .01 | -.03 | -.11 | -.15 | -.10 |
| 19. Function Dummy 7 | .06 | .24 | - | - | -.05 | .00 | .00 | -.06 | -.03 | .00 |
| 20. Function Dummy 8 | .04 | .19 | - | - | -.06 | -.05 | .04 | -.06 | .02 | -.04 |
| 21. Function Dummy 9 | .03 | .18 | - | - | -.04 | .00 | .01 | -.02 | -.03 | -.01 |
| 22. Function Dummy 10 | .04 | .18 | - | - | .00 | .01 | .04 | .01 | .01 | .03 |
| 23. Function Dummy 11 | .03 | .17 | - | - | -.03 | -.02 | .00 | -.05 | -.06 | -.02 |
| 24. Function Dummy 12 | .02 | .15 | - | - | -.04 | .01 | .02 | .00 | -.02 | .00 |
| 25. Function Dummy 13 | .01 | .09 | - | - | .00 | .04 | -.01 | -.01 | -.06 | .00 |
| 26. Function Dummy 14 | .02 | .13 | - | - | -.02 | .00 | .01 | -.01 | -.06 | -.01 |
| 27. Function Dummy 15 | .12 | .32 | - | - | .04 | .01 | -.03 | .04 | .03 | .04 |

**Appendix 1h.** Descriptive statistics and correlations among all variables used in Study 1

| Variable | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Purpose Communication | | | | | | | | | | |
| 2. Team-Leader Gender Dissimilarity | | | | | | | | | | |
| 3. Team-Leader Age Dissimilarity | | | | | | | | | | |
| 4. Purpose Clarity | | | | | | | | | | |
| 5. Directive Leadership | | | | | | | | | | |
| 6. Performance Motivation | | | | | | | | | | |
| 7. Team Gender Composition (% Male) | | | | | | | | | | |
| 8. Proportion of Members in 20s | -.16 | | | | | | | | | |
| 9. Proportion of Members in 30s | -.09 | -.07 | | | | | | | | |
| 10. Proportion of Members in 40s | .11 | -.45 | -.46 | | | | | | | |
| 11. Proportion of Members in 50s | .13 | -.36 | -.52 | -.07 | | | | | | |
| 12. Proportion of Members in 60s | .03 | -.12 | -.18 | -.05 | .05 | | | | | |
| 13. Function Dummy 1 | .03 | -.04 | -.09 | .06 | .07 | .01 | | | | |
| 14. Function Dummy 2 | -.14 | .03 | .03 | -.04 | -.01 | -.03 | -.17 | | | |
| 15. Function Dummy 3 | -.20 | .06 | .07 | -.05 | -.06 | -.03 | -.10 | -.06 | | |
| 16. Function Dummy 4 | .09 | -.01 | .02 | .01 | -.02 | -.03 | -.14 | -.08 | -.05 | |
| 17. Function Dummy 5 | -.11 | .03 | .01 | -.02 | -.01 | -.02 | -.15 | -.09 | -.05 | -.07 |
| 18. Function Dummy 6 | .09 | .00 | -.02 | .02 | .00 | .01 | -.15 | -.09 | -.05 | -.07 |
| 19. Function Dummy 7 | -.04 | .01 | .06 | -.01 | -.05 | -.04 | -.14 | -.08 | -.05 | -.07 |
| 20. Function Dummy 8 | .15 | .04 | -.03 | -.02 | .00 | .02 | -.11 | -.06 | -.04 | -.05 |
| 21. Function Dummy 9 | .02 | .07 | .01 | -.04 | -.03 | -.02 | -.10 | -.06 | -.03 | -.05 |
| 22. Function Dummy 10 | .06 | .02 | -.02 | -.01 | .00 | .01 | -.11 | -.06 | -.04 | -.05 |
| 23. Function Dummy 11 | .04 | .03 | .03 | -.03 | -.03 | -.01 | -.10 | -.06 | -.03 | -.05 |
| 24. Function Dummy 12 | -.06 | .00 | .04 | -.03 | -.02 | .01 | -.08 | -.05 | -.03 | -.04 |
| 25. Function Dummy 13 | -.06 | .00 | .06 | -.03 | -.03 | -.01 | -.05 | -.03 | -.02 | -.02 |
| 26. Function Dummy 14 | .01 | .01 | .02 | .00 | -.03 | -.01 | -.07 | -.04 | -.02 | -.03 |
| 27. Function Dummy 15 | .00 | -.06 | -.02 | .01 | .05 | .05 | -.20 | -.12 | -.07 | -.10 |

**Appendix 1h.** Descriptive statistics and correlations among all variables used in Study 1

| Variable | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Purpose Communication | | | | | | | | | | |
| 2. Team-Leader Gender Dissimilarity | | | | | | | | | | |
| 3. Team-Leader Age Dissimilarity | | | | | | | | | | |
| 4. Purpose Clarity | | | | | | | | | | |
| 5. Directive Leadership | | | | | | | | | | |
| 6. Performance Motivation | | | | | | | | | | |
| 7. Team Gender Composition (% Male) | | | | | | | | | | |
| 8. Proportion of Members in 30s | | | | | | | | | | |
| 9. Proportion of Members in 40s | | | | | | | | | | |
| 10. Proportion of Members in 50s | | | | | | | | | | |
| 11. Proportion of Members in 60s | | | | | | | | | | |
| 12. Proportion of Members in 60s | | | | | | | | | | |
| 13. Function Dummy 1 | | | | | | | | | | |
| 14. Function Dummy 2 | | | | | | | | | | |
| 15. Function Dummy 3 | | | | | | | | | | |
| 16. Function Dummy 4 | | | | | | | | | | |
| 17. Function Dummy 5 | | | | | | | | | | |
| 18. Function Dummy 6 | -.08 | | | | | | | | | |
| 19. Function Dummy 7 | -.07 | -.07 | | | | | | | | |
| 20. Function Dummy 8 | -.05 | -.05 | -.05 | | | | | | | |
| 21. Function Dummy 9 | -.05 | -.05 | -.05 | -.04 | | | | | | |
| 22. Function Dummy 10 | -.05 | -.05 | -.05 | -.04 | -.04 | | | | | |
| 23. Function Dummy 11 | -.05 | -.05 | -.05 | -.03 | -.03 | -.03 | | | | |
| 24. Function Dummy 12 | -.04 | -.04 | -.04 | -.03 | -.03 | -.03 | -.03 | | | |
| 25. Function Dummy 13 | -.03 | -.03 | -.02 | -.02 | -.02 | -.02 | -.02 | -.01 | | |
| 26. Function Dummy 14 | -.04 | -.04 | -.03 | -.03 | -.02 | -.03 | -.02 | -.02 | -.01 | |
| 27. Function Dummy 15 | -.10 | -.10 | -.10 | -.07 | -.07 | -.07 | -.07 | -.06 | -.03 | -.05 |

*Note.* $N = 7,194$. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0. For function dummy, "general management" was used as a reference category (function dummy 1 = sales, function dummy 2 = finance, function dummy 3 = HR, function dummy 4 = manufacturing, function dummy 5 = administrative support, function dummy 6 = information technology, function dummy 7 = marketing, function dummy 8 = engineering, function dummy 9 = project management, function dummy 10 = logistics, function dummy 11 = research and development, function dummy 12 = quality assurance, function dummy 13 = legal, function dummy 14 = product development, function dummy 15 = other).
$|r| > .02$, p < .05; $|r| > .03$, $p < .01$; $|r| > .04$, $p < .001$.

**Appendix 1i.** Results of fixed-effects regressions (Study 1)

| Variable | Purpose Clarity | | | | | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Purpose Communication (PC) | .54*** | .54*** | 0.49*** | .54*** | .51*** | .48*** |
| | (.02) | (.02) | (.02) | (.02) | (.02) | (.02) |
| Gender Dissimilarity (GD) | | -.09** | -.86*** | | | -.63*** |
| | | (.03) | (.15) | | | (.15) |
| Age Dissimilarity (AD) | | | | -.11* | -1.41*** | -1.18*** |
| | | | | (.05) | (.20) | (.21) |
| PC × GD | | | 0.18*** | | | .13*** |
| | | | (.03) | | | (.03) |
| PC × AD | | | | | .33*** | .27*** |
| | | | | | (.05) | (.05) |
| Proportion of Male Members | .09 | .07 | .06 | .09 | .07 | .05 |
| | (.06) | (.06) | (.06) | (.06) | (.06) | (.06) |
| Proportion of Members in 30s | .12 | .12 | .11 | .10 | .12 | .11 |
| | (.07) | (.07) | (.07) | (.07) | (.07) | (.07) |
| Proportion of Members in 40s | .09 | .09 | .08 | .06 | .08 | .08 |
| | (.07) | (.07) | (.07) | (.08) | (.08) | (.08) |
| Proportion of Members in 50s | -.07 | -.07 | -.06 | -.10 | -.03 | -.02 |
| | (.08) | (.08) | (.08) | (.08) | (.08) | (.08) |
| Proportion of Members in 60s | -.13 | -.12 | -.06 | -.14 | .02 | .05 |
| | (.14) | (.14) | (.14) | (.14) | (.14) | (.14) |
| Function 1 | .07 | .07 | .07 | .07 | .07 | .06 |
| | (.05) | (.05) | (.05) | (.05) | (.05) | (.05) |
| Function 2 | -.05 | -.05 | -.05 | -.05 | -.04 | -.05 |
| | (.07) | (.07) | (.07) | (.07) | (.07) | (.07) |
| Function 3 | -.07 | -.08 | -.10 | -.07 | -.07 | -.10 |
| | (.16) | (.16) | (.16) | (.16) | (.16) | (.16) |
| Function 4 | .01 | .01 | .00 | .01 | .00 | -.01 |
| | (.06) | (.06) | (.06) | (.06) | (.06) | (.06) |
| Function 5 | -.01 | -.01 | -.01 | -.01 | -.01 | -.01 |
| | (.06) | (.06) | (.06) | (.06) | (.06) | (.06) |
| Function 6 | -.07 | -.07 | -.08 | -.08 | -.09 | -.09 |
| | (.09) | (.09) | (.09) | (.09) | (.09) | (.09) |
| Function 7 | .01 | .01 | .00 | .01 | .00 | .00 |
| | (.08) | (.08) | (.07) | (.08) | (.07) | (.07) |
| Function 8 | .00 | -.01 | -.01 | .00 | -.01 | -.01 |
| | (.08) | (.08) | (.08) | (.08) | (.08) | (.08) |
| Function 9 | -.03 | -.04 | -.05 | -.04 | -.03 | -.04 |
| | (.08) | (.08) | (.08) | (.08) | (.08) | (.08) |
| Function 10 | -.19 | -.20 | -.21 | -.19 | -.21 | -.22 |
| | (.12) | (.12) | (.12) | (.12) | (.12) | (.12) |
| Function 11 | -.20* | -.20* | -.19 | -.20* | -.18 | -.18 |
| | (.10) | (.10) | (.10) | (.10) | (.10) | (.10) |
| Function 12 | .08 | .06 | .07 | .07 | .09 | .08 |
| | (.11) | (.11) | (.11) | (.11) | (.11) | (.11) |
| Function 13 | .23 | .24 | .22 | .23 | .24 | .24 |
| | (.24) | (.24) | (.24) | (.24) | (.24) | (.24) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Function 14 | -.05 | -.06 | -.07 | -.04 | -.03 | -.05 |
| | (.11) | (.11) | (.11) | (.11) | (.11) | (.11) |
| Function 15 | -.03 | -.03 | -.04 | -.03 | -.03 | -.03 |
| | (.05) | (.05) | (.05) | (.05) | (.05) | (.05) |
| | | | | | | |
| Leader Fixed Effects | Included | Included | Included | Included | Included | Included |
| Rating Period Fixed Effects | Included | Included | Included | Included | Included | Included |
| | | | | | | |
| $R^2$ (within) | .30 | .30 | .31 | .30 | .31 | .31 |
| $F$-value | 46.31 | 45.07 | 44.90 | 44.93 | 45.48 | 43.45 |

*Note.* $N = 7, 194$. Standard errors are shown in parentheses. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0. For function dummy variables, "general management" was used as a reference category (function 1 = sales, function 2 = finance, function 3 = HR, function 4 = manufacturing, function 5 = administrative support, function 6 = information technology, function 7 = marketing, function 8 = engineering, function 9 = project management, function 10 = logistics, function 11 = research and development, function 12 = quality assurance, function 13 = legal, function 14 = product development, function 15 = other).
* $p < .05$; ** $p < .01$; *** $p < .001$.

**Appendix 1j.** Results of Placebo Tests (Study 1)

Panel A. Placebo test using directive leadership as an alternative independent variable

| | Purpose Clarity | | | | | |
| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| Directive | -.08** | -.08** | -.08** | -.07** | -.07* | -.07* |
| Leadership (DL) | (.03) | (.03) | (.03) | (.03) | (.03) | (.03) |
| Gender | | -.13*** | -.14 | | | -.10 |
| Dissimilarity (GD) | | (.04) | (.19) | | | (.19) |
| Age | | | | -.32*** | -.18 | -.15 |
| Dissimilarity (AD) | | | | (.06) | (.26) | (.26) |
| | | | | | | |
| DL × GD | | | .00 | | | -.01 |
| | | | (.05) | | | (.05) |
| DL × AD | | | | | .04 | -.05 |
| | | | | | (.07) | (.07) |
| | | | | | | |
| Control Variables | Included | Included | Included | Included | Included | Included |
| Leader Fixed Effects | Included | Included | Included | Included | Included | Included |
| Function Fixed Effects | Included | Included | Included | Included | Included | Included |
| Rating Period Fixed Effects | Included | Included | Included | Included | Included | Included |
| | | | | | | |
| $R^2$ (within) | .03 | .03 | .03 | .04 | .04 | .04 |
| $F$-value | 3.08 | 3.38 | 3.26 | 4.22 | 4.08 | 4.15 |

*Note.* $N = 7,194$. Standard errors are shown in parentheses. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0.

Panel B. Placebo test using performance motivation as an alternative dependent variable

| | Performance Motivation | | | | | |
| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| Purpose | .22*** | .22*** | .25*** | .22*** | .23*** | .25*** |
| Communication (PC) | (.02) | (.02) | (.02) | (.02) | (.02) | (.02) |
| Gender Dissimilarity | | .02 | .38** | | | .32 |
| (GD) | | (.04) | (.17) | | | (.17) |
| Age Dissimilarity | | | | .05 | .37 | .26 |
| (AD) | | | | (.05) | (.23) | (.24) |
| | | | | | | |
| PC × GD | | | -.08* | | | -.07 |
| | | | (.04) | | | (.04) |
| PC × AD | | | | | -.08 | -.05 |
| | | | | | (.06) | (.06) |
| | | | | | | |
| Control Variables | Included | Included | Included | Included | Included | Included |
| Leader Fixed Effects | Included | Included | Included | Included | Included | Included |
| Function Fixed Effects | Included | Included | Included | Included | Included | Included |
| Rating Period Fixed Effects | Included | Included | Included | Included | Included | Included |
| | | | | | | |
| $R^2$ (within) | .06 | .06 | .06 | .06 | .06 | .06 |
| $F$-value | 6.96 | 6.71 | 6.66 | 6.74 | 6.58 | 6.28 |

*Note.* $N = 7,194$. Standard errors are shown in parentheses.
* $p < .05$; ** $p < .01$; *** $p < .001$.

Panel C. Placebo test using randomly generated values of leader purpose communication
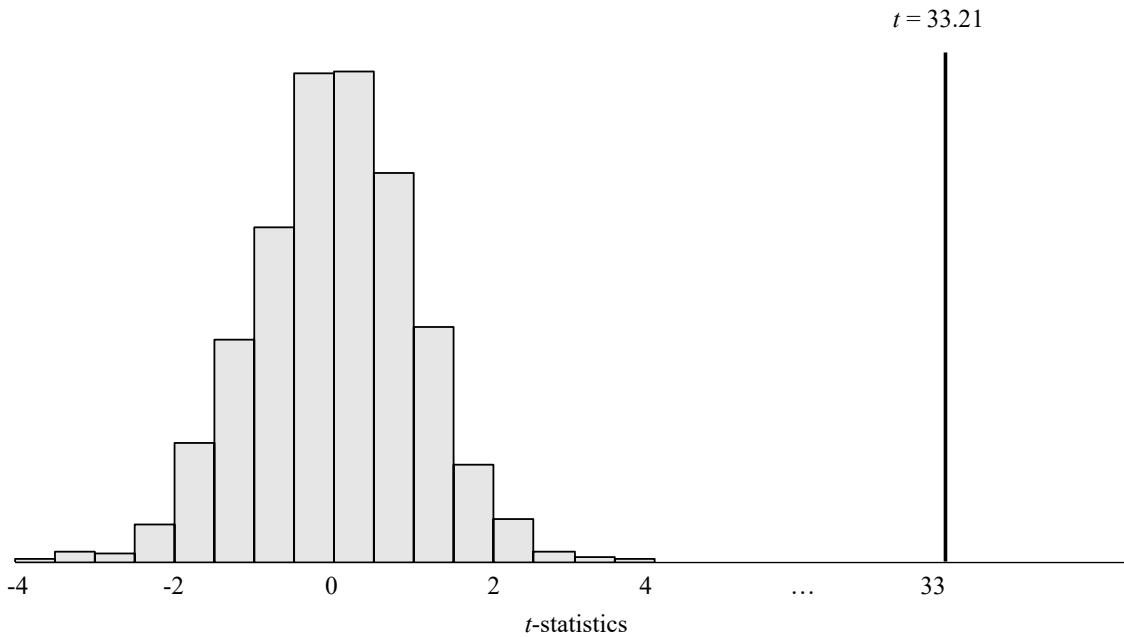


*Note.* Figure plots the distribution of estimated coefficient *t*-statistics for leader purpose communication based on 1,000 repetitions of Table 1, Panel B, Model 1. For each repetition, we constructed the leader purpose communication variable using random values with normal distribution with the same *M* and *SD* of the real data. The solid line corresponds to the *t*-statistic using the real data (Model 1, Table 1, Panel B).

**Appendix 1k.** Robustness check results of fixed-effects regressions using split-group method predicting purpose clarity (Study 1)

| Variable | Purpose Clarity | | | | | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Purpose Communication (PC) | .12*** | .12*** | .07*** | .11*** | .09*** | .05* |
| | (.02) | (.02) | (.02) | (.02) | (.02) | (.02) |
| Gender Dissimilarity (GD) | | -.05*** | -1.24*** | | | -.91*** |
| | | (.05) | (.19) | | | (.20) |
| Age Dissimilarity (AD) | | | | -.24*** | -1.47*** | -1.18*** |
| | | | | (.07) | (.26) | (.27) |
| | | | | | | |
| PC × GD | | | .25*** | | | .20*** |
| | | | (.04) | | | (.05) |
| PC × AD | | | | | .31*** | .25*** |
| | | | | | (.06) | (.06) |
| | | | | | | |
| Control Variables | Included | Included | Included | Included | Included | Included |
| Leader Fixed Effects | Included | Included | Included | Included | Included | Included |
| Function Fixed Effects | Included | Included | Included | Included | Included | Included |
| Rating Period Fixed Effects | Included | Included | Included | Included | Included | Included |
| | | | | | | |
| $R^2$ (within) | .03 | .03 | .04 | .04 | .04 | .05 |
| $F$-value | 3.77 | 3.67 | 4.70 | 4.02 | 4.76 | 5.15 |

*Note.* $N = 7, 194$. Standard errors are shown in parentheses. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0.
* $p < .05$; ** $p < .01$; *** $p < .001$.

**Appendix 1l.** Robustness check results of regressions using lead dependent variable (Study 1)

| Variable | Purpose Clarity$_{t+1}$ | | | | | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Purpose Communication$_t$ (PC) | .28*** | .28*** | .11 | .26*** | .19*** | .09 |
| | (.05) | (.05) | (.06) | (.05) | (.06) | (.06) |
| Gender Dissimilarity$_t$ (GD) | | -.04 | -2.31*** | | | -1.87*** |
| | | (.11) | (.48) | | | (.50) |
| Age Dissimilarity$_t$ (AD) | | | | -.47** | -2.47*** | -1.75** |
| | | | | (.17) | (.63) | (.65) |
| PC$_t$ × GD$_t$ | | | .54*** | | | .44*** |
| | | | (.11) | | | (.12) |
| PC$_t$ × AD$_t$ | | | | | .54*** | .37* |
| | | | | | (.16) | (.17) |
| Control Variables | Included | Included | Included | Included | Included | Included |
| Leader Fixed Effects | Included | Included | Included | Included | Included | Included |
| Function Fixed Effects | Included | Included | Included | Included | Included | Included |
| Rating Period Effects | Included | Included | Included | Included | Included | Included |
| $R^2$ (within) | .14 | .14 | .18 | .15 | .17 | .19 |
| $F$-value | 3.12 | 3.00 | 3.88 | 3.33 | 3.68 | 3.99 |

*Note.* $N = 2,974$ team-level observations. Standard errors are shown in parentheses. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0.
* $p < .05$; ** $p < .01$; *** $p < .001$.

**Appendix 1m.** Robustness check results of fixed-effects regressions predicting purpose clarity using team-leader dissimilarity variables created with different cutoff values (Study 1)

| | Purpose Clarity | | |
|---|---|---|---|
| | Values used to identify teams with one majority gender | | |
| Variable | 70% cutoff | 60% cutoff | 55% cutoff |
| Purpose Communication | .54*** | .49*** | .49*** |
| (PC) | (.02) | (.02) | (.02) |
| Gender Dissimilarity (GD) | -.07 | -.86*** | -.79*** |
| | (.19) | (.14) | (.14) |
| PC × GD | .03 | .18*** | .17*** |
| | (.04) | (.03) | (.03) |
| | | | |
| Control Variables | Included | Included | Included |
| Leader Fixed Effects | Included | Included | Included |
| Function Fixed Effects | Included | Included | Included |
| Year Fixed Effects | Included | Included | Included |
| | | | |
| $R^2$ (within) | .30 | .31 | .31 |
| $F$-value | 43.20 | 44.92 | 44.67 |

| | Values used to identify teams with one majority age category | | |
|---|---|---|---|
| | 70% cutoff | 60% cutoff | 55% cutoff |
| Purpose Communication | .51*** | .51*** | .51*** |
| (PC) | (.02) | (.02) | (.02) |
| Age Dissimilarity (AD) | -1.84*** | -1.32*** | -1.27*** |
| | (.23) | (.19) | (.18) |
| PC × AD | .42*** | .30*** | .29*** |
| | (.06) | (.05) | (.04) |
| | | | |
| Control Variables | Included | Included | Included |
| Leader Fixed Effects | Included | Included | Included |
| Function Fixed Effects | Included | Included | Included |
| Rating Period Effects | Included | Included | Included |
| | | | |
| $R^2$ (within) | .31 | .31 | .31 |
| $F$-value | 46.24 | 45.55 | 45.43 |

*Note*. $N = 7,194$ team-level observations. Standard errors are shown in parentheses. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0. The top panel presents results using a team-leader *gender* dissimilarity variable created with different cutoff values to identify teams composed of one majority gender. The bottom panel presents results using a team-leader *age* dissimilarity variable created with different cutoff values to identify teams composed of one majority age category.
* $p < .05$; ** $p < .01$; *** $p < .001$.

**Appendix 1n.** Robustness check results of fixed-effects regressions predicting purpose clarity using alternative operationalizations of team-leader age dissimilarity (Study 1)

| Variable | Purpose Clarity | |
|---|---|---|
| | Model 1 Younger leader | Model 2 One+ age category difference |
| Purpose Communication (PC) | .50*** | .49*** |
| | (.02) | (.02) |
| Age Dissimilarity (AD) | -1.41*** | -.66*** |
| | (.19) | (.12) |
| PC × AD | .33*** | .15*** |
| | (.05) | (.03) |
| | | |
| Control Variables | Included | Included |
| Leader Fixed Effects | Included | Included |
| Function Fixed Effects | Included | Included |
| Rating Period Effects | Included | Included |
| | | |
| $R^2$ (within) | .31 | .30 |
| $F$-value | 45.66 | 44.56 |

*Note.* $N = 7,194$ team-level observations. Standard errors are shown in parentheses. For team-leader age dissimilarity, dissimilarity was coded 1, and the rest was coded 0. Model 1 presents results using the team-leader age dissimilarity variable created only with teams whose leaders are younger than the majority age make-up of the team (e.g., teams with a majority of members in their 40s and leaders in their 20s). Model 2 presents results using the team-leader age dissimilarity variable created with teams whose leaders are one (or more) age category older or younger than the majority age make-up of the team (e.g., teams with majority of members in their 40s and leaders in their 30s or in 50s).
* $p < .05$; ** $p < .01$; *** $p < .001$.

**Appendix 1o.** Robustness check results of fixed-effects regressions predicting purpose clarity, using a continuous gender composition variable (Study 1)

| Variable | Purpose Clarity | |
| --- | --- | --- |
| | Model 1 | Model 2 |
| Leader Gender | -.07** | -.17*** |
| | (.02) | (.04) |
| Team Gender Composition | -.13*** | -.22*** |
| | (.03) | (.06) |
| | | |
| Leader Gender | | .26*** |
| × Team Gender Composition | | (.07) |
| | | |
| Control Variables | Included | Included |
| Leader Fixed Effects | Included | Included |
| Function Fixed Effects | Included | Included |
| Rating Period Fixed Effects | Included | Included |
| | | |
| $R^2$ | .34 | .35 |

*Note.* $N = 7{,}194$ team-level observations. Standard errors are shown in parentheses. For leader gender, male was coded 1, and female was coded 0. Team gender composition = proportion of male members in a team. A significant two-way interaction between leader gender and team gender composition on purpose clarity replicates the negative main effect of team-leader gender dissimilarity on purpose clarity.

* $p < .05$; ** $p < .01$; *** $p < .001$.

**Appendix 1p.** Robustness check results of fixed-effects regressions predicting purpose clarity using unaggregated individual-level responses (Study 1)

| Variable | Purpose Clarity | | | | | |
|---|---|---|---|---|---|---|
|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Purpose Communication (PC) | .36*** | .36*** | .35*** | .36*** | .36*** | .34*** |
|  | (.01) | (.01) | (.01) | (.01) | (.01) | (.01) |
| Gender Dissimilarity (GD) |  | -.08** | -.56*** |  |  | -.49*** |
|  |  | (.03) | (.09) |  |  | (.09) |
| Age Dissimilarity (AD) |  |  |  | -.18*** | -.78*** | -.66*** |
|  |  |  |  | (.04) | (.14) | (.14) |
| PC × GD |  |  | .11*** |  |  | .09*** |
|  |  |  | (.02) |  |  | (.02) |
| PC × AD |  |  |  |  | .15*** | .12*** |
|  |  |  |  |  | (.03) | (.03) |
|  |  |  |  |  |  |  |
| Proportion of Male Members | .08 | .07 | .06 | .07 | .07 | .05 |
|  | (.06) | (.06) | (.06) | (.06) | (.06) | (.06) |
| Proportion of Members in 30s | .06 | .06 | .06 | .05 | .05 | .05 |
|  | (.07) | (.07) | (.07) | (.07) | (.07) | (.07) |
| Proportion of Members in 40s | -.02 | -.02 | -.02 | -.06 | -.04 | -.03 |
|  | (.07) | (.07) | (.07) | (.07) | (.07) | (.07) |
| Proportion of Members in 50s | -.07 | -.07 | -.06 | -.10 | -.07 | -.05 |
|  | (.08) | (.08) | (.08) | (.08) | (.08) | (.08) |
| Proportion of Members in 60s | -.34** | -.33* | -.27* | -.35** | -.28* | -.24 |
|  | (.13) | (.13) | (.13) | (.13) | (.13) | (.13) |
| Leader-Member Gender Difference | -.08** | -.05 | -.06 | -.08** | -.08** | -.05 |
|  | (.03) | (.03) | (.03) | (.03) | (.03) | (.03) |
| Leader-Member Age Category Difference | -.03* | -.03* | -.03* | -.03** | -.03 | -.03 |
|  | (.01) | (.01) | (.01) | (.01) | (.01) | (.01) |
| Function 1 | -.04 | -.04 | -.04 | -.04 | -.04 | -.05 |
|  | (.03) | (.03) | (.03) | (.03) | (.03) | (.03) |
| Function 2 | -.02 | -.02 | -.02 | -.03 | -.02 | -.02 |
|  | (.04) | (.04) | (.04) | (.04) | (.04) | (.04) |
| Function 3 | -.10 | -.10 | -.11 | -.10 | -.10 | -.12 |
|  | (.14) | (.14) | (.14) | (.14) | (.14) | (.14) |
| Function 4 | -.06 | -.07 | -.08 | -.07 | -.07 | -.08 |
|  | (.04) | (.04) | (.04) | (.04) | (.04) | (.04) |
| Function 5 | -.04 | -.04 | -.04 | -.04 | -.04 | -.04 |
|  | (.04) | (.06) | (.04) | (.04) | (.04) | (.04) |
| Function 6 | -.05 | -.05 | -.06 | -.05 | -.06 | -.07 |
|  | (.06) | (.05) | (.06) | (.06) | (.06) | (.06) |
| Function 7 | -.05 | -.05 | -.06 | -.06 | -.06 | -.06 |
|  | (.06) | (.07) | (.05) | (.05) | (.05) | (.05) |
| Function 8 | -.01 | -.02 | -.02 | .00 | .00 | -.01 |
|  | (.07) | (.06) | (.07) | (.07) | (.07) | (.07) |
| Function 9 | -.01 | -.01 | -.01 | -.02 | -.01 | -.01 |
|  | (.06) | (.09) | (.06) | (.06) | (.06) | (.06) |
| Function 10 | -.10 | -.12 | -.11 | -.10 | -.11 | -.11 |
|  | (.09) | (.09) | (.09) | (.09) | (.09) | (.09) |
| Function 11 | -.17 | -.17 | -.17 | -.17 | -.17 | -.16 |
|  | (.09) | (.10) | (.09) | (.09) | (.09) | (.09) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Function 12 | -.15 | -.15 | -.16 | -.16 | -.16 | -.16 |
| | (.10) | (.20) | (.10) | (.10) | (.10) | (.10) |
| Function 13 | -.06 | -.04 | -.06 | -.06 | -.05 | -.05 |
| | (.15) | (.15) | (.15) | (.15) | (.15) | (.15) |
| Function 14 | -.03 | -.04 | -.05 | -.03 | -.02 | -.04 |
| | (.08) | (.08) | (.08) | (.08) | (.08) | (.08) |
| Function 15 | -.01 | -.01 | -.02 | -.02 | -.02 | -.02 |
| | (.03) | (.03) | (.03) | (.03) | (.03) | (.03) |
| | | | | | | |
| Member Fixed Effect | Included | Included | Included | Included | Included | Included |
| Rating Period Fixed Effect | Included | Included | Included | Included | Included | Included |
| | | | | | | |
| $R^2$ (within) | .14 | .14 | .14 | .14 | .14 | .15 |
| $F$-value | 78.08 | 75.78 | 74.52 | 76.05 | 74.30 | 70.83 |

*Note.* $N = 45,928$. Standard errors are shown in parentheses. For team-leader dissimilarity variables, dissimilarity was coded 1, and the rest was coded 0. For leader-member gender difference, the same gender leader-member pair was coded 1, and the different gender leader-member pair was coded 0. For leader-member age category difference, when a leader's age category is two or more categories away from a member's, 1 was assigned; otherwise, 0. For function dummy variables, "general management" was used as a reference category (function 1 = sales, function 2 = finance, function 3 = HR, function 4 = manufacturing, function 5 = administrative support, function 6 = information technology, function 7 = marketing, function 8 = engineering, function 9 = project management, function 10 = logistics, function 11 = research and development, function 12 = quality assurance, function 13 = legal, function 14 = product development, function 15 = other).
* $p < .05$; ** $p < .01$; *** $p < .001$.

**ONLINE APPENDICES STUDY 2**

**Appendix 2a.** Scale items used in Study 2

All items in Study 2 were measured on a 7-point scale, with the prompt "If you were in this scenario, please indicate the extent to which you would agree or disagree with the following statements" (1 = *strongly disagree*, 7 = *strongly agree*).

***Purpose clarity*** (3 items, α = .93) [items adjusted from Study 1]

- People (including myself) in the team would understand how the team's tasks are related to the company's goals.
- People (including myself) in the team would be well aware of what the company's goals are.
- People (including myself) in the team would have a good understanding of how their work is related to the company's objectives.

***Perceived leader commitment to team*** (3 items, α = .81)

- The team leader is very committed to the team.
- The team leader aims to gain benefits for the whole team.
- The team leader wants the best for the team.

***Items for leader purpose communication manipulation check*** (4 items, α = .84)

- The team leader discusses how the direction and vision of the company will benefit the team members.
- The team leader communicates a compelling vision or direction for the company.
- The leader is interested in knowing whether the company's direction is engaging to team members.
- The team leader takes time to explain the reasons for decisions in terms of the best interests of the company and the team.

**Appendix 2b.** Means and standard deviations across conditions in Study 2

| Leader Purpose Communication | Low | | | | High | | | |
|---|---|---|---|---|---|---|---|---|
| Team Gender Composition | Male-majority | | Female-majority | | Male-majority | | Female-majority | |
| Leader Gender | Male ($n = 52$) | Female ($n = 51$) | Male ($n = 49$) | Female ($n = 44$) | Male ($n = 45$) | Female ($n = 50$) | Male ($n = 50$) | Female ($n = 42$) |
| Perceived Leader Commitment | $5.65_a$ (.86) | $5.26_a$ (1.05) | $5.10_{ab}$ (1.01) | $5.67_a$ (.94) | $5.86_{ac}$ (.83) | $6.15_{ac}$ (.70) | $6.16_{ac}$ (.72) | $6.34_c$ (.63) |
| Purpose Clarity | $5.53_a$ (1.24) | $4.95_b$ (1.55) | $4.99_{ab}$ (1.10) | $5.40_{ab}$ (1.18) | $6.06_a$ (.76) | $6.08_a$ (.66) | $6.09_a$ (.68) | $6.10_a$ (.84) |

*Note.* Standard deviations are shown in parentheses. Within each row, means with different subscripts are different with $p$-values of 0.093 or lower from Tukey's HSD tests.