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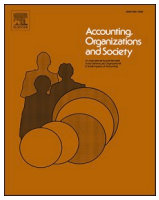

The effect of target transparency on managers' target setting decisions☆

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ABSTRACT

This study investigates, via two experiments, the effects of target transparency, which reflects employees' knowledge about each other's targets in an organization, on managers' target setting decisions. We also investigate whether this effect depends on the need for help among employees. We predict and find that target transparency and need for help interact to influence managers' target setting decisions. Target transparency increases target levels when the need for help is low, but not when it is high. Further, target transparency leads managers to differentiate less between individual employee targets. This reduction is greater when the need for help is high than when it is low. Additional analyses support our theory by revealing that managers strategically set targets in a way that is consistent with an intention to motivate both effort at the individual level and help among employees when such are needed. Our results help explain anecdotal evidence of why companies that value help among employees often make targets transparent throughout the entire organization.

1. Introduction

Target transparency, which reflects employees' knowledge about each other's targets, is an important and intensively discussed topic in corporate practice (Doerr, 2018; Sull & Sull, 2018). Recent evidence indicates that firms differ in how "transparent" they are along a continuum (Labro & Omartian, 2023). At one end, there are firms that do not disclose targets internally and even adopt penalties aimed at preventing employees from sharing such information with each other (Feichter, Grabner, & Moers, 2018). For example, firms such as Valve Corporation and Zappos emphasize privacy and/or return to a policy of low transparency (Bernstein, 2014; Groth, 2020). At the other end, there are firms such as Google, Netflix, Intuit, Disney, BMW, and Exxon, that rely on the "Objectives and Key Results" (OKR) performance management concept and make targets transparent throughout the whole organization (Doerr, 2018; Niven & Lamorte, 2016; Schrage & Kiron, 2018; Sull & Sull, 2018).[1] Although target transparency is intensively discussed in corporate practice, to our knowledge, no research exists as to how such transparency affects the actual targets managers set. Therefore, this study investigate the effect of target transparency on managers' target setting decisions. Specifically, in an environment where employees, who operate independently, can benefit from each other's knowledge and experiences, we investigate how target transparency affects target setting when the need for help among employees is high compared to when it is low.

Investigating target transparency is important because, on the one hand, high target transparency may help managers signal target setting policies and firm values more credibly because transparency mitigates potential employee concerns about the level of target adjustments based on prior targets and outperformance (e.g., Ross, 1977; Rothschild & Stiglitz, 1976). On the other hand, when target transparency is high, managers need to consider employees' fairness preferences about each other's relative targets to a greater extent.

We contend that these two forces suggest the effect of transparency

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[1] Likewise, evidence from census microdata on 14,000 manufacturing plants in the US also indicates a large variety in how transparent firms are in disclosing their targets internally (US Census Bureau, 2015). While in about half of contacted plants, managers and most production workers are fully aware of the plant's production targets, target transparency in the remaining plants is limited.

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on target setting decisions is not uniform across firms but likely depends on what type of effort a firm aims to motivate. Aside from effort at the individual level, an important type of effort in many firms is effort toward help among employees, as even independently operating employees can usually benefit to various degrees from each other's knowledge and experiences (e.g., Berger, Fiolleau, & MacTavish, 2019; Ichijo & Nonaka, 2007).[2] Thus, we use an environment in which the need for help among employees is either low or high, to test whether managers strategically adjust individual employee targets to motivate both effort at the individual level and help among employees when needed. Target transparency should then affect managers' target setting differently because, contingent on whether the manager would like to signal a "high performance" policy or a "helping" policy, the relevance of employees' fairness preferences with respect to each other's relative targets is likely to differ. The reason is that perceptions of being unfairly treated are associated with reduced willingness to cooperate and help others (Fisk, 2010; Zitek, Jordan, Monin, & Leach, 2010), which is *especially* problematic when the need for help among employees is high. Indeed, prior research cautions that using targets as management control instrument may harm helping behavior because a focus on achieving a challenging target can decrease employee willingness to cooperate and help others (Ordonez, Schweitzer, Galinsky, & Bazerman, 2009; Wright, George, Farnsworth, & McMahan, 1993).

For a long time, research has mainly focused on how performance targets can inform employees about organizational priorities and motivate individual effort. More recent work, however, suggests that targets may not only play an important role in guiding and motivating individual effort, but also facilitate coordination and cooperation among employees (Feichter et al., 2018; Holzhacker, Kramer, Matějka, & Hoffmeister, 2019; Matějka, 2018). For example, individual targets are common in sales settings, where salespersons, who operate independently, can nevertheless benefit from each other's help by sharing knowledge about individual customer needs, new product application possibilities, or effective ways to convince customers to buy their products (Berger et al., 2019; Ichijo & Nonaka, 2007). Likewise, even though individual unit level targets are common in multi-unit firms, unit managers often benefit from sharing capital equipment, labor, and knowledge with managers of other units (Holzhacker et al., 2019).[3]

We draw on economic and behavioral theory to predict that target transparency and need for help among employees interact to influence managers' target decisions. We examine a setting in which a manager sets new targets for two employees, both of whom have exceeded their previous period targets, but one employee (the stronger performer) exceeded it more than the other (the weaker performer). Our predictions are based on the two general effects of high target transparency outlined above. When the need for help is low, we first predict target transparency increases overall employees' target levels. The reason is that target transparency allows managers to better signal a "high performance" policy to everyone, thereby mitigating potential employee concerns about the level of target adjustments based on prior targets and target outperformance. Such concerns might arise when confronted with a challenging target in a situation of low target transparency. We also predict that high target transparency decreases the difference between targets of different employees within the firm (hereafter, target difference) in order to decrease fairness concerns about employees' relative treatment.

Second, we predict that when the need for help among employees is high, target transparency increases target levels less and decreases target difference more. The reason is that when the need for help is high, managers likely use transparency to signal a "helping policy" to everyone and, thus, adjust targets in a way consistent with also motivating help among employees. Therefore, when transparency is high, managers likely reduce stronger performers' targets in order to provide a credible signal that these performers are left with some free resources (e.g., time) they can use to help other employees. Weaker performers' targets are likely adjusted upwards when transparency is high as this makes their demand for help appear more credible and further reduces fairness concerns of stronger performers who are important for providing help.

In our main experiment, graduate business students (averaging more than six years of professional work experience) assume the role of a regional manager tasked with setting individual sales targets for two salespersons (a stronger and a weaker performer) for the upcoming year. We manipulate target transparency by informing participants that every salesperson knows both their own individual sales target *and* the individual sales target of the other salesperson (*high* target transparency) or that every salesperson knows their own individual sales target but does *not* know the individual sales target of the other salesperson (*low* target transparency). We manipulate the need for help by describing to participants the need for help among salespersons as *high* or *low*.

Consistent with our predictions, we find that target transparency interacts with the need for help as it increases the overall target levels when the need for help is low but not when it is high. Target transparency also reduces the target difference, and this reduction is greater when the need for help is high than when it is low. Notably, the need for help also affects the *approach* used to reduce target difference. Specifically, our results imply that managers use target transparency by adjusting targets to signal a "high performance" policy when the need for help is low, and to encourage help among employees when the need for help is high. We also conduct a follow-up experiment fully replicating our prior results and adding additional process evidence.

Our study contributes to the literature on transparency of control mechanisms by investigating how target transparency affects managers' target setting decisions in a controlled experimental setting (Evans, Moser, Newman, & Stikeleather, 2016; Grabner & Martin, 2021; Kelly, Dinovitzer, Gunz, & Gunz, 2020; Liu, Tian, & Zhang, 2020; Maas & Yin, 2021). We provide evidence that suggests the effect of transparency on targets is not uniform across firms but depends on what type of effort the firm aims to motivate. The findings of our study also contribute to expanding the general understanding of different types of transparency in firms. Prior work has argued that *pay* transparency may damage cooperation and willingness to help coworkers when it reveals large differences in pay among peers (Bamberger & Belogolovsky, 2017; Colella, Paetzold, Zardkoohi, & Wesson, 2007; Pfeffer & Langton, 1993; Zenger, 2016).[4] Thus, managers who wish to promote help among employees respond to *pay* transparency by decreasing pay differences

[2] Similar to prior research (e.g., Cox, 2004), we refer to costly individual actions that benefit another individual as "help" or "helping behavior" throughout the paper. As we consider a setting where employees, who operate independently, can take costly actions that benefit other employees or could benefit from such actions, we describe this setting as one where there is a need for help.

[3] Performance targets are only one component of incentive plans and firms may use alternative incentive mechanisms to motivate desired effort allocations. However, revising compensation contracts every period to motivate desired effort allocations among multiple dimensions is—in contrast to regular target revisions—often prohibitively costly (Matějka & Ray, 2017; Milgrom, 1988) or may lead to other disadvantages like, for example, free-rider incentives (e.g., Plott & Smith, 2008; Prendergast, 1999). Additionally, even if alternative incentive mechanisms were used, individual targets would need to be consistently adjusted as well, such that different components do not contradict each other (Matějka & Ray, 2017).

[4] Pay transparency is conceptually different from target transparency as pay transparency allows employees to compare their compensation (e.g., Castilla, 2015), while target transparency allows them to compare their targets. Knowledge of peer targets does not inform about the *fixed* component of peer compensation (negotiated salary, seniority adjustments, etc.). Likewise, knowledge about one's *own* target bonus does not necessarily imply knowledge about the target bonus of others.

among employees (Colella et al., 2007; Zenger, 2016). We show that managers who wish to promote help among employees respond to *target* transparency by decreasing target differences between stronger and weaker performing employees, which may have varied effects on pay differences among them.[5]

Our study also contributes to research on managers' use of discretion in performance evaluation. In particular, it enriches research on managers' use of discretion in target setting decisions (Aranda, Arellano, & Davila, 2014; Bol, Keune, Matsumura, & Shin, 2010; Feichter, 2023; Holzhacker et al., 2019; Libby & Lindsay, 2010) by enhancing our understanding on how managers can use this discretion when aiming at promoting help among employees. Prior research recommends that managers strive to set goals that are tailored to employees' individual performance potential while also avoiding perceptions of unfairness, as such perceptions can severely harm employee motivation and willingness to help others (Ordonez et al., 2009). Our study provides evidence that suggests managers are aware of the importance of peer comparisons in the presence of target transparency and, when the need for help among employees is high, strategically use their discretion to adjust targets in a way that is intended to not only motivate effort at the individual level but also to assure fairness and promote help among employees.

Additionally, our study has important implications for the design of effective information and compensation systems. Our results show how an institutional factor, target transparency, interacts with environmental factors such as need for help among employees to affect managers' target-setting decisions. This suggests that target transparency can be used by managers when the need for help is high to credibly signal to employees via targets that both effort at the individual level and effort toward helping other employees is desired. The results may also help explain anecdotal evidence of why companies that value help among employees make targets transparent throughout the entire organization (Doerr, 2018; Sull & Sull, 2018).

2. Theory and hypothesis development

2.1. Background

For scholars and practitioners target transparency is a controversial topic with little agreement regarding its overall impact, which explains why some firms adopt target transparency while others do not. On the one hand, target transparency could potentially offer a number of important benefits, such as (i) facilitate coordination and goal alignment by allowing employees to compare their objectives with those of their unit and the organization as a whole (Feichter et al., 2018; Sull & Sull, 2018), (ii) improve performance by allowing employees to identify role models and peers who can help them to do better (Darino, Sieberer, Vos, & Williams, 2019; Sull & Sull, 2018), and (iii) help a firm to signal its policy and values more credibly by showing to employees that the policy and communicated values are consistently implemented for all employees (Ross, 1977; Rothschild & Stiglitz, 1976; Sull & Sull, 2018). On the other hand, potential drawbacks of target transparency include (i) increased complexity of target setting decisions as such decisions become interrelated, i.e., a firm has to consider how adjusting an employee's target affects everyone else's fairness perceptions (Feichter et al., 2018; Ordonez et al., 2009), (ii) decrease in the firm's flexibility to set challenging targets that are, however, also tailored to the individual employee's performance potential (Feichter et al., 2018; Ordonez et al., 2009), and (iii) increase in risk of conflict between employees with different targets and between employees and managers (Bol, Kramer, & Maas, 2016; Feichter et al., 2018; Ordonez et al., 2009).

Research in target setting has mainly examined how managers set targets to motivate effort of a *single* employee (for a discussion, see Matějka, 2018). However, as target setting usually involves a manager and *multiple* employees, more recent empirical research studies the effect of past peer performance on target adjustments (e.g., Aranda et al., 2014; Holzhacker et al., 2019). Prior work, however, mainly focuses on the role past peer performance information plays in filtering out the common noise from performance evaluation and, thus, reducing information asymmetry about the reasons for observed performance-target differences (e.g., Casas-Arce, Holzhacker, Mahlendorf, & Matějka, 2018). Our paper, in contrast, focuses on whether and how managers consider employee fairness preferences arising from peer target comparisons when setting employee targets. Such preferences are likely particularly relevant in the presence of target transparency allowing employees to compare their target to those of other employees.

Another research stream suggests that targets may play an important role not only in motivating effort but also in addressing issues such as help among employees or employee retention (e.g., Feichter et al., 2018; Matějka & Ray, 2017). However, to our knowledge, the only study that examines how the need for help affects target setting decisions is Holzhacker et al. (2019). The authors use field data from an industrial services company, where business unit managers need to share equipment and staff with their peers and examine how the importance of help affects the use of past peer performance information in target setting. Results of their study suggest that targets can be used to mitigate the conflict between individual incentives and incentives to help one's peers.

The single firm setting in Holzhacker et al. (2019), however, does not capture variations in target transparency. Thus, it is limited in providing direct evidence that managers strategically adjust targets to motivate help among employees. Manipulating target transparency in a controlled experimental setting allows us to examine variations in targets contingent on transparency and, thus, provide direct evidence of how managers strategically adjust targets based on high vs. low need for help among employees. It also allows us to keep control over how transparent targets are and that, for example, employees do not share their targets even if not permitted by the firm as well as over other important characteristics, such as future market conditions and task similarity (Indjejikian, Matějka, & Schloetzer, 2014).

We study how target transparency affects managers' *target setting decisions* using a target-based (i.e., nonlinear) bonus scheme that includes a hurdle bonus and increasing variable bonus as it is commonly found in practice (e.g., Arnold, Artz, & Grasser, 2023; Merchant, Stringer, & Shantapriyan, 2018). Therefore, we use a setting in which managers can only set employee targets but can neither adjust the hurdle bonus (which is the same for all employees) nor the variable part of their bonus function. We also assume that the variable rate is calibrated such that it motivates additional performance increases. In such a setting, we predict that target transparency and need for help interact to influence managers' target setting decisions.

2.2. Effects of target transparency on managers' target setting decisions when the need for help is low

Economic and behavioral theory suggest that managers consider their own personal benefits and costs when setting employee targets (Benson, 2015; Bol et al., 2010). Because managers' short- and long-term compensation is typically linked to employee effort, managers' focus is on motivating employee effort at the individual level when the need for help is low. Target transparency impacts managers'

[5] On the one hand, decreasing target difference between stronger and weaker performers may increase pay difference among them for a *given difference* in performance levels between stronger and weaker performers. On the other hand, our theory suggests that this decrease in target difference intends to encourage help and, therefore may be accompanied by a decrease in performance difference due to the help provided by stronger to weaker performers. This, in turn, would increase the likelihood for weaker performers to meet their targets and receive the target bonus, which may decrease pay difference between stronger and weaker performers.

target decisions because it affects the available benchmarks against which employees compare their individual targets. When target transparency is low, the absolute level of the employee's own target in relation to their own prior performance and target (i.e., the extent to which the target adjustment reflects the employee's prior outperformance of their target) is the only information available to an employee to evaluate their target. As employees cannot observe each other's targets, managers can tailor targets to the individual employee. As a target generally needs to be *challenging but achievable* to motivate high levels of effort (Locke & Latham, 1990, 2002, 2013), we expect that managers will set challenging targets that are, however, also tailored to the individual employee's performance potential, i.e., job-related knowledge, expertise, etc. (Pfister & Lukka, 2019; Steenburgh & Ahearne, 2012).[6]

Additionally, managers are incented to set targets such that they avoid demotivating employees and having personally costly confrontations with them (Bol et al., 2010; Lawler, 1990; Murphy & Cleveland, 1991). When setting targets under low target transparency, a manager is likely concerned with employee discontent arising from comparing the *absolute* level of their own target to their own prior performance and target. Specifically, when target transparency is low, a manager is likely concerned that adjusting targets upwards can be perceived by employees, who can compare the *absolute* level of their targets to their own prior performances and targets, as punishing good performance. Thus, on the one hand, low target transparency allows managers to tailor targets to the individual employee's performance potential, thereby resulting in a rather large *target difference* between individual employees. On the other hand, this also implies that low target transparency limits the extent to which managers can increase employees' *target levels*.

In contrast, when target transparency is high, employees can compare their own target to those of other employees. Target transparency may heighten managers' inclination to consider employee fairness preferences, arising from *relative* peer target comparisons, when setting targets. The reason is that managers likely anticipate that employees' fairness perceptions are based more strongly on *relative* target comparisons than on *absolute* target levels. Prior research (Adams, 1963, 1965; Brown, Ferris, Heller, & Keeping, 2007; Greenberg, Ashton-James, & Ashkanasy, 2007) shows that individual behavior is strongly influenced by peer comparisons (i.e., comparing the ratio of one's own contribution to firm profit to one's compensation with those of other employees). In fact, fairness perceptions are often based more strongly on *relative* comparisons than on *absolute* expectations (Austin, McGinn, & Susmilch, 1980; Greenberg et al., 2007). This suggests that managers are likely to consider stronger performers' potential discontentment if a peer employee gets a (much) lower target for lower past performance, which could result in resentment and reduced future effort. To avoid demotivating stronger performers and having personally costly confrontations with them, managers likely differentiate targets less between stronger and weaker performers when target transparency is high, leading to lower target differences. Because managers are motivated to extend performance success of their unit as their own success strongly depends on it (Arnold, Artz, & Tafkov, 2022; Benson, 2015; Otley, 1999; Zimmerman, 2011), they are likely to generally favor adjusting weaker performers' targets upward over adjusting stronger performers targets downward as a way of reducing target difference.[7]

Importantly, target transparency also helps managers to more credibly signal their target setting policy to employees (e.g., Ross, 1977; Rothschild & Stiglitz, 1976) and, thus, can potentially also affect target levels. When target transparency is high, employees can clearly see whether a firm's policy (e.g., setting challenging targets for a given market condition) and communicated values (e.g., "high performance" values) are consistently implemented for all employees. Consistency is essential for perception of fairness (Leventhal, Karuza, & Fry, 1980; Shaw, Gupta, & Delery, 2002). As employees' fairness perceptions are likely to be based more strongly on *relative* target comparisons than on *absolute* target levels, it also makes it harder for employees, particularly for weaker performers, to complain about their own targets being too challenging. Thus, if targets consistently reflect a firm's policy and communicated values, target transparency likely reduces employee perceptions of being unfairly treated and resistance to challenging targets. By taking this into account, the manager is likely able to increase target levels more when target transparency is high than when it is low. However, as credibly signaling the consistency of its target setting policy is not without costs, signaling the firm's target setting policy likely implies that the firm has to give up (part of) its flexibility in tailoring targets to the individual. Thus, managers likely differentiate targets less between employees, leading to lower target difference.[8]

This leads to the following hypotheses:

HYPOTHESIS 1a. When the need for help among employees is low, target levels are higher when target transparency is high than when it is low.

HYPOTHESIS 1b. When the need for help among employees is low, target difference is lower when target transparency is high than when it is low.

2.3. Moderating effect of need for help

When the need for help is high, managers' focus is on motivating *both* employee effort at the individual level *and* effort toward help as in this case, help among employees likely leads to greater performance

[6] This also implies that performance targets for stronger performers are likely *nominally* higher than weaker performers' targets (e.g., Matějka, 2018; Matějka, Mahlendorf, & Schäffer, 2022). Although managers are likely to set nominally higher targets for stronger performers, these target levels are likely *easier to achieve* for stronger than for weaker performers. We discuss this issue further in our Method and Result section.

[7] One could argue that, when the variable rate is well-calibrated, managers might consider adjusting stronger performers' targets downward over adjusting weaker performers targets upward as a way of reducing target difference to avoid demotivating weaker performers by setting their targets at levels they are unlikely to achieve. If managers adjust stronger performers' targets downward, the stronger performer's incentives would mainly come from the linear part of the bonus function but not from the easy-to-achieve target. This has two downsides: On the one hand, targets have the strongest motivating effect when they are challenging, but achievable (Locke & Latham, 1990; 2002, 2013). On the other hand, this could increase the cost of labor by potentially overpaying the stronger performer.

[8] Even though target transparency does not necessarily imply pay transparency, our arguments are also consistent with prior work on pay transparency (Shaw, 2014; Shaw et al., 2002; Shaw & Zhou, 2021; Trevor, Reilly, & Gerhart, 2012). Specifically, when the need for help is low, decreasing target difference between stronger and weaker performers by increasing the weaker performer's target likely leads to higher pay difference (i.e., pay dispersion) among them. Prior work on pay transparency suggests that an increase in pay dispersion can have a positive effect on employees, because it strengthens the relation between contribution and payoff when (1) such dispersion is perceived as *legitimate* (i.e., attributed to productivity-relevant factors), and (2) individual contributions are *identifiable*. Identifiability of contributions is prevalent in settings like ours where individual targets are set for independently operating employees. Legitimacy of pay dispersion is also present in our setting because differences in performance are due to differences in effort and ability and employees are compared against similar standards.

Table 1
Descriptive statistics.

	Low Transparency		High Transparency	
	Low Need for Help	High Need for Help	Low Need for Help	High Need for Help
Target level stronger performer	12,825.00	12,562.50	13,062.50	12,108.82
	684.59	*1,152.90*	*853.91*	*977.60*
Target level weaker performer	11,525.00	11,343.75	12,237.50	11,708.82
	786.98	*1,179.25*	*727.44*	*882.51*
Average target level	12,175.00	11,953.13	12,650.00	11,908.82
	589.92	*1,069.34*	*723.42*	*874.15*
Target difference	1,300.00	1,218.75	825.00	400.00
	885.44	*930.39*	*650.64*	*642.26*
Target difficulty stronger perfomer	−175.00	−437.50	62.50	−891.18
	684.59	*1,152.90*	*853.91*	*977.60*
Target difficulty weaker perfomer	525.00	343.75	1,237.50	708.82
	786.98	*1,179.25*	*727.44*	*882.51*
No. of observations	16	16	16	17

Notes: The table displays means and *standard deviations* of the main dependent variables. The number of observations per condition is included in the last row of the table.
Target level stronger performer is the target level set by participants for the employee with a previous realized revenue of $13 million.
Target level weaker performer is the target level set by participants for the employee with a previous realized revenue of $11 million.
Average target level is the mean of the stronger performer's target level and the weaker performer's target level.
Target difference is calculated by subtracting target level weaker performer from target level stronger performer.
Target difficulty stronger performer is computed by subtracting $13 million from the target level stronger performer.
Target difficulty weaker performer is computed by subtracting $11 million from the target level weaker performer.

increases than if every employee works on their own task in isolation (Wang & Noe, 2010). This implies that managers' attention will shift to some extent away from a high-performance target setting policy toward encouraging employees to help each other (Wang, 2017). Such a focus is likely to induce managers to set targets in a way that is consistent with motivating helping behavior and use transparency to signal such helping policy throughout the firm.

When target transparency is high, managers are likely concerned that setting much higher targets for stronger than for weaker performers can lead to perceptions of being wronged and unfairly treated among stronger performers. Such perceptions are associated with reduced willingness to cooperate and help others (Brouer, Wallace, & Harvey, 2011; Fisk, 2010; Harvey & Harris, 2010; Zitek et al., 2010), which is especially problematic when the need for help among employees is high. The reason is that, in this case, the cost of alienating stronger performers is even higher because they are more likely to possess the level of knowledge and expertise that allows them to provide useful help to other employees. This could induce managers to reduce stronger performers' targets. Additionally, managers may wish to reduce stronger performers' targets to provide a credible signal that these performers are left with some free resources (e.g., time) they can use to help other employees. If stronger performers' targets were high, this would imply that stronger performers are discouraged to help others because helping others diverts time and effort away from working on their own task and, thus, reduces chances of achieving their own high target. Consistent with this reasoning, research finds that individuals who are given incentives for achieving difficult goals exhibit lower levels of helping behavior than individuals who are given incentives for achieving easy or moderate goals (Wright et al., 1993).

Whereas managers are motivated to *reduce* stronger performers' targets when the need for help is high, they may wish to simultaneously *increase* weaker performers' targets when transparency is high compared to when it is low for at least two reasons. First, setting higher performance targets for weaker performers makes any weaker performers' demand for help from stronger performers appear more credible, which increases the likelihood that help is actually provided. Second, increasing performance targets for weaker performers allows managers to reduce unfairness perceptions of stronger performers due to the discrepancy between contributions to firm performance/compensation ratios of both groups. [9]

Thus, we argue that when target transparency is high, managers will signal their intention to motivate effort toward help by reducing the target of the stronger performer and increasing the target of the weaker performer. The argument is consistent with prior research providing evidence that managers respond to details in the work environment when designing incentives (Falk, Fehr, & Huffman, 2008; Harbring & Irlenbusch, 2011), and use their discretion strategically to signal their intention to motivate specific types of effort (Bol, Hecht, & Smith, 2015).

In contrast, when target transparency is low, managers cannot credibly signal the help among employees' policy consistently throughout the firm by increasing or decreasing individual target levels, as employees cannot observe each other's targets. When target transparency is low, setting higher performance targets for weaker performers does not make weaker performers' demand for help appear credible because stronger performers cannot observe the higher targets. Reducing stronger performers' targets in such cases could then be counterproductive as it (i) presents these performers with less challenging, easier to achieve targets, thereby having a negative effect on their motivation (Locke & Latham, 1990, 2002, 2013), and (ii) can have the downside of increasing the cost of labor due to overpaying employees. Likewise, managers are unlikely to substantially increase weaker performers' targets, as these targets can become too difficult for them to achieve when little or no help is provided.

These arguments imply that when target transparency is low, a higher need for help among employees likely has little effect on target difference. They also imply that the extent to which transparency

[9] Help among employees reduces to some extent the identifiability of individual contributions. The reason is that helping others diverts time and effort away from working on one's own task. Thus, stronger performers' performance likely understates their contribution (as it is negatively affected by the time and effort spent helping weaker performers) and weaker performers' performance likely overstates their contribution (as it is positively affected by the help they receive from stronger performers). This also implies that the extent to which pay dispersion increases under high target transparency is unclear because the decrease in target difference caused by target transparency under high need for help is accompanied by a decrease in performance difference due to the help provided by stronger to weaker performers.

Fig. 1. Effect of Target Transparency and Need for Help on Average Target Level and Target Difference
Notes: The figures display average target levels (Panel A) and mean target difference (Panel B) under low and high transparency when the need for help is low (black line) and when it is high (grey line).
Average target level is the mean of the stronger performer's target level and the weaker performer's target level.
Target difference is calculated by subtracting the target level of the weaker performer from the target level of the stronger performer. The stronger performer is the employee with a previous realized revenue of $13 million. The weaker performer is the employee with a previous realized revenue of $11 million.

reduces target difference will be greater when the need for help is high than low. Additionally, the arguments imply that the overall effect of target transparency on target *levels* is likely less positive when the need for help is high than when it is low. The reason is that, when the need for help is high, managers' attention shifts to some extent away from using transparency to signal a high-performance target setting policy toward using transparency to motivate helping behavior throughout the firm. We state the following hypotheses:

HYPOTHESIS 2a. The positive effect of target transparency on target levels is lower when the need for help among employees is high than when it is low.

HYPOTHESIS 2b. The negative effect of target transparency on target difference is greater when the need for help among employees is high than when it is low.

3. Method

3.1. Experimental design and task overview

We use a 2 × 2 between-subjects design in which we vary two factors: target transparency (high vs. low) and need for help (high vs. low).[10] In our experiments, participants take over the role of a regional manager in a firm manufacturing 3D printers. Their task is to set the targets for two salespersons in one of the regional units the manager is responsible for. Thus, consistent with the commonly observed practice of determining the general target policy at the top management level (e.g., Feichter et al., 2018), our scenario reflects a case in which the firm's or the business unit's decision about target transparency is exogenous to the (middle) manager who sets the target. This allows us to study the causal effect of target transparency on target levels and target difference. Additionally, as the focus of our study is on examining managers' target setting decisions in the current period *in anticipation* of employees' behavior in future periods, a single period setting increases the internal validity of our study (Bol et al., 2015).

The case informs participants that in the prior year, both salespersons had the same target ($10 million) because both were operating in areas that had exactly the same expected market conditions.[11] The use of the same initial target also reflects information asymmetry between managers and employees about employees' individual performance potential, which is common in practice (Milgrom & Roberts, 1992). The case also informs participants that, owing to the same market conditions in the previous year, any difference in the realized performance of both salespersons is primarily due to differences in their abilities and/or effort. We made these design choices to ensure that the differences between salespersons' prior performance explained in the following are likely attributed to causes that are internal to the salespersons (ability and/or effort) and not external causes (e.g., market conditions). Sales tasks can be either driven by effort (e.g., the time invested in identifying suitable customers or in preparing and conducting customer visits) or ability (e.g., the ability to understand a customer's needs and its production process or to turn customer's needs into a sales deal) and it might not always be unambiguous whether a task is more strongly driven by the one or the other. Whereas in our experiment we did not take any position as to whether the observed performance differences are driven by differences in employees' effort or ability, in practice, it may be clearer to a manager whether a task is effort- or ability-driven. In case our operationalization created some noise, this noise works against us finding results for our hypotheses. We discuss this issue further in our Results section.

The case indicates that one salesperson outperformed the other, although both exceeded the prior year target (i.e., one salesperson realized a revenue of $13 million whereas the other salesperson realized a revenue of $11 million). Participants are also informed that both salespersons' tasks are very similar, which is an important prerequisite for meaningfully comparable targets. The difference between realized revenues is sufficiently large to prevent participants from attributing differences between the salespersons' prior performance mainly to noise.[12] Thus, our scenario allows us to examine the extent to which participants' target setting decisions are affected by both the absolute and relative performance of the two salespersons.

The case informs participants that salespersons' bonuses depend on meeting or exceeding the target. Specifically, when a salesperson reaches or exceeds her/his target, s/he receives a bonus of $15,000 for reaching the target and an additional bonus of $3 for every $1,000 of revenues above the target. The case also informs participants that their own success and career advancement strongly depend on the success of their sales units in terms of realized revenues.

Participants can only set the target for the two salespersons but cannot adjust the target bonus or the variable part of their bonus function. This allows us to unambiguously observe the effects of target transparency on target level and target difference as our primary variables of interest. Additionally, in practice, managers may not always be able to adjust bonus schemes individually for their salespersons, but often have more flexibility in setting their salespersons' targets at the beginning of the year (Matějka, 2018; Matějka & Ray, 2017; Milgrom, 1988).

We use a target-based (i.e., nonlinear) bonus scheme that includes a hurdle bonus and increasing variable bonus as it is commonly found in practice (e.g., Arnold, Artz, & Grasser, 2023; Merchant et al., 2018). An alternative incentive mechanism could have been a linear bonus function including a target (i.e., *bonus = alpha * (performance – target)*). However, such a bonus scheme would ignore that nonlinear target-based incentive schemes often perform better than linear incentives schemes (Bonner, Hastie, Sprinkle, & Young, 2000; Bonner & Sprinkle, 2002), as specific, challenging goals can motivate greater effort than vague "do your best" goals (Locke & Latham, 1990, 2002, 2013).

Finally, as an outlook for the following year, participants are informed that due to intensified competition, the firm's current objective for the relevant regional unit is to maintain its current revenue level and that a change in both salespersons' market conditions is not expected. This is done to assure that participants do not increase targets simply because they assume that market conditions improve in the following year.

3.2. Target transparency manipulation

We inform participants that both salespersons know their own realized performance as well as the realized performance of the other

[10] Both the main and the follow-up experiment were approved by the Institutional Review Board (IRB) of the university where the authors collected the data.

[11] The exact wordings of the scenarios for the four conditions are included in the Online Appendix.

[12] We asked participants on the PEQ how similar they perceived the salespersons' tasks on a range from 1 (not at all similar) to 7 (extremely similar) and find an average score of 5.94 that is not significantly different across conditions (one-way ANOVA, $p = 0.67$, two-tailed) but significantly higher than the midpoint of the scale in all conditions (t-tests, all p's < 0.01, two-tailed). That means, any observed differences cannot be explained by differences in perceived similarity of the salespersons' tasks. We also asked participants, separately for every employee, whether they think that this employee's previous performance was due to factors outside their control (from 1 (not at all) to 7 (absolutely)). Scores for the stronger and the weaker performer are not significantly different from each other (*t*-test, 3.23 vs. 3.07 $p = 0.14$, two-tailed). Additionally, both scores are significantly lower than the midpoint of the scale in all conditions (t-tests, all p's < 0.05, two-tailed). Thus, we can exclude that our results are driven by participants perceiving influence of noise on the employees' prior performance to be substantial or different between employees.

salesperson—as it is often the case in practice (Shang, Abernethy, & Hung, 2020). Because target transparency is a continuum, we capture one end of the continuum in which target transparency is absent (low target transparency) as a baseline setting and compare it to a point along the continuum in which target transparency is present (high target transparency). We inform participants in the *Low Target Transparency* condition that every salesperson will know their own individual sales target but will *not* know the individual sales target of the other salesperson. We inform participants in the *High Target Transparency* condition that every salesperson will know both their own individual sales target *and* the individual sales target of the other salesperson.[13]

3.3. Need for help manipulation

The task of the salespersons is described as an individual sales task in a business-to-business environment. Generated revenues depend on both effort and sales abilities. The case made explicit that it is important that a salesperson puts in enough effort to visit potential client firms and understand their production process and that it is important that a salesperson has the ability to discover opportunities for using 3D printers in the production process and to convince firms to buy 3D printers. Because both salespeople operate independently, our task is not a team-based task that may require team-based compensation. Salespersons receive individual performance targets, which is common practice in sales. However, salespersons, who operate independently, can nevertheless benefit from each other's experiences by sharing knowledge about individual customer needs, new product application possibilities, or effective ways to convince customers to buy their products (Berger et al., 2019; Ichijo & Nonaka, 2007).

We view the need for help among employees as a continuum in practice. Via our manipulation, we capture two different points along this continuum—though not the endpoints of it. In the *Low Need for Help* condition, we inform participants that there is a low need for help and cooperation among salespersons. In this condition, salespersons cannot benefit a lot from each other's experience because 3D printer applications are described as usually very specific to individual customers and can rarely be transferred to other customers. Consequently, recently introduced new firm guidelines do not emphasize help among salespersons. In the *High Need for Help* condition, we inform participants that there is a high need for help and cooperation among salespersons. In this condition, they can profit from each other's experiences, for example, when other salespersons have found new application possibilities for 3D printers or new ways to convince customers of their products. Therefore, the recently introduced new firm guidelines emphasize help among salespersons. The new firm guidelines are likely to induce participants in the *High Need for Help* condition to encourage *more* help from salespersons than before.

We chose to operationalize help via knowledge sharing because in practice the knowledge an employee accumulates through their personal experiences (i) can be valuable only in the specific context in which this employee operates and loses its value when applied in a different context or (ii) can also be valuable to other employees in the firm (Haesebrouck, Van den Abbeele, & Williamson, 2021; Ichijo & Nonaka, 2007). This allows us to manipulate the need for help in a plausible way in our experiment while holding the employee task constant across conditions. We expect our theory to generalize to various settings where independently operating employees can benefit from other employees spending time, effort, or other costly resources to help them.[14]

3.4. Participants and procedures

Participants of our main experiment were 72 graduate business students from a large US university. They are, on average, 28 years old and 60 percent of them are female. They received a $10 Amazon gift card for their participation. Seven participants failed at least one manipulation check and were excluded from the sample. Thus, our final sample consists of 65 participants.[15]

Participants have, on average, 6.2 years of professional work experience and 2.4 years of experience in target setting. Eighty-five percent of the participants have at least one year of experience in target setting. Thus, we view our participants as appropriate to inform us about managers' target setting decisions.[16] There are no significant differences across experimental conditions for gender, age, work experience, or target setting experience (all p's > 0.20).

The experiment was conducted during three regular classroom sessions and took an average of 30 min to complete. We randomly assigned participants to one of the four experimental conditions. We provided participants with two envelopes. The first envelope contained the case and our measurement of our dependent and additional process and control variables. The second envelope contained the manipulation check and demographic questions. Participants completed the first envelope before opening the second envelope.

4. Results

4.1. Descriptive statistics

Table 1 reports descriptive statistics on individual target levels for stronger and weaker performers, the *average target level* when combining both, *target difference*, and *target difficulty* separately for stronger and weaker performer in all conditions. *Target difference* is calculated by subtracting *target level weaker performer* from *target level stronger performer*. *Target difficulty* is calculated by subtracting 11,000 (13,000) from *target level weaker (stronger) performer*. The higher the number, the more difficult the target is to achieve based on prior performance. Fig. 1

[13] Importantly, because we intended to keep participants' focus on thinking about target, not pay transparency, we do not include any hints about pay transparency into our instructions. In our follow-up experiment, described in the Supplemental Analyses section, we asked participants to indicate, on the PEQ, how concerned they were that salespersons might know each other's pay (on a seven-point Likert scale). In all conditions, concerns are rather low and always significantly below 4 (t-test, all p's < 0.02), but they are somewhat higher under high target transparency (3.27 vs. 2.09, t-test, $p < 0.01$). When we regress both *average target levels* and *target difference* on *concerns about pay transparency* for all conditions, we do not find any significant effect (all p's > 0.10).

[14] Related to our setting of high vs. low need for help are settings of high (low) work interdependence (Arnold & Tafkov, 2019; Steiner, 1972; Thompson, 1967). Whereas there is some overlap in our setting with high vs. low work interdependence, there are also at least two important differences. First, whereas coordinating employee actions is paramount to achieving employees' performance goals in high work interdependence settings (Cummings, 1978; Thompson, 1967; Shaw et al., 2002; Trevor et al., 2012), a high need for help can also exist in settings like ours in which employees operate independently. Second, in contrast high work interdependence settings, identifiability of individual contributions may be easier in settings like ours where individual targets are set for independently operating employees. We discuss the implications of these differences between the two settings for future research in our Conclusion section.

[15] We included two manipulation-check questions. The first question asked participants to recall whether every salesperson knows the individual sales target of the other salesperson. The second question asked participants to recall whether there is low or high need for help among salespersons. The frequency of participants failing manipulation checks is not significantly different across conditions ($\chi^2 = 0.47$, $p = 0.92$). All statistical inferences about our hypotheses tests remain the same when we include these participants into our sample.

[16] We re-ran all hypotheses tests and supplemental analyses using only participants with at least one year of experience in target setting and find that all statistical inferences remain the same.

Table 2
Effect of transparency and need for help on target level.

	Target level
Constant	12,175.00 (145.61) <0.01***
Transparency	475.00 (230.41) 0.02**
Need for help	−221.88 (301.45) 0.46
Transparency*Need for help	−519.30 (408.34) 0.10*
R^2	0.08
N	130

Notes: The table displays results of OLS regressions with standard errors clustered at the participant level. Numbers reported in the table reflect regression coefficients, (standard errors), and p-levels. The regression includes two observations per participant, one for the weaker and one for the stronger performer. *$p \leq 0.1$; **$p \leq 0.05$; ***$p \leq 0.01$, p-levels are one-tailed for directional predictions and two-tailed otherwise.
Transparency is an indicator variable equal to 1 when target transparency is high and 0 when transparency is low.
Need for help is an indicator variable equal to 1 when the need for help is high and 0 when it is low.

Table 3
Effect of transparency on target difference (ANOVA).

Panel A: Planned Contrast to Test H2 – Target Difference

Source of Variation	df	Mean Square	F	p-value
Model contrast	1	8311254.2	13.45	<0.01***
Residual	3	54841.5	0.35	0.97
Error	61	617940.6		
Contrast weights				
Low Transparency/Low Need for Help =				2
Low Transparency/High Need for Help >				2
High Transparency/Low Need for Help >				−1
High Transparency/High Need for Help				−3

Panel B: Simple Effects for Each Help Condition – Target Difference

Source of Variation	Sum of Squares	df_	Mean Square	t	p-value (one-tailed)
Effect of High Transparency under Low Need for Help	1805000.0	1	1805000.0	1.71	0.05**
Effect of High Transparency under High Need for Help	5525322.0	1	5525322.0	2.99	<0.01***

Notes: The table displays results of an omnibus ANOVA and planned contrast analysis (Panel A) and simple effects tests (Panel B). *$p \leq 0.1$; **$p \leq 0.05$; ***$p \leq 0.01$, p-levels are two-tailed for the omnibus ANOVA and the planned contrast (Panel A) and one-tailed for the simple effects (Panel B). For the simple effects tests, F-values are converted to t-values to make directional inferences.

illustrates the results for *average target level* (panel A) and *target difference* (panel B).

Table 1 shows that, in line with prior empirical evidence (see Indjejikian et al., 2014), although the stronger performer's target level is *nominally* and significantly higher than the weaker performer's target level in all conditions (all *p's* ≤ 0.02), the target is still easier to achieve as the stronger performer's *target difficulty* is significantly lower in all conditions (all *p's* < 0.01). We discuss our other findings in our hypotheses tests below.

4.2. Hypotheses tests

We test H1a and H2a jointly in a regression model. We regress *target levels* on an indicator variable *transparency* (equal to 1 when target transparency is high and 0 when it is low), an indicator variable *need for help* (equal to 1 when the need for help is high and 0 when it is low) and the interaction of the two variables. As every participant sets a target for each employee, this implies two observations per participant. All regressions in this paper using multiple observations within participant cluster standard errors at the participant level.

As reported in Table 2, the coefficient of *transparency*, reflecting the effect of transparency when the need for help is low, is significantly positive ($\beta = 475.00$, $p = 0.02$), supporting H1a.[17] Additionally, the coefficient of the interaction term, reflecting the reduced effect of transparency when the need for help is high, is negative and marginally significant ($\beta = -519.30$, $p = 0.10$), supporting H2a. A subsequent Wald test reveals that the effect of transparency on target levels when the need for help is high is not significant (475.00–519.30 = −44.30, $p = 0.90$). Rerunning the regression while controlling for whether the target is set for the stronger performer leaves our results unaffected.

Together, H1b and H2b imply an ordinal interaction, such that the effect of high target transparency on *target difference* is negative when the need for help is low and is even more negative when the need for help is high. In contrast to H1a and H2a, our theory development for H1b and H2b allows us to derive exact contrast weights for the ordinal interaction predicted. For this reason and because an omnibus ANOVA may lack sufficient statistical power to discover such ordinal interactions (e.g., Bobko, 1986; Buckless & Ravenscroft, 1990), we use planned contrasts to test our set of hypotheses (e.g., Hays, 1994; Keppel, 1991; Kirk, 1982).[18] As recommended in Rosnow and Rosenthal (1995), the weights to be used in a contrast model for our predicted pattern are +2, +2, −1, and −3.

We then apply the three-step approach suggested in Guggenmos, Piercey, and Agoglia (2018) in our hypothesis testing. First, we visually evaluate the fit of our predicted contrasts, as shown in panel B of Fig. 1, and conclude that our observed means fit closely to our predicted pattern of contrast. Second, panel A of Table 3 reports the results of our contrast model test. The model contrast is highly significant ($p < 0.01$), supporting the data pattern predicted in H1b and H2b. Panel A also shows that the residual is insignificant ($p = 0.97$).

Panel B reports the simple effects for target transparency. Consistent with H1b, the effect of target transparency is significant when the need for help is low ($p = 0.05$). When the need for help is high, the effect of target transparency is significantly negative as well ($p < 0.01$).[19]

Finally, we calculate the relative size of the residual between-cells variance, q^2, which measures how much of the systematic (i.e., between-cells) variance is not explained by our contrast. In our case, q^2 amounts to 0.015, i.e., only 1.5% of the systematic variance is not

[17] P-levels are one-tailed for directional expectations and two-tailed otherwise.

[18] An omnibus ANOVA shows a significant main effect of transparency ($p < 0.01$, one-tailed equivalent) but neither a significant main effect of need for help ($p = 0.20$, two-tailed) nor a significant interaction effect ($p = 0.19$, one-tailed equivalent). However, as suggested in Rosnow and Rosenthal (1995, 1996), contrast analysis provides higher statistical power without increasing the likelihood of Type I error compared to an omnibus F-test for an a priori specified ordinal interaction. Thus, for these types of interactions, contrast coding is not only more powerful, but also more efficient.

[19] Additional simple effects analyses show that the need for help has no significant effect on *target difference* when the target transparency is low ($p = 0.77$, two-tailed), but decreases *target difference* marginally significantly when the target transparency is high ($p = 0.06$, one-tailed).

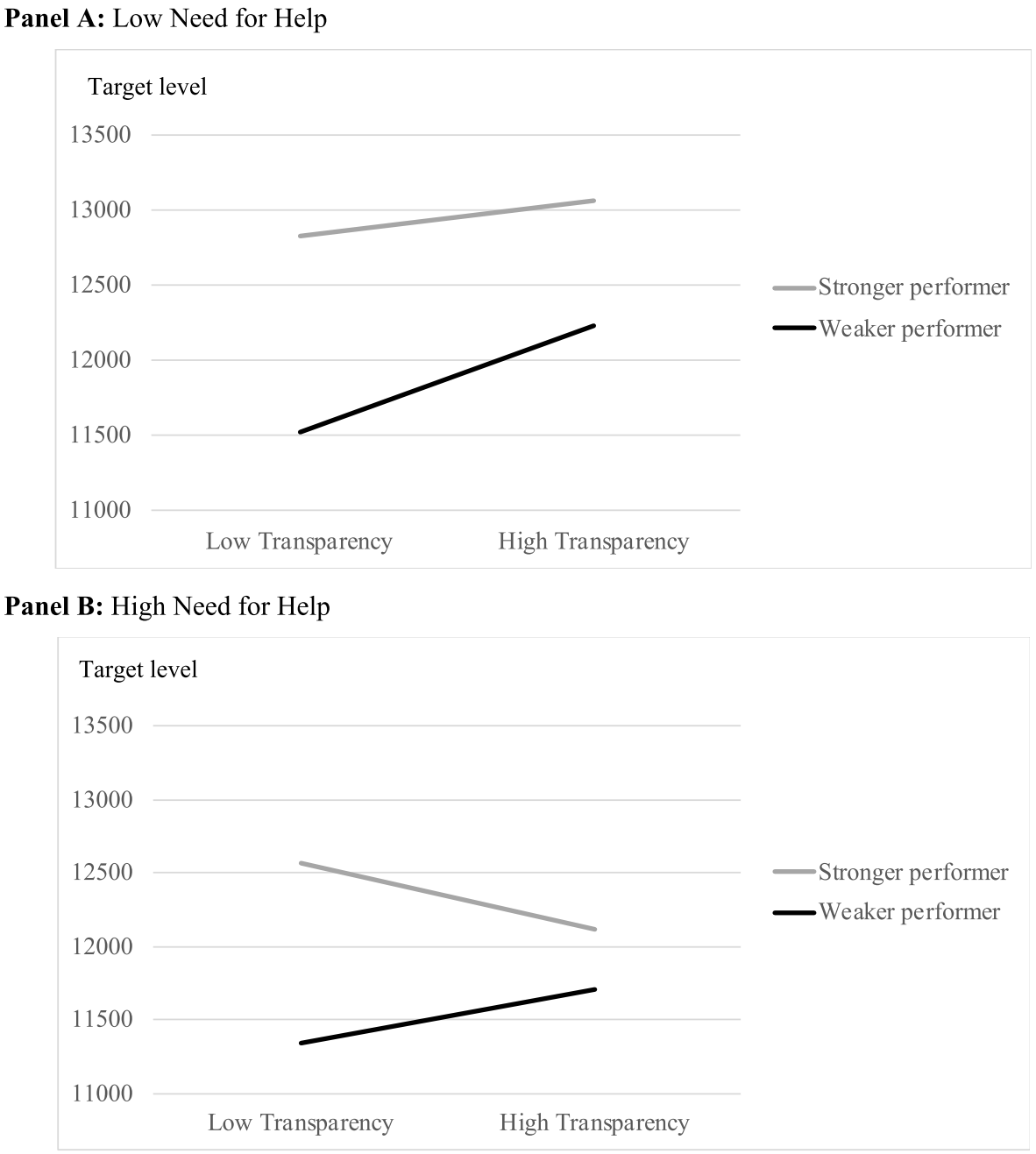


Fig. 2. Effects of Transparency and Need for Help on Individual Target Levels
Notes: The figure displays the mean target levels of the stronger (grey line) and weaker performer (black line) under low and high transparency when the need for help is low (Panel A) or high (Panel B).
The stronger performer is the employee with a previous realized revenue of $13 million. The weaker performer is the employee with a previous realized revenue of $11 million.

explained by our contrast, which suggests a very good fit of our predicted contrast weights to the pattern of our observed results. Thus, our results support H1b and H2b.[20]

[20] We also ran analyses of observed power for our hypotheses tests. For H1a and H2a, running power analyses based on a regression analysis for average target levels and a one-tailed alpha level of 0.10 (0.05), we find power levels of 0.87 (0.77). For H1b and H2b, we test the power level of the contrast codes underlying our hypotheses tests. Using a two-tailed alpha level of 0.10 (0.05), we find a level of observed power of 0.98 (0.95). Both power levels exceed or are close to the generally accepted threshold of 0.80 (Cohen, 1988).

4.3. Supplemental analyses

4.3.1. Individual target levels and signaling

As reported in Table 1 and illustrated in Fig. 2, the changes in individual target levels depend on whether the need for help is high or low. When it is *low* (Panel A), target transparency shifts both the stronger and weaker performer's target levels upwards, explaining the observed overall increase in target levels. As the effect is more pronounced for the weaker performer (from 11,525.00 to 12,237.50) than for the stronger performer (from 12,825.00 to 13,062.50), this explains the decreased *target difference*. For this condition, we regress *target level* on the indicator variable *Transparency*, an indicator variable *Stronger performer*

Table 4
Effect of transparency and prior performance on individual target levels.

Target level	Low Need for Help Model 1	High Need for Help Model 2
Constant	11,525.00	11,343.75
	(198.32)	(296.81)
	<0.01***	<0.01***
Transparency	712.50	365.07
	(270.07) 0.01***	(367.03) 0.33
Stronger performer	1,300.00	1,218.75
	(223.13)	(234.17)
	<0.01***	<0.01***
Transparency*Stronger performer	−475.00	−818.75
	(276.90) 0.10*	(282.00) 0.01***
R^2	0.39	0.16
N	64	66
Simple effect of transparency on target level stronger performer	237.50 $p = 0.40$	−453.68 $p = 0.24$

Notes: The table displays results of OLS regressions with standard errors clustered at the participant level. Numbers reported in the table reflect regression coefficients, (standard errors), and p-levels. Each regression includes two observations per participant, one for the weaker and one for the stronger performer. *$p \leq 0.1$; **$p \leq 0.05$; ***$p \leq 0.01$, all p-levels are two-tailed.
Transparency is an indicator variable equal to 1 when target transparency is high and 0 when transparency is low.
Stronger performer is an indicator variable equal to 1 when the employee is the stronger performer and 0 when the employee is the weaker performer.

(equal to 1 when the employee is the stronger performer) and the interaction of both variables. As reported in Table 4, Model 1, the coefficient of *Transparency,* representing the effect for the weaker performer, is significantly positive (712.50, $p = 0.01$), but the effect is not significant for the stronger performer (Wald test, 237.5, $p = 0.40$). As expected, the interaction is significant (−475.00, $p = 0.10$), implying a smaller increase for the stronger performer.[21] These results are consistent with managers favoring adjusting targets upward over adjusting targets downward as a way of reducing target difference and provide support for our theory that managers signal a "high performance" policy with challenging targets for everyone under high target transparency when the need for help is low.

When the need for help is high (Panel B), the target levels of both employees are adjusted in different directions. While the stronger performer's target level *decreases* (from 12,562.50 to 12,108.82), the weaker performer's target level *increases* (from 11,343.75 to 11,708.82), explaining why *average target level* changes only slightly, but *target difference* decreases strongly. Model 2 of Table 4 shows that the increase in *target level* for the weaker performer, represented by the coefficient of *transparency*, is insignificant (365.07, $p = 0.33$). However, as expected, the interaction is significantly negative (−818.75, $p = 0.01$), suggesting that the target level for the stronger performer increases less than for the weaker performer. The Wald test below the table reveals that the decrease in the stronger performer's target level is not significant at conventional levels (−453.68, $p = 0.24$). These results are consistent with our theory that when target transparency is high, managers use targets to encourage helping behavior and asking for help, and to increase feelings of fair treatment, particularly for the stronger performer.

4.3.2. Ability-vs. effort-driven performance differences

On our post-experimental questionnaire (PEQ), we asked participants whether differences in performance between salespersons were more due to differences in effort or ability levels (on a scale from −3 (Entirely due to differences in effort) over 0 (Equally due to differences in effort and ability) to 3 (Entirely due to differences in ability)). We find that, in line with our instructions that any difference in the realized performance of both salespersons is primarily due to differences in their abilities and/or effort, participants' attribution to effort or ability is relatively equally distributed (ability, answer >0: 25 observations; undecided, answer = 0: 18 observations; effort, answer <0: 22 observations).[22] As any effect of helping is likely small when differences are mainly attributed to effort, we re-ran our hypotheses tests excluding "effort-driven" participants.

We first re-ran the regression used to test H1a and H2a. After excluding effort-driven participants, we find stronger results for our hypotheses despite smaller sample size. Specifically, transparency has a significantly positive effect on target level when the need for help is low (692.27, $p < 0.01$, one-tailed), and this effect is significantly smaller when the need for help is high (interaction: 658.93, $p = 0.07$, one-tailed). We also ran the regression for the effort-driven subsample but do not find any significant results (all p's > 0.70).

We also regress *Target Difference* on *Transparency, Need for help* and their interaction, excluding effort-driven participants. Again, in line with our underlying theory, we find stronger results for the pattern predicted in H1b and H2b in this subsample. Specifically, both simple effects of target transparency on *target difference* are negative (high need for help: 1,291.67, $p < 0.01$, one-tailed; low need for help: 584.55, $p = 0.02$, one-tailed). Additionally, the interaction term is significant (−707.12, $p = 0.04$, one-tailed), indicating a larger effect of target transparency when the need for help is high than when it is low. [23] Again, we do not find any significant results in the effort-driven subsample (all p's > 0.70). This provides support for our theory that help is particularly important when employees differ in ability.

4.3.3. Post-experimental questionnaire

In the PEQ, we asked participants about their motives when setting targets. First, we asked whether in their target setting decision, they had considered encouraging help (on a scale from 1 (not at all) to 7 (to a large extent)). Consistent with our theory, this consideration was significantly more important when the need for help was high (transparency low: 5.50; transparency high: 5.65) than when it was low (transparency low: 2.69; transparency high: 3.19, t-tests, both p's < 0.01). In line with our theory, this shows that a high need for help always increases managers' motivation to induce such behavior but makes them set targets differently contingent on their ability to signal their motivation (high target transparency) or not (low target transparency).

Second, we argued in the theory development that when target transparency is high, managers consider employees' social preferences and interest in how fairly they are treated by their managers compared to other employees. To analyze participants' fairness motives, we asked them to indicate, on the PEQ, their agreement to the questions "I wanted to have the salespersons think that their sales targets are fair" and "I wanted to be fair when setting sales targets," (on a 7-point Likert scale).

[21] All p-levels reported in the Supplemental Analyses section are two-tailed unless indicated otherwise.

[22] The means of this question are similar and not significantly different across conditions (one-way ANOVA, $p = 0.35$). Additionally, the classification into "ability-driven", "effort-driven" or "undecided" is not significantly different across all conditions ($\chi^2 = 5.01$, $p = 0.54$). This indicates that the attribution towards effort-vs. ability-driven tasks is heterogenous across participants and not affected by our manipulation of the need for help.

[23] We also re-ran our analyses for observed power for the subsample that excludes effort-driven participants. For H1a and H2a, we find power levels of 0.97 (0.94) for a one-tailed alpha level of 0.10 (0.05). For H1b and H2b, we ran the analyses of observed power based on the regression just reported and, for a one-tailed alpha level of 0.10 (0.05), we find power levels of 0.99 (0.99).

Table 5
Descriptive statistics follow-up experiment.

	Low Transparency		High Transparency	
	Low Need for Help	High Need for Help	Low Need for Help	High Need for Help
Target level stronger performer	12,668.75 *685.21*	12,818.18 *448.69*	13,052.27 *860.85*	12,330.95 *425.87*
Target level weaker performer	11,137.50 *501.14*	11,218.18 *775.29*	12,134.09 *774.81*	11,602.38 *563.36*
Average target level	11,903.13 *517.54*	12,018.18 *560.78*	12,593.18 *784.07*	11,966.67 *436.77*
Target difference	1,531.25 *608.24*	1,600.00 *588.99*	918.18 *472.97*	728.57 *484.14*
Target difficulty stronger performer	−331.25 *685.21*	−181.82 *448.69*	52.27 *860.85*	−669.05 *425.87*
Target difficulty weaker performer	137.50 *501.14*	218.18 *775.29*	1,134.09 *774.81*	602.38 *563.36*
No. of observations	24	22	22	21

Notes: The table displays means and *standard deviations* of the main dependent variables of the follow-up experiment. The number of observations per condition is included in the last row of the table.
Target level stronger performer is the target level set by participants for the employee with a previous realized revenue of $13 million.
Target level weaker performer is the target level set by participants for the employee with a previous realized revenue of $11 million.
Average target level is the mean of the stronger performer's target level and the weaker performer's target level.
Target difference is calculated by subtracting target level weaker performer from target level stronger performer.
Target difficulty stronger performer is computed by subtracting $13 million from the target level stronger performer.
Target difficulty weaker performer is computed by subtracting $11 million from the target level weaker performer.

Both questions load on a single factor (both loadings >0.75), and we use the factor score for further analyses.[24] A *t*-test shows that fairness considerations are significantly more important when target transparency is high than when it is low (factor scores: 0.43 vs. −0.44, $p < 0.01$). Additionally, in line with our theory, the higher this consideration, the lower is the salespersons' *target difference* ($r = -0.32$, $p < 0.01$).

Finally, we use the question "Increasing a salesperson's target in a period after he/she has exceeded the previous period target punishes good performance," (on a scale from 1 (strongly disagree) to 7 (strongly agree)), to measure participants' performance-oriented attitude as it relates to our setting in which all salespersons have exceeded their prior targets. Agreement to this question in the Low Need for Help/High Transparency condition is significantly lower than in the other three conditions (2.94 vs. 3.92, *t*-test, $p = 0.04$, two-tailed). This is consistent with our theory that participants likely want to signal a "high performance" policy to their salespersons in the Low Need for Help/High Transparency condition.

4.3.4. Follow-up experiment

To test the robustness of our findings and to gain further understanding of the theoretical process behind these findings, we re-ran our experiment at the same US university as our main experiment using the same instrument but modifying some of the questions on the PEQ. Participants of the follow-up experiment were 97 business students (82 undergraduate and 15 graduate). They are, on average, 22 years old and 50 percent of them are female. The use of undergraduate students is justified and common in accounting research using theoretical arguments based on fairness concerns to examine managers' target setting decisions (e.g., Feichter, 2023). Participants received a $10 Amazon gift card for their participation. Eight participants failed at least one manipulation check and were excluded from the sample. Thus, the final consists of 89 participants. They have, on average, 3.7 years of professional work experience and 1.7 years of experience in target setting. There are no significant differences across conditions for gender, age, work experience, or target setting experience (all *p's* > 0.15). The experiment was conducted during three regular classroom sessions and took an average of 30 min. As reported in Table 5 and illustrated in Fig. 3, we find a very similar pattern of results in our follow-up experiment as in our main experiment.

We reran our hypotheses tests using data from the follow-up experiment. Detailed results and tables are reported in the Online Appendix. We find that when the need for help is low, high transparency increases *target level* (690.06, $p < 0.01$) and this positive effect is lower when the need for help is high (−741.57, $p < 0.01$). These findings support H1a and H2a. To test H1b and H2b, we used the same contrast weights (+2, +2, −1, and −3) as before and find that the model contrast is highly significant ($p < 0.01$), and the residual is insignificant ($p = 0.69$). Likewise, the simple effects of target transparency are significant both when the need for help is low and when it is high (both *p's* < 0.01). Finally, we calculate the relative size of the residual between-cells variance, q2, which amounts to 0.03, i.e., only 3% of the systematic variance is not explained by our contrast. These findings support H1b and H2b.

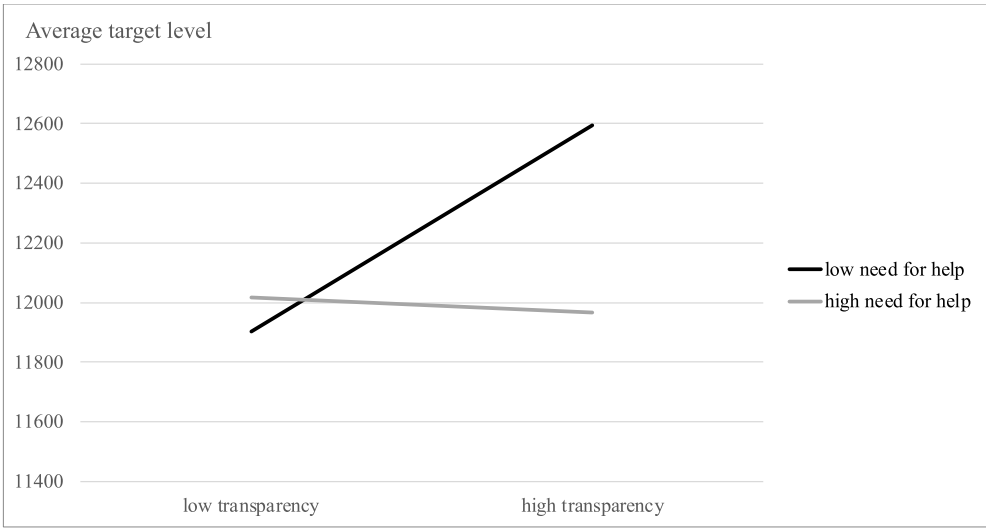
On the PEQ, we slightly modified our questions about participants' fairness considerations. Specifically, we asked participants to indicate, on a 7-point Likert scale, their agreement to the questions "I wanted to set a sales target for each salesperson that is fair relative to the sales target set for the other salesperson" and "I wanted each salesperson to think that their sales target is fair relative to the sales target set for the other salesperson". Again, both questions load on one factor (both loadings >0.70). In line with our theory, we again find that fairness considerations are more important when transparency is high rather than low both when the need for help is high (0.46 vs. −0.48, *t*-test, $p < 0.01$) and when it is low (0.54 vs. −0.44, *t*-test, $p < 0.01$). Finally, we also asked participants whether they were concerned that the salespersons could think their new targets are too high compared to their prior performance (on a scale from 1 (not at all) to 7 (to a large extent)) to capture participants' concerns about the absolute target level when transparency is low. When the need for help is low, participants' concerns are significantly larger when transparency is low than when it is high (4.50 vs. 3.59, *t*-test, $p = 0.02$). In contrast, when the need for help is high, differences are small and insignificant (4.41 vs. 4.43, *t*-test, 0.96). We then regress *average target level* on this variable, the indicator variable *Transparency* and the interaction of both variables. We find that when transparency is low, this concern significantly reduces *average target level* (−365.57, $p < 0.01$), but when transparency is high, the effect is significantly smaller (interaction term: 206.42, $p = 0.03$). These findings are in line with our underlying theory.

5. Conclusion

We conduct two experiments to investigate how target transparency (low vs. high) and need for help among employees (low vs. high) affect managers' target-setting decisions for multiple employees. Consistent with our predictions, we find that target transparency and need for help interact as target transparency increases target levels when the need for help is low, but not when it is high. Target transparency also reduces the target difference between employees, and this reduction is greater when

[24] We also asked two questions with regard to the predicted consequences of perceived unfairness. These questions load on a different factor (both loadings >0.70) than our questions about fairness motives. Any agreement to the questions about consequences also does not imply that managers are necessarily concerned about the (un)fairness of the targets they set in the specific setting. Therefore, we do not consider these two questions in the following.

Panel A: Average Target Level



Panel B: Target Difference

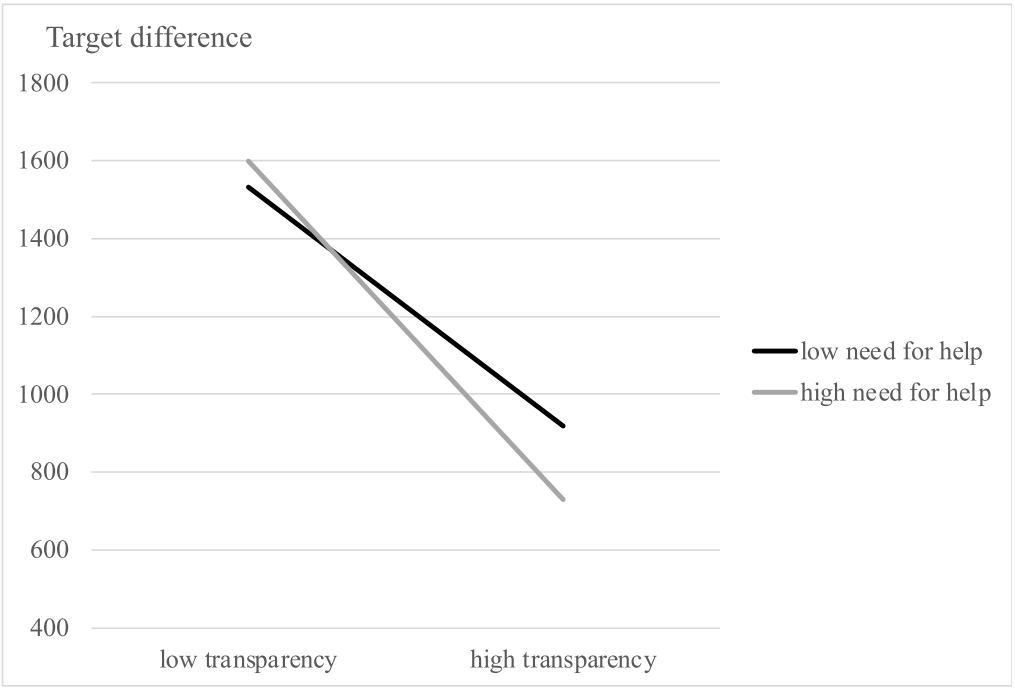


Fig. 3. Effect of Target Transparency and Need for Help on Average Target Level and Target Difference – Follow-up Experiment
Notes: The figures display average target levels (Panel A) and mean target difference (Panel B) under low and high transparency when the need for help is low (black line) and when it is high (grey line) from the follow-up experiment.
Average target level is the mean of the stronger performer's target level and the weaker performer's target level.
Target difference is calculated by subtracting the target level of the weaker performer from the target level of the stronger performer. The stronger performer is the employee with a previous realized revenue of $13 million. The weaker performer is the employee with a previous realized revenue of $11 million.

the need for help is high than when it is low. These results are consistent with the manager signaling a "high performance" policy with challenging targets for everyone when the need for help is low and encouraging help among employees when it is high. Supplemental analyses provide support for our theoretical process.

Target transparency has received little attention in the academic literature (Feichter et al., 2018). We address this gap by providing evidence that managers are aware of the importance of peer comparisons in the presence of target transparency and strategically use this knowledge when setting targets in a way that is intended to not only motivate effort at the individual level but also to assure fairness and promote help among employees when needed. By underscoring the role such discretion may play in promoting help among employees, our study also contributes to the emerging research on managers' use of discretion in target-setting decisions (Aranda et al., 2014; Bol et al., 2010; Feichter, 2023).

Our study has important implications for the design of effective information and compensation systems. Our results show that target

transparency as a firm choice interacts with environmental factors such as the need for help to affect managers' target setting decisions. This suggests that the effect of transparency on target setting decisions is not uniform across firms but is contingent on what type of effort the firm aims to motivate. Specifically, the results suggest that target transparency can be used by managers, when the need for help is high, to signal to employees the desired effort allocation between effort at the individual level and effort toward help. Our results may also help explain anecdotal evidence of why firms valuing cooperation among employees make targets transparent within the organization (Doerr, 2018; Sull & Sull, 2018).

Results of our study suggest that, in a setting with independently operating employees, managers use transparency to signal a "helping policy" by reducing target difference between stronger and weaker performers. However, in settings in which employee work is highly interdependent, identifying individual employee contributions is difficult or prohibitively costly (Chen, Williamson, & Zhou, 2012; Maas, van Rinsum, & Towry, 2012). In such settings, where interaction among employees with the purpose of coordinating their actions is paramount to achieving performance goals, *pay* dispersion can potentially hurt interaction and coordination and, thus, company's performance (Pfeffer, 1995; Shaw et al., 2002). Future research could investigate how target transparency affects target setting decisions and behavior in such settings. We also examine our research question in a setting where pay dispersion, which may result from reducing target difference between stronger and weaker performers, is explained by *legitimate*, productivity relevant factors. However, in settings in which the legitimacy of pay dispersion is less clear, managers may be reluctant to make target adjustments that may potentially increase pay dispersion. Future research could investigate how target transparency affects target setting decisions and employee helping behavior in such settings.

To unambiguously observe the effects of target transparency on managers' target setting decisions, we restricted participants' decisions to setting employees' targets, but did not allow them to adjust the bonus scheme. Future research could investigate how managers adjust bonus schemes and targets simultaneously. This is particularly interesting to study in conjunction with pay and target transparency as it raises the question how targets as performance standards and associated compensation for reaching those standards change when employees receive information about each other's targets and/or final pay. We chose to operationalize help via knowledge sharing because this allows us to manipulate the need for help in a plausible way in our experiment while holding the employee task constant across conditions. We expect our theory to generalize to various settings where independently operating employees can benefit from other employees spending costly resources, such as time and effort, to help them. However, as prior research (Haesebrouck et al., 2021) shows that individuals perceive help involving knowledge sharing as fundamentally different than help not involving knowledge sharing, we acknowledge that, ultimately, it remains an empirical question to what extent our findings generalize to such settings. Additionally, our study uses a single-period scenario-based experiment. We acknowledge that a scenario-based one-shot approach to target setting can only provide an important first step towards understanding how target transparency and need for help among employees affect target settings. Indeed, prior research shows that managers' discretionary decisions may not necessarily have the intended effect on employee behavior (Cardinaels & Yin, 2015; Choi, 2014). Future research could extend our setting to one in which manager and employee participants interact with each other over multiple periods. Such a study could be used not only to better understand managers' discretion in target-setting decisions but also how such use affects employees' effort and performance. The moderating effect of task type is another opportunity for future research as our theory and results suggest that our predictions are more likely to generalize to tasks that are ability-rather than effort-driven.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.aos.2024.101545.

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