# **RESEARCH ARTICLE**



# The shift to pay transparency: Undermet pay standing expectations and consequences

Kathrin Schnaufer<sup>1</sup> | Fabian Christandl<sup>2</sup> | Sebastian Berger<sup>3</sup> | Timo Meynhardt<sup>1</sup> | Mario Gollwitzer<sup>4</sup>

Revised: 7 October 2021

<sup>1</sup>Dr. Arend Oetker Chair of Business Psychology and Leadership, HHL Leipzig Graduate School of Management, Leipzig, Germany

<sup>2</sup>Business Psychology Department, Fresenius University of Applied Science, Cologne, Germany

<sup>3</sup>Institut für Organisation und Personal, University of Bern, Bern, Switzerland

<sup>4</sup>Department of Psychology, Ludwig-Maximilians-Universität München, Munich, Germany

#### Correspondence

Kathrin Schnaufer, Dr. Arend Oetker Chair of Business Psychology and Leadership, HHL Leipzig Graduate School of Management. Jahnallee 59, 04109 Leipzig, Germany. Email: kathrin.schnaufer@hhl.de

## Summarv

This research examines the shift from pay secrecy to transparency and seeks to improve the understanding of previously unrecognized negative consequences on job satisfaction. Drawing on undermet expectations research, we propose that shifting toward pay transparency decreases job satisfaction among employees who encounter negative discrepancies between expected and revealed pay standing (undermet pay standing expectations). Using data from field and experimental studies, we tested our hypotheses that episodic envy mediates the effect of undermet pay standing expectations on job satisfaction and that this indirect effect is moderated by victim sensitivity. Study 1 results suggest that undermet pay standing expectations lead to the predicted decrease in job satisfaction through episodic envy. In Study 2, we surveyed employees of a technology company before and after their shift to pay transparency and found partial support for our hypotheses, suggesting that episodic envy mediates the negative effects of undermet pay standing expectations on job satisfaction only for those low in victim sensitivity. Study 3 supported our overall model by illustrating that low victim sensitivity strengthened the negative indirect effects of undermet pay standing expectations on job satisfaction via episodic envy in an experimental study. We then discuss the implications for theory and practice.

## KEYWORDS

envy, job satisfaction, pay inequity, pay transparency, victim sensitivity

#### INTRODUCTION 1

Employee pay and its administration are considered important drivers of critical employee outcomes (Trevor & Wazeter, 2006). Within the scope of administrative pay options, the pay communication strategy currently represents a contentious subject among researchers and practitioners. Advocates of pay transparency, for example, criticize that in its absence, discriminatory pay structures are concealed and

perceptions of pay inequity high (Scheller & Harrison, 2018). Since most Western organizations rarely adopt a policy of pay transparency (Arnold et al., 2018), some researchers suggest that a shift to pay transparency may solve inequity problems and thereby improve employee job attitudes (e.g., Day, 2012). However, there are some caveats to pay transparency. In their review, Colella et al. (2007) discussed the complex nature of pay communication by elaborating on the costs and benefits of no pay transparency. Importantly, their

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made. © 2021 The Authors. Journal of Organizational Behavior published by John Wiley & Sons Ltd.

SCHNAUFER ET AL.

70 WILEY Journal of Organizational

review highlighted considerable gaps in our understanding of the effects of pay communication on job attitudes, which include the effects of a shift from pay secrecy to pay transparency. The authors proposed that contextual factors such as pay standing perceptions before pay transparency could influence employee attitudes after a shift to pay transparency. However, such propositions remain at the conceptual level.

More recent research has yielded new empirical insights that challenge the supposed benefits of pay transparency (Bamberger & Belogolovsky, 2017; Card et al., 2012; Ockenfels et al., 2014). Envy, dissatisfaction, and counterproductive interpersonal demeanor were outcomes linked to pay transparency that were predominantly driven by individuals whose pay standing was low. Pay standing depicts the location of one's pay in relation to referent others within an organization (i.e., own pay compared to the pay of coworkers on the same level) and thus points to the social context in which pay inevitably exists. In fact, reviewing past pay comparison studies demonstrates the importance of pay standing for individuals' social standing perceptions, self-esteem, and workplace identity (Thierry, 1992; Williams et al., 2006). These studies preceded recent shifts to pay transparency and suggest that instead of being a pay transparency phenomenon, pay standing is generally a salient aspect of people's pay even before pay transparency. Moreover, taking an uncertainty management perspective, Colella et al. (2007) suggested that in the absence of comparative pay information, employees gauge their pay standing by estimating their coworkers' pay levels, which, in turn, may exacerbate inequity issues before pay transparency since these estimates are often inaccurate (Lawler, 1965). Given the relevance of pay standing for the self, the purpose of this study is to elaborate on the extent to which, and why, negative discrepancies between expected and revealed pay standing (which we define as undermet pay standing expectations) following a shift to pay transparency may result in negative attitudes and thereby potentially hinder the realization of expected benefits.

While research on the effects of a pay communication shift on employee attitudes is scarce, Locke's (1976) undermet expectations model more generally suggests that a negative discrepancy between expected and revealed pay standing may have negative consequences on job satisfaction. Within the pay literature, understanding what forms of pay are linked to job satisfaction is a central concern. As noted by Williams et al. (2006), employee satisfaction is a driving factor of motivation and retention and is thus regarded as a necessary condition for important pay-related outcomes. To date, however, empirical evidence regarding whether a shift to pay transparency positively or negatively relates to job satisfaction, and under what conditions, is scarce and inconsistent. Drawing on the undermet expectations model, we argue that a shift to pay transparency may in fact fail to deliver the desired positive effects on job satisfaction whereby pay standing expectations constitute a critical condition in determining employee dissatisfaction after the shift. Accordingly, we suggest that undermet pay standing expectations cause dissatisfaction because becoming privy of self-diminishing pay information will lead to critical re-evaluations of pay-related job facets. By combining the

undermet expectations model with insights gained from recent pay transparency research on envy and individual differences in victim sensitivity, we identify potential causal mechanisms and moderating effects that affect job satisfaction following a shift to pay transparency.

The present research makes three contributions to the literature. First, we leverage undermet expectations research to determine the previously unrecognized impact of a shift to pay transparency on employee satisfaction. Specifically, studying the discrepancies between expected and revealed pay standing allows us to demonstrate that employee responses extend beyond revealed pay information, offering a richer understanding of pay transparency costs. Furthermore, we integrate knowledge about salient invidious comparisons under pay transparency with undermet expectations theory by investigating the role of strong negative emotions (e.g., envy) as a mechanism underlying individuals' dissatisfaction in response to undermet pay standing expectations.

Second, in addition to proposing that feelings of envy may mediate the consequences of undermet pay standing expectations, we build on recent pay communication research suggesting that reactions to pay transparency are dependent on justice-related dispositions (e.g., Bamberger & Belogolovsky, 2010). Justice research based on the sensitivity to mean intentions (SeMI) model (Gollwitzer et al., 2013) suggests that uncertain social environments escalate fears of becoming a victim, which makes individuals with high (but not low) victim sensitivity wary of future inequities. Because no pay transparency constitutes such an uncertain social environment (Colella et al., 2007). we focused on victim sensitivity and posit an ostensibly paradoxical pattern where individuals with lower victim sensitivity have a greater shock response upon encountering a lower pay standing than expected in comparison to their more victim-sensitive peers.

Third, while research comparing the effects of pay secrecy and pay transparency on employee attitudes and behaviors has increased since Colella et al.'s (2007) review, research investigating the impact of a shift to pay transparency remains scarce. Extending one recent laboratory study by Bamberger and Belogolovsky (2017), the present study investigates a shift to pay transparency in a field setting where an organization changes its pay communication strategy from secret to transparent. We thereby contribute to the pay communication literature and respond to calls from Bamberger and Belogolovsky (2017) and other researchers (e.g., Fulmer & Shaw, 2018) to conduct more field studies in this particular research area. Moreover, by investigating individual pay standing at two points in time (before and after a shift to pay transparency), we are able to identify hitherto unexplored hidden costs associated with a shift to pay transparency in a realworld setting. Specifically, we show the negative effect of undermet pay standing expectations on job satisfaction in the field and in online experiments to corroborate the predicted effects and underlying mechanisms of pay transparency.

Overall, we challenge prior assumptions that a shift to pay transparency naturally leads to greater satisfaction and advance theoretical and empirical insights into when and how a shift to pay transparency may negatively affect job satisfaction.

# 2 | DISCREPANCY BETWEEN EXPECTED AND REVEALED PAY STANDING

The present study focuses on employees' undermet pay standing expectations in the context of a shift to pay transparency. Similar to Trevor and Wazeter (2006), we define pay standing as a social comparison between an individual's pay level and the pay levels of his or her coworkers. Within compensation research, social comparisons regarding pay are considered to be a central aspect of how employees evaluate their pay and acquire self-relevant information. Social comparison theory predicts that compared to a lower pay standing, a higher pay standing should promote a positive self-image because it allows for more favorable social comparisons (i.e., with upward comparisons) (Harris et al., 2008; Trevor & Wazeter, 2006). Indeed, Gardner et al. (2004) found that employees who were high in the internal pay hierarchy had higher self-esteem. Other researchers have investigated the signaling effects of pay and found that employees consider their pay standing to be a stronger signal of workplace status and accomplishment than their absolute pay level (Frey et al., 2013). In summary, pay research clearly shows that employees care about their pay standing and that it can be a source of workplace identity and self-esteem.

Although pay standing perceptions are regarded to be subjective and constructed before pay transparency (Bamberger æ Belogolovsky, 2017), there is indirect evidence that pay information availability may make little difference to the self-relevant meaning of pay standing. For example, Harris et al. (2008) performed a pay comparison study where the actual pay distribution was unknown but perceived pay standing was still significantly related to pay satisfaction. Other pay comparison studies that were set in public organizations. where access to the actual pay distribution is less restricted, found similarly strong relationships between (actual) pay standing and pay-related attitudes (i.e., pay inequity perceptions) (Trevor & Wazeter, 2006; Williams et al., 2006). On one hand, this suggests that employees who perceive themselves to be ranked highly in the referent pay distribution are expected to have a positive self-image before pay transparency and to be more inclined to view their pay levels as fair compared to those who perceive themselves to be ranked lower (Colella et al., 2007). On the other hand, employees with high pay standing perceptions may also be the ones who suffer more from a shift to pay transparency if their actual pay standing turns out to be lower than expected. We therefore propose that in the event of a shift to pay transparency, individuals will regard their revealed pay standing not as standalone information but rather will judge it against their prior perceptions and expectations about where they rank in the referent pay distribution.

According to Locke's (1976) undermet expectations model, having high expectations influences how individuals react to events by inducing a positive anticipatory feeling toward it. The model predicts that negative reactions follow from undermet expectations due to "the heightened contrast between the anticipated success and the failure which results" (p. 1303). Conversely, individuals whose expectations are overmet may construe the event as a positive surprise and thus react more favorably (Schaubroeck et al., 2008). Consequently, conceptualizing pay standing perceptions as expectations before pay transparency suggests that reactions after the shift may differ depending on whether revealed pay standing exceeds or falls short of the expected pay standing.

-WILEY-

Research indicates that undermet expectations tend to result in negative affective reactions (e.g., Schaubroeck et al., 2008). Individuals whose expectations are undermet feel disappointed and interpret their outcomes more negatively, which, taken together, may produce the experience of negative emotions. Support for this line of reasoning comes from Shaw et al. (2003). In a setting comparable to the present research, they investigated positive affectivity (PA) as a factor that influences the assessment of (revealed) pay raises. Because of their dispositional tendencies to interpret weak reward stimuli (i.e., low pay raises), more negatively than high-PA individuals, low-PA individuals were significantly unhappier with pay raises that failed to exceed a certain threshold. Like low PA, we expect undermet expectations to lead to more negative interpretations of revealed pay standing than overmet expectations, which should, akin to the findings shown by Shaw et al. (2003), result in negative emotions.

In the context of pay transparency, Bamberger and Belogolovsky (2017) have recognized envy as a situation-specific negative emotion. Drawing on social comparison theory, they have suggested that pay transparency creates a situation for painful upward social comparisons that, ultimately, increases envy toward higher paid others. Considering the negative interpretation of one's outcome when contrasted with high but undermet expectations, the salience of another's better lot can be further enhanced and can thus provoke envy. Furthermore, envy occurs when the invidious comparison with a referent other is "in a domain that is central to one's self concept" (Cohen-Charash, 2009, p. 2129). Regarding the previously described importance of pay standing for an individual's self-esteem, high expectations thereof can be expected to increase the degree to which individuals incorporate it into their self-concept. This means that, with their self-esteem likely impacted, individuals whose pay standing expectations are undermet may feel severe disappointment and thus may become more prone to envying others with higher pay.

Taken together, the salience of similar others' better lot and the self-relevant meaning of pay standing are factors that may set the stage for envious feelings resulting from undermet pay standing expectations.

**Hypothesis 1.** Following a shift to pay transparency, undermet pay standing expectations are positively related to feelings of envy.

# 2.1 | The moderating role of victim sensitivity

Recent pay transparency research points toward individual differences in tolerance for pay uncertainty. This may taint the positive 72 WILEY Journal of Organizational

anticipation which high pay standing expectations likely produce before the shift to pay transparency. For example, Bamberger and Belogolovsky (2010) propose that inequity-sensitive employees have a low tolerance for uncertainty and are therefore more likely to interpret nontransparent pay as a sign of the organization's attempt to hide something. Furthermore, Smit and Montag-Smit (2018) recently found that victim sensitivity<sup>1</sup> is a dispositionsimilar to inequity sensitivity-that makes individuals more prone to suspect hidden pay inequities but also worry extensively about being a victim of unfair treatment in response to pay secrecy. What makes studying victim sensitivity in the context of a pay communication shift worthwhile is the tendency of high victimsensitive people to adopt cognitive strategies to cope with their equity concerns in uncertain social exchange situations. This tendency is explained by the SeMI model developed by Gollwitzer et al. (2013). The SeMI model suggests that uncertainty activates a suspicious mindset, which entails expectations of unfair treatment, in high rather than low victim-sensitive individuals. Studies on victim sensitivity show that once a suspicious mindset is activated, it leads individuals to process information in a way that is consistent with their negative expectations of their social environment (Maltese et al., 2016). Accordingly, high (vs. low) victim-sensitive employees might view undermet pay standing expectations as confirmatory evidence of maltreatment by their organization and as such may display weaker negative responses. Research on cognitive processing of justice events confirms this notion by arguing that unfair events are "processed with little scrutiny" (Jones & Skarlicki, 2013, p. 141) when the entity responsible for the unfavorable outcome was expected to be unfair. Conversely, unfair events are processed with greater cognitive scrutiny by individuals who trusted their organization to be fair, which is thought to heighten their negative reactions. Taken together, the pay transparency and justice literatures suggest that, compared to high victim sensitivity employees, employees with low victim sensitivity are more likely to succumb to pleasant anticipatory feelings over high pay standing expectations due to fewer inequity concerns before the shift. This may potentially increase the perceived contrast between expected and revealed pay standing. Moreover, since nontransparent pay is less likely to activate expectations of unfairness in these individuals, they may ponder undermet pay standing expectations more than their high victim-sensitive peers. We therefore predict that the expected negative emotional reactions (feelings of envy) to undermet pay standing expectations will be stronger in low (vs. high) victim sensitivity individuals.

Hypothesis 2. Following the shift to pay transparency, the effect of undermet pay standing expectations on feelings of envy will be stronger for individuals with low levels of victim sensitivity.

# 2.1.1 | Further consequences of undermet pay standing expectations

Feelings of envy where individuals harbor hostile emotions targeted at higher paid others under pay transparency are expected to be one central outcome of undermet pay standing expectations. In addition, undermet expectations research alludes to other critical outcomes. In this study, we focus on job satisfaction as a critical attitudinal reaction because it comprises the range of attitudes toward job conditions that are likely to be re-evaluated as a consequence of undermet pay standing expectations. In doing so, we seek to demonstrate the potential negative consequences of undermet pay standing expectations on job satisfaction, which reflects a desired attitudinal outcome in the context of pay transparency and beyond.

Research by Williams et al. (2006) considers high pay standing expectations to be among the factors that raise expectations of (absolute) pay and, thereby, increase the likelihood of decreased satisfaction with pay. Thus, in addition to eliciting envy because of severe (personal) disappointment, undermet pay standing expectations may also be related to decreased pay satisfaction following a shift to pay transparency. With pay satisfaction being "one of the core components of job satisfaction" (Judge et al., 2010, p. 158), it is regarded to exert a nontrivial influence on how employees generally appraise their job.

Additional determinants of job satisfaction are satisfaction with supervision and with the organization itself (Judge & Klinger, 2008), which may both suffer as a consequence of undermet pay standing expectations. For example, research on comparable status outcome expectations (i.e., pay raises and promotion expectations) considers undermet expectations to reflect an inconsistency between an individual's perceived and actual value to the organization. This is positively related to anger with supervision and intentions to leave an organization (Cohen-Charash & Spector, 2001; Greenberg et al., 2004; Schaubroeck et al., 2008; Schaubroeck & Lam, 2004).

Taken as a whole, the outlined research highlights additional direct consequences of undermet pay standing expectations whereby negative responses are targeted not only at more advantaged others but also at the organizational pay system and those responsible for it. Consistent with the view that satisfaction with pay, supervision, and the organization are important facets of job satisfaction, pay events such as a shift to pay transparency can negatively impact employees' general job satisfaction by revealing an unexpectedly lower pay standing.

Hypothesis 3. Following a shift to pay transparency, undermet pay standing expectations are negatively related to job satisfaction.

#### 2.2 Mediating and moderating effects

Envy and job dissatisfaction are both hypothesized consequences of undermet pay standing expectations that reflect a strong discontent

<sup>&</sup>lt;sup>1</sup>Although the authors refer to justice sensitivity throughout the article, their measurement overview table states an exclusive use of the victim sensitivity subscale to measure participants' justice sensitivity trait (Smit & Montag-Smit, 2018, p. 9).

with one's situation. However, in contrast to job dissatisfaction, which represents the cognitive reflection of various aspects of one's (job) situation, envy is a more proximate affective reaction triggered by a referent other's salient better lot (Cohen-Charash, 2009). Accordingly, envy is a reaction that likely presages the appraisal of one's general job situation and may thereby become a potential driver of dissatisfaction. As noted earlier, envious individuals are considered to be in a state of discomfort that causes them to turn against the envied other by sabotaging them at work. Although the literature has tended to focus on behavioral reactions to envy, attributing the causes for one's inferiority externally is also a common response by the envying person to preserve his or her self-image. Schaubroeck and Lam (2004), for example, found that rejected promotees tended to blame the system that created the unfair disadvantage after being denied a promotion rather than targeting their promoted coworkers directly. We therefore argue that envying individuals might find the reason for their unexpectedly lower pay standing within the flawed system and thus externalize the responsibility for this outcome by blaming the organization. While this serves to protect their self-image, it may also give rise to frictions in the employee-employer relationship and thereby lead to decreases in job satisfaction (Judge & Klinger, 2008; Robinson & Wolfe Morrison, 2000). Consequently, we expect that the effect of undermet pay standing expectations on job satisfaction is mediated by feelings of envy toward higher paid others.

Furthermore, as noted earlier, nontransparent pay may elicit suspicions of inequitable pay among high but not low victim sensitivity employees, which makes the latter more susceptible to experiences of strong negative emotions from undermet pay standing expectations following a shift to pay transparency. Given the hypothesized moderating effect of victim sensitivity on envy, we reasoned that among less victim-sensitive employees, the proposed indirect effect of undermet pay standing expectations on job satisfaction will be stronger.

Hypothesis 4. Following a shift to pay transparency, feelings of envy will mediate the effect of undermet pay standing expectations on job satisfaction, and this effect will be stronger for individuals with low levels of victim sensitivity.

#### 2.3 **Overview of studies**

We conducted three studies to test our hypotheses. Study 1 used a scenario design in which we manipulated undermet pay standing expectations to test their direct and conditional indirect effects on job satisfaction. In Study 2, we tested the same hypotheses in the field. The employees came from one organization and were surveyed at two time points: before and after a shift to pay transparency. Study 3 used a scenario design similar to Study 1 but was slightly altered to explain the observed inconsistencies between Studies 1 and 2 with respect to the moderating effect of victim sensitivity.

#### **METHODS** 3 |

#### 3.1 Study 1

We recruited participants using Prolific Academic, an online platform that allows data collection with a quality that is similar to that of traditional laboratory studies (Palan & Schitter, 2018). We used attention checks to ensure that all participants who finished the survey were reading our instructions thoroughly by instantly excluding everybody who failed them. Each of the 249 German participants who completed the survey earned €1.30. Since the headquarters of the organization being surveyed in Study 2 is located in Germany, we wanted to remain within the same culture to secure comparability of the results from both studies. Somewhat compromising the use of a German sample on Prolific (where German participants are less represented than US- or UK-based participants<sup>2</sup>) was a potential overlap between people collected for a pretest for Study 1 and those collected for Study 1. To ensure that our study was not compromised in this way. at the end of Study 1, we asked the participants to indicate whether they had previously participated in a similar study, which nine confirmed, 22 were unsure and 218 declined. We excluded everybody who did not decline having participated in a similar study previously to ensure that none of the participants in the final sample were already familiar with our pay standing manipulations, which were chosen based on the pretest. Of the remaining sample (N = 218), 43% were female; and most (53%) were aged from 20 to 30, followed by 28% aged from 30 to 40. Over half (51%) of the participants were currently employed full-time or part-time, and the other half reported being students (28%), self-employed (9%), unemployed (6%), or possessing another form of employment (6%).

#### 3.1.1 Procedure

The online experiment consisted of two parts in which participants experienced a shift to pay transparency. Demographic variables and the victim sensitivity scale (Schmitt et al., 2010) were answered at the beginning of the first survey part. The survey continued with a brief description of nontransparent pay in organizations to familiarize all participants with the subsequent scenario. Scenario studies have the advantage that they help to understand the nature of the direct and indirect effects of independent variables in controlled settings (Aguinis & Bradley, 2014). A key requirement to ensure the external validity of the hypothetical situations used in scenario studies is that they need to be realistic. To achieve this, similar to other scenario studies (e.g., Sherf & Morrison, 2020), we instructed individuals to imagine working in an organization. All participants read that they are employed in a medium-sized organization that specializes in providing IT services to businesses. The scenario comprised details regarding participants'

<sup>&</sup>lt;sup>2</sup>The majority of participants registered for Prolific Academic mainly come from the United States or United Kingdom. Other nations (including Germany) are less represented. We still used Prolific Academic since no equivalent platforms with more German participants exist.

74 WILEY Journal of Organizational

job title (project manager), job tasks (customer service and programming) and annual gross salary (€64.000), which they were told was market average.<sup>3</sup> We told participants that the organization did not pay bonuses so that the depicted annual gross salary was also the overall salary they could expect to get for their job. To prepare a subsequent pay comparison, coworkers were mentioned and described to have similar job tasks. Afterward, we added that pay was not transparent at this organization and emphasized the issue of pay equity uncertainty (see Appendix A for the exact description). This description was our uncertainty prime used to sensitize participants to the uncertain environment nontransparent pay creates. This prime was inspired by prior studies on victim sensitivity, where ambiguous signals were presented to individuals to elicit skepticism in high victim sensitivity study participants (see Gollwitzer et al., 2012). We also included the prime in our pretest where participants with nontransparent work experience confirmed that it described a realistic situation where employees cannot be certain whether their pay is equitable.

Next, we manipulated participants' pay standing expectations by providing contextual information about their job performance relative to their coworkers.<sup>4</sup> Before pay transparency, employees rely on their relative performance to infer their pay standing. Moreover, given the prevalence of pay-for-performance schemes, employees likely perceive performance as a more relevant pay standing indicator than other observable indicators (e.g., age, gender, and tenure) (Gerhart et al., 2009). The two descriptions that served to induce somewhat lower or higher pay standing expectations were determined in the pretest and differed by describing participants' own performance levels as either lower than top and average performing coworkers or equal to top and above average performing coworkers. In this way, pay standing expectations reflected a participant's comparison with a range of estimated pay levels of referent others that they inferred from the provided relative performance. Participants then indicated their pay standing expectations using a single-item measure, which we adopted from previous pay comparison studies (see, e.g., Scholl et al., 1987). The item was measured on a 7-point Likert-type scale (1 = clearly)lower to 7 = clearly higher) and formulated as follows: "Please indicate your best guess regarding where you would place your salary (€64.000) in comparison to the fellow project managers in your organization.". Subsequently, we assessed participants' job satisfaction (T1) (Dolbier et al., 2005).

In the second part, all participants were informed about a pay transparency initiative in their organization to create the impression of a shift to pay transparency. We then informed participants that they would see aggregated pay information about their coworkers' salaries. Next, we revealed participants' pay standing by showing them aggregated pay information in the form of the pay range (minimum,

average, and maximum<sup>5</sup> salaries) in their department and asked them to indicate their revealed pay standing. We based the revealed pay standing measure on the same single-item measure that we used to assess pay standing expectations, but the item was slightly altered to "Now that pay is transparent, please indicate again where your salary (€64.000) is located in comparison to the fellow project managers in your organization" (1 = clearly lower to 7 = clearly higher). Discrepancies between expected and revealed pay standing were arranged by randomly depicting participants' pay standing as either low or high along the revealed pay range graph. We accomplished this through the revealed referent salaries, which were slightly adapted to each condition to make participants' own salary (€64.000) appear either low or high on the pay information graph (see Figure A1). For example, in order to depict €64.000 as relatively low in the low pay standing condition, we raised the department average to €65.200. In the high pay standing condition, however, we reduced the department average to €63.000 so that participants' €64.000 salary appeared to be relatively high. Similar minor adjustments were made to the minimum salaries (€63.300 in the low vs. €61.300 in the high pay standing condition). Maximum salaries ( $\epsilon$ 66.700 and  $\epsilon$ 67.300) were the same across both conditions. Participants then continued to indicate their feelings of envy by responding to the episodic envy measure (Cohen-Charash, 2009). The second survey part concluded with the iob satisfaction (T2) measure (Dolbier et al., 2005), where participants again reported how satisfied they would be to work for the described organization.

#### 3.1.2 Measures

The 10-item victim sensitivity measure from Schmitt et al. (2010) was the only measure for which an original German version existed. For all other measures, German translations were created by using the back-translation procedure (Brislin, 1986). The victim sensitivity items (e.g., "It bothers me when others receive something that ought to be mine" and "It makes me angry when others receive a reward that I have earned") were measured on a 6-point Likert-type scale (1 = strongly disagree to 6 = strongly agree). Cronbach's alpha ( $\alpha = .88$ ) and McDonald's omega ( $\omega = .88$ ) were computed to estimate the internal consistency of the victim sensitivity measure and all subsequent measures.<sup>6</sup> Our independent variable (i.e., undermet pay standing expectations) was computed from two measures: pay standing before and after the shift to pay transparency (i.e., expected and revealed pay standing). We calculated the discrepancy between expected and revealed pay

 $<sup>^3\</sup>text{The}$  actual gross salary of IT project managers in Germany indeed ranges between  $\rm { e51.900}$ and €71.200 (Stepstone, 2020).

<sup>&</sup>lt;sup>4</sup>Choosing relative performance information as a pay standing indicator corresponds with the extant pay secrecy literature (e.g., Colella et al., 2007; Bamberger & Belogolovsky, 2010) where similar pay standing manipulations have previously been adopted (see Bamberger & Belogolovsky, 2017).

 $<sup>^5 \</sup>text{The}$  pay range maximum was depicted as a range between €66.700 and €67.300. Showing the two highest salaries was inspired by the aggregated pay graphs that the organization surveyed in Study 2 administered and which were available to one of the authors prior to Study 1.

<sup>&</sup>lt;sup>6</sup>McDonald's omega (ω) is currently recommended as a more accurate reliability estimation by, for example, Dunn et al. (2014) and McNeish (2018) who encourage its reporting in empirical studies with multi-item measurement scales. Hayes and Coutts (2020) provide a macro for SPSS (OMEGA) that allowed us to compute the McDonald's omega (w) coefficient for this study by using the approach described by Hancock and An (2020).

standing for each participant to obtain our independent variable by subtracting the revealed pay standing score from the expected pay standing score, which produced a distribution of expectationdiscrepancy scores. To facilitate the interpretation of our results in regard to undermet pay standing expectations, revealed pay standing was subtracted from expected pay standing so that positive scores of the discrepancy variable reflected the degree of undermet pay standing expectations, negative scores reflected the degree of overmet pay standing expectations, and a score of zero reflected met pay standing expectations. In other words, the more positive the score, the more individuals' pay standing expectations were undermet. The resulting undermet pay standing expectations index had an average of 0.34 (SD = 1.42). This method is in line with other streams of managerial research where the discrepancy between "two conceptually distinct constructs" (Edwards, 1994, p. 51) is summarized into one index to predict employee attitudes such as job or pay satisfaction (Coyle-Shapiro & Kessler, 2000; Yao et al., 2018).

In order to measure envious responses toward higher paid coworkers following the shift to pay transparency, we asked participants to rate each of the nine items from Cohen-Charash's (2009) episodic envy measure on the extent to which they described their feelings toward higher paid others (e.g., "I feel envious toward higher paid coworkers" and "I feel irritated";  $\alpha = .83$ ;  $\omega = .83$ ). These instructions were compliant with prior envy studies, particularly those that investigated state rather than trait envy (see, e.g., Bamberger & Belogolovsky, 2017; Khan et al., 2014). We chose the episodic envy measure because it measures temporary, situation-specific envy that fit our research context. Items were rated on a 6-point Likert-type scale (1 = strongly disagree to 6 = strongly agree). Participants rated how satisfied they would be to work in the organization described in the scenario on a 7-point Likert-type scale (1 = extremely dissatisfied to 7 = extremely satisfied).

# 3.1.3 | Control variables

We controlled for several variables. For Hypotheses 1 and 2, we included job satisfaction (T1), gender, and participants' manipulated low/high pay standing under pay transparency (revealed pay standing condition) as control variables. Job satisfaction (T1) was controlled for because envy research finds that negative circumstances "allow envy to flourish" (Duffy et al., 2008, p. 170), which suggests that job satisfaction (T1) might influence participants' feelings of envy (i.e., our dependent variable) following the shift to pay transparency. We controlled for gender because gender influences individuals' subjective inequity perceptions and may thus impact episodic envy (Crosby, 1984). Finally, we included the revealed pay standing condition (high/low) as a control variable because this was previously found to influence episodic envy (Bamberger & Belogolovsky, 2017). For Hypotheses 3 and 4, age was controlled for in addition to the variables specified above because age has previously been related to employee satisfaction (Bedeian et al., 1992). We controlled for job satisfaction (T1) to ensure that any initial feelings participants had toward their job (e.g., based on the information provided to them in the scenario) were accounted for in the subsequent job satisfaction (T2) measure. We included gender and pay standing condition (high/ low) because both variables were previously found to influence job satisfaction (T2) (Bedeian et al., 1992; Card et al., 2012; Ockenfels et al., 2014).

-WILEY-

# 3.1.4 | Results

Table 1 shows the means, *SD*s, and intercorrelations. Before proceeding to the main analysis, we analyzed whether our manipulations of pay standing expectations and revealed pay standing worked as intended. The comparison of the mean scores of pay standing

## TABLE 1 Means (M), standard deviations (SDs), and intercorrelations for Study 1

	Variables	M (SD)	1	2	3	4	5	6	7	8
	Controls									
1.	Job satisfaction (T1)	4.70 (1.25)	-							
2.	Revealed pay standing condition <sup>a</sup>	0.53 (0.50)	04	-						
3.	Age <sup>b</sup>	2.58 (0.97)	05	03	-					
4.	Gender <sup>c</sup>	0.44 (0.50)	02	07	.09	-				
5.	Undermet pay standing expectations <sup>d</sup>	0.22 (1.76)	.34**	73**	05	.05	-			
6.	Episodic envy	2.78 (0.84)	09	38**	05	.24**	.33**	-		
7.	Victim sensitivity	3.94 (0.90)	.01	14*	03	.11	.10	.47**	-	
8.	Job satisfaction (T2)	4.37 (1.24)	.61**	.34**	00	12	12	43**	19**	-

Note: N = 218.

a0 = low pay standing and 1 = high pay standing.

 $^{b}1 \le 20, 2 = 20-30, 3 = 30-40, 4 = 40-50, 5 = 50-60, and 6 \ge 60.$ 

 $^{c}0 = male and 1 = female.$ 

<sup>d</sup>Expectation-discrepancy variable.

p < .05. p < .01.

76 WILEY Journal of Organizational Patroity

expectations revealed that participants who read that they were lower performers relative to their coworkers estimated their pay standing to be significantly lower than participants who read that they were among the higher performers ( $M_{implied low pay standing} = 3.43$ , SD = 0.77 vs.  $M_{\text{implied high pay standing}} = 4.24$ , SD = 0.65; t = -8.57, p < .01). Similarly, for the two revealed pay standing conditions (low/high pay standing), participants who saw that their salary was closer to the bottom of the department's pay distribution reported having a significantly lower pay standing under pay transparency than participants who saw that their salary was closer to the top (Mlow pay  $_{standing} = 2.27, SD = 0.81 vs. M_{high pay standing} = 4.82, SD = 0.78;$ t = -22.76, p < .01). The results suggest that both of our pay standing manipulations were successful.

#### 3.1.5 Tests of hypotheses

To test Hypotheses 1–3, we adopted a hierarchical multiple regression approach. In this way, we could test the relationships between undermet pay standing expectations and both hypothesized dependent variables, episodic envy and job satisfaction (T2), as well as the predicted moderating role of victim sensitivity. For Hypothesis 4, our final model, we employed moderated mediation analysis (Model 7) with the SPSS process macro version 3.4 developed by Haves (2018). Here, we calculated the index of moderated mediation, which tests whether there is an increasing or decreasing influence of the moderator on the indirect effect (ab) of undermet pay standing expectations on job satisfaction (T2) via episodic envy that is different from zero (see Hayes, 2018, p. 455). Figure 1 shows our overall model where the indirect effect (ab) is the product of the  $X \rightarrow M$  path (a) and  $M \rightarrow Y$  path (b).

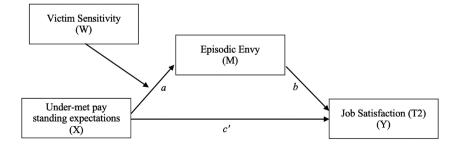
The findings for the tests of Hypotheses 1-3 are presented in Table 2. In the column labeled "episodic envy," the four-step hierarchical regression analysis for Hypotheses 1 and 2 is shown. After all control variables were entered in Step 1, undermet pay standing expectations, our independent variable, were entered in Step 2. The pattern of the results (B = 0.103, SE = 0.048, p < .05) corroborates Hypothesis 1, according to which undermet pay standing expectations are positively related to feelings of envy. Before including the product of our independent and moderating variables (i.e., interaction term) to test Hypothesis 2, we entered the moderator victim sensitivity in Step 3. In Step 4, we included the interaction term, which was not

statistically significant (B = 0.023, SE = 0.028, p = .416), indicating that individuals felt envious regardless of victim sensitivity. Thus, Hypothesis 2, which proposed that low but not high victim sensitivity individuals would feel envious in response to undermet pay standing expectations, was not supported. In the column labeled "job satisfaction (T2)," all control variables were again entered in Step 1. In Step 2, we included undermet pay standing expectations. The results show that undermet pay standing expectations led to decreased job satisfaction (T2) following the shift to pay transparency (B = -0.117, SE = 0.056, p < .05), which supports Hypothesis 3. Hypothesis 4 posited a first-stage moderated mediation (see Figure 1) where the effect of undermet pay standing expectations on job satisfaction (T2) would be mediated by episodic envy for low but not high victim sensitivity individuals. According to the nonsignificant moderation analysis (Hypothesis 2), the first stage of our final model was not moderated by victim sensitivity, so there was no basis for testing our final model (Hypothesis 4).

#### 3.1.6 Additional analyses

Although not hypothesized, the fact that undermet pay standing expectations were a significant predictor of both episodic envy and iob satisfaction (T2) meets two central assumptions of simple mediation (Baron & Kenny, 1986), which makes an alternative simple mediation model possible. To explore whether feelings of envy, once activated by undermet pay standing expectations, can generally be regarded as a mediating variable that causes decreases in job satisfaction (T2) following a shift to pay transparency, we analyzed a supplementary simple mediation model. Importantly, the model revealed a significant indirect effect (the indirect effect (ab) was calculated using 10 000 bootstrapped samples and the 95% bias-corrected confidence interval ab = -.040, 95% CI [-.085, -.003] excluded zero), indicating that episodic envy mediated the negative relationship between undermet pay standing expectations and job satisfaction (T2).

Additionally, to ensure the robustness of our findings, we reran our analyses without control variables. However, we retained participants' job satisfaction (T1) as a control to capture the effect of our independent variable on changes in job satisfaction (T2) (Hypothesis 3). The results were significant and essentially identical to our prior hypotheses tests.



Path diagram of hypothesized FIGURE 1 model. Note: The total effect equals the direct effect (c') plus the indirect effect (defined as the product of  $X \rightarrow M$  path [a] and  $M \rightarrow Y$  path [b])

TABLE 2 Study 1 hierarchical regression analysis results for the dependent variables

		Episodic envy					Job satisfaction (T2)				
Outcome	variable	R <sup>2</sup>	В	SE	t	Outcom	e variable	R <sup>2</sup>	В	SE	t
Model 1	Step 1:	.456				Model	Step 1:	.723			
	Constant		3.202	0.216	14.818**	1	Constant		1.202	0.364	3.302**
	Control variables <sup>a</sup>						Control variables <sup>b</sup>				
	Step 2:	.475					Step 2:	.730			
	Constant		3.258	0.216	15.096**		Constant		1.163	0.362	3.215**
	Undermet pay standing expectations		0.103	0.048	2.157*		Undermet pay standing expectations		-0.117	0.056	-2.094*
Model 2	Step 3:	.628									
	Constant		1.702	0.279	6.091**						
	Undermet pay standing expectations		0.102	0.042	2.427*						
	Victim sensitivity		0.391	0.051	7.644**						
Model 3	Step 4:	.629									
	Constant		1.735	0.283	6.140**						
	Undermet pay standing expectations		0.006	0.126	0.046						
	Victim sensitivity		0.382	0.053	7.243**						
	Undermet pay standing expectations × Victim sensitivity		0.023	0.028	0.815						

*Note:* N = 218. Unstandardized regression coefficients are reported.

Abbreviation: SE, standard error.

<sup>a</sup>Job satisfaction (T1), revealed pay standing condition (low/high) and gender were entered as control variables in Step 1.

<sup>b</sup>Job satisfaction (T1), revealed pay standing condition (low/high), age, and gender were entered as control variables in Step 1. The nominal variables were computed as dummy variables.

p < .05. p < .01.

# 3.1.7 | Discussion

Study 1 aimed to induce the scenario of an organization's shift to pay transparency in order to investigate the direct and moderated indirect effects of undermet pay standing expectations on job satisfaction (T2) following the shift. The results provide evidence for the general effects of undermet pay standing expectations on episodic envy and job satisfaction. However, our prediction that feelings of envy were stronger in low victim sensitivity individuals than in high victim sensitivity individuals was unsupported (Hypothesis 2), which also contradicted the moderated mediation model posited as our final model (Hypothesis 4). A supplementary analysis of an unmoderated simple mediation revealed that in Study 1, episodic envy mediated the relationship between undermet pay standing expectations and job satisfaction (T2). This finding suggests that feeling envious toward higher paid coworkers and being subsequently less satisfied with one's job might be unrelated to victim sensitivity. An alternative explanation for the nonsignificant result is that our pay secrecy prime did not activate a suspicious mindset in high victim sensitivity participants. We derived our uncertainty prime from prior research, where nontransparent pay was positively associated with self-concerns about inequity in

high but not in low victim sensitivity individuals (Smit & Montag-Smit, 2018, p. 170). However, rather than pointing toward self-concerned pay inequities, our uncertainty prime points more toward general pay inequities among coworkers. The uncertainty prime may therefore not have sufficed to elicit inequity self-concerns previously observed in high victim sensitivity individuals when pay was nontransparent. Moreover, nontransparent pay in real settings is often accompanied by a variety of incidences where individuals may feel uncertain not only about their pay level but also about the general trustworthiness of their organization (Colella et al., 2007). It is therefore likely that the scenario used in Study 1 did not sufficiently represent this extent of uncertainty. Study 2 addresses this limitation. It is set in the field where nontransparent pay and any signs of untrustworthiness directly or indirectly resulting from it are expected to draw more attention from high rather than low victim sensitivity employees, which may, in turn, lead low but not high victim sensitivity employees to respond more negatively to undermet pay standing expectations following a shift to pay transparency. In addition, Study 2 measures variables at two different points in time and is therefore less subject to common method bias than Study 1 (Podsakoff et al., 2003).

WILEY Organizational

78

## 3.2 | Study 2

The data for Study 2 were collected in an information and communication technology company with a total workforce of approximately 800 employees headquartered in Germany. The organization operates various smaller branch offices in different European countries, which is why the survey was conducted in English. All current employees received an email invitation from the CEO of the company, which included a link to the first of two surveys and a brief outline of the purpose and confidentiality of the study. There were two data collection points: the first was at the beginning of April 2017, before pay transparency, and the second was 3 months after the shift had been implemented company-wide. The entire study spanned a time period of 4 months. At Time 1, N = 327 completed at least 50% of the first survey. At Time 2, all employees were sent a link to the second survey, which N = 256 answered. Among the respondents, N = 102could clearly be matched to their first survey and were thus included in the final sample (response rate 30%). Of our final sample, 38% were female; and the largest age group was from 30 to 35 (40%), followed by 28% from 36 to 40. The sample possessed a high educational background (61% possessed a master's degree). Most responses came from Germany (91%), followed by other countries including Austria (6%) and Spain (3%). Concerning job roles, the largest group of participants (35%) conducted software engineering. Among the respondents. 8% were in entry-level jobs (i.e., associate). 60% were in middle-level management, and 8% of responses were in top-level management (i.e., director and "vice president and leadership team"). Across job roles and levels, salaries ranged from <€24.999 to > €95.000, with a median of €55.000-€64.999 (income was measured in range categories). Most (61%) of the sample indicated having been with the company for less than 3 years (i.e., tenure). According to the senior manager responsible for human resources and organizational development, the final sample was representative of the overall workforce.

## 3.2.1 | The shift to pay transparency

Prior to the shift to pay transparency around May 2017, employees were familiarized with exemplary pay information graphs by HR or their supervisors. This procedure ensured that employees were able to interpret the revealed pay graphs, which entailed aggregated salary information for their jobs.<sup>7</sup> The organization stated that one goal of their pay transparency initiative was to detect and adjust pay differences among (same-level) employees that were not explained by performance. Moreover, at the beginning of 2017, Germany, where the headquarters was located, had passed a pay transparency act, which may have been an additional driver for the organization's shift to pay transparency (Borgmann, 2017).

# 3.2.2 | Pay policy information

Gibbs and Hendricks (2004) recommend describing firm-specific pay policies to facilitate the interpretation of pay administration effects observed in the field. Since we were not privy to objective compensation data, we derived an approximative overview of relevant compensation variables from employee-reported data (see Table B1). The analysis revealed two noteworthy aspects. First, except for top management, bonus payments were rare across the workforce (i.e., low incentive intensity). This suggests that employees' total compensation was mainly their annual base income. Second, large pay differences (e.g., by  $\epsilon$ 40.000) among same-level employees (e.g., senior managers in the software engineering department) suggested a high horizontal pay dispersion. This implies that the shift to pay transparency was likely to reveal wide pay gaps between employees at the top and bottom ends of their referent pay distribution.

# 3.2.3 | Procedure

As in Study 1, we measured employees' demographic data, victim sensitivity, pay standing expectations, and job satisfaction at Time 1 (T1) (i.e., before the shift to pay transparency). Employees in the field sample also indicated their expected pay standing by answering the pay comparison item adopted from Scholl et al. (1987) ("Please indicate your best guess regarding where you would currently locate your own salary in comparison to similar [others]."; 1 = clearly lowerto 7 = clearly higher). The Time 2 (T2) survey, distributed to participants after the shift to pay transparency had occurred, asked employees to state their revealed pay standing ("Now that the salary transparency initiative has gone live, please indicate where your own salary is currently located in comparison to similar [others]"; 1 = clearly lower to 7 = clearly higher), feelings of envy and job satisfaction (T2). In addition to Study 1, we checked whether the shift to pay transparency had, in fact, improved employees' ability to make pay comparisons with referent others by using an item Bamberger and Belogolovsky (2017) had previously been administered in their pay transparency study.

### 3.2.4 | Measures

The measures and their response scales were identical to those in Study 1, but we adopted the original English versions. Cronbach's alpha and McDonald's omega were  $\alpha = .83$  and  $\omega = .82$  for the victim sensitivity measure. To compute our independent variable (i.e., undermet pay standing expectations), we used the same procedure as in Study 1 (i.e., difference score between expected and revealed pay standing) (M = 0.34, SD = 1.42). We surveyed episodic envy at Time 2 with the same measure as in Study 1 (Cohen-Charash, 2009) ( $\alpha = .76$ ;  $\omega = .82$ ), but the instructions were slightly refined to better suit the context of Study 2, where the shift to pay

<sup>&</sup>lt;sup>7</sup>Employees saw the salary range for their job level (i.e., senior management). Each job level was aligned with the different job roles (i.e., software engineering). The salary ranges revealed minimum, median, and maximum salaries and outliers (i.e., highest salaries).

transparency dated back 3 months. As a state emotion, episodic envy is tied to an activating event in which self-relevant insidious social comparison is appraised (Chanel et al., 2009). Over time, however, this particular state is expected to be mitigated, which might attenuate envious reactions when the envy-inducing event is recalled. Consequently, the time discrepancy between the actual event of the pay transparency shift and the distribution of our survey could lead to inaccurate reports of initial feelings of envy. In order to still be able to capture participants' feelings of envy in the direct aftermath of the shift to pay transparency, we specified the comparison target by choosing a pay comparison that is highly salient and may thus lead to emotional activation. Bamberger and Belogolovsky (2017), who measured envy toward highest paid others, suggested that pay transparency increases the salience of the highest pay levels but not that of other pay comparisons (e.g., average and minimum pay). Following this logic, we reasoned that, in contrast to comparisons with other salaries along the pay range, a comparison with the highest salaries would be most likely to reignite initial envy responses if such responses existed. A pretest conducted with the aim of underpinning this assumption confirmed that when given the choice, individuals have a clear tendency to want to know the highest salaries for their job level rather than average and lowest pay levels. What can be further inferred from this pretest is that regardless of the less specified pay comparison target (i.e., higher instead of highest salaries) in Study 1, participants may also have focused on the highest salaries revealed. As such, episodic envy measures in both studies should be comparable. As in Study 1, we used Dolbier et al.'s (2005) 1-item measure



(e.g., "Taking everything into consideration, how do you feel about your job as a whole?") to assess employees' job satisfaction before (T1) and after (T2) the shift to pay transparency.

## 3.2.5 | Control variables

As in Study 1, we controlled for job satisfaction (T1) and gender to test Hypotheses 1 and 2. In addition, we added the pay comparison improvement item, which was adapted from Bamberger and Belogolovsky (2017) ("After the introduction of salary transparency, my ability to compare my salary level with that of similar others has improved";  $1 = strongly \ disagree$  to  $6 = strongly \ agree$ ) to ensure that potential differences in perceived pay comparability following the shift to pay transparency were accounted for in our episodic envy and job satisfaction (T2) measures. For Hypotheses 3 and 4, we controlled for employees' job satisfaction (T1), gender, age, tenure, and income, which were previously found to influence employee satisfaction (e.g., Bedeian et al., 1992; Williams et al., 2006).

## 3.2.6 | Results

Table 3 shows the means, *SDs*, and intercorrelations. Prior to testing our hypotheses, we analyzed the extent to which individuals in our sample agreed that they were better able to compare their pay to that of referent others after the shift to pay transparency. The vast

TABLE 3	Study 2 means (	M), standard	deviations	(SDs), and intercorrelations	
---------	-----------------	--------------	------------	------------------------------	--

	Variables	M (SD)	1	2	3	4	5	6	7	8	9	10
	Controls											
1.	Job satisfaction (T1)	5.51 (1.10)	-									
2.	Age <sup>a</sup>	2.18 (0.94)	.05	-								
3.	Gender <sup>b</sup>	0.39 (0.50)	.09	.13	-							
4.	Tenure <sup>c</sup>	2.34 (1.16)	19	.30**	.14	-						
5.	Income <sup>d</sup>	5.38 (1.82)	.15	.45**	17	.05	-					
6.	Pay comparison improvement (T2) <sup>e</sup>	4.47 (1.17)	.06	.01	11	04	.04	-				
7.	Undermet pay standing expectations <sup>f</sup>	0.34 (1.42)	.07	.05	01	.14	07	.13	-			
8.	Episodic envy	2.54 (0.689)	13	.07	.24*	.15	25*	01	.08	-		
9.	Victim sensitivity	3.67 (0.67)	32**	.02	.20	.13	15	05	04	.39**	-	
10.	Job satisfaction (T2)	5.05 (1.33)	.45**	.09	03	16	.18	.28**	03	28**	35**	-

Note: N = 102.

 $a_1 \le 20, 2 = 20-30, 3 = 30-40, 4 = 40-50, 5 = 50-60$ , and  $6 \ge 60$ .

 ${}^{b}0 = male and 1 = female.$ 

<sup>c</sup>1  $\leq$  1 year, 2 = 1–3 years, 3 = 3–5 years, 4 = 5–7 years, and 5 > 7 years.

 ${}^{d}1 = \notin 24.999 \text{ or less}, 2 = \notin 25.000 - \notin 34.999, 3 = \# 35.000 - \# 44.999, 4 = \# 45.000 - \# 54.999, 5 = \# 55.000 - \# 64.999, 6 = \# 65.000 - \# 74.999, 7 = \# 75.000 - \# 84.999, 8 = \# 85.000 - \# 94.999, and 9 = \# 95.000 \text{ or more.}$ 

e-After the introduction of salary transparency, my ability to compare my salary level with that of similar others has improved" (1 = strongly disagree to 6 = strongly agree).

<sup>f</sup>Expectation-discrepancy variable.

p < .05. p < .01.

LWILEY Journal of Organizational Behavior

majority (85%) somewhat agreed, agreed, or strongly agreed, suggesting that, overall, the initiative had the intended effect (M = 4.47, SD = 1.16).

# 3.2.7 | Tests of hypotheses

As in Study 1, we used a hierarchical multiple regression approach to test Hypotheses 1–3. To test Hypothesis 4, we conducted moderated mediation analysis with the SPSS process macro version 3.4. All models were calculated with control variables. The results of the hierarchical regression analyses are presented in Table 4. Estimates of the effect of undermet pay standing expectations on episodic envy (Hypothesis 1) are shown in the column labeled "episodic envy" in Step 2. Contrary to our hypothesis and the findings from Study 1, the coefficient was nonsignificant (B = 0.053, SE = 0.050, p = .267). Accordingly, Hypothesis 1 was not supported. We proceeded by testing a conditional effect of undermet pay standing expectations on episodic envy in Step 4, where the interaction term was entered into the regression. The results show a significant interaction effect between undermet pay standing expectations and victim sensitivity (B = -0.272, SE = 0.097, p < .01). This supports Hypothesis 2, which stated that victim sensitivity would moderate the relationship between undermet pay standing and episodic envy. To test if the pattern of the moderating effect is as expected, we illustrated the relationship between undermet pay standing expectations and episodic envy at low (1 *SD* below the mean) and high (1 *SD* above the mean) levels of victim sensitivity (Aiken et al., 1991) (see Figure 2). The resulting simple slope tests show that, as predicted, the effect of undermet pay standing expectations on episodic envy was significant for individuals with low victim sensitivity (B = 0.233, SE = 0.077, p < .05) but not for individuals with high victim sensitivity (B = -0.135, SE = 0.080, p = .097).

The results for Hypothesis 3 are presented in the column "job satisfaction (T2)" (Table 3). The estimates (B = -0.045, SE = 0.086, p = .606), shown in Step 2, are nonsignificant, which suggests that there is no unconditional association between undermet pay standing expectations and job satisfaction (T2). We therefore rejected Hypothesis 3.

#### TABLE 4 Study 2 hierarchical regression analysis results for the dependent variables

			Episodic envy					Job satisfaction (T2)				
Outcome	variable	R <sup>2</sup>	В	SE	t	Outcom	e variable	R <sup>2</sup>	В	SE	t	
Model 1	Step 1:	.308				Model	Step 1:	.628				
	Constant		2.889	0.400	7.216**	1	Constant		3.186	1.348	2.364*	
	Control variables <sup>a</sup>						Control variables <sup>b</sup>					
	Step 2:	.327					Step 2:	.630				
	Constant		2.922	0.401	7.288**		Constant		3.120	1.360	2.294*	
	Undermet pay standing expectations		0.053	0.048	1.118		Undermet pay standing expectations		-0.045	0.086	-0.518	
Model 2	Step 3:	.450										
	Constant		1.377	0.602	2.286*							
	Undermet pay standing expectations		0.054	0.045	1.201							
	Victim sensitivity		0.332	0.100	3.311**							
Model 3	Step 4:	.516										
	Constant		0.886	0.607	1.460							
	Undermet pay standing expectations		1.045	0.355	2.943**							
	Victim sensitivity		0.401	0.100	4.018**							
	Undermet pay standing expectations × Victim sensitivity		-0.272	0.097	-2.811**							

*Note:* N = 102. Unstandardized regression coefficients are reported.

Abbreviation: SE, standard error.

<sup>a</sup>Job satisfaction (T1), gender and pay comparison improvement (T2).

<sup>b</sup>Job satisfaction (T1), age, gender, tenure, income, and pay comparison improvement (T2) were entered as control variables in Step 1. The nominal variables were computed as dummy variables.

p < .05. p < .01.

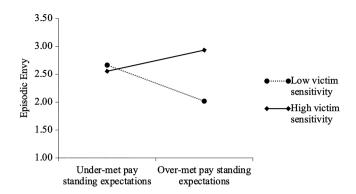


FIGURE 2 Interaction between undermet pay standing expectations and victim sensitivity on episodic envy (Study 2). When victim sensitivity was low, undermet pay standing expectations related to episodic envy (-1 SD, B = 0.233, SE = 0.077, p < .05). When victim sensitivity was high, the regression coefficient was nonsignificant (+1 SD, B = -0.135, SE = 0.080, p = .097)

Recent discussions on the preconditions of conditional mediation processes suggest that "a lack of correlation (between X and Y) does not disprove causation" (Hayes, 2018, p. 80). We therefore proceeded with the test of our overall model (i.e., moderated mediation), according to which undermet pay standing expectations transmit their effect on job satisfaction (T2) through episodic envy for different levels of victim sensitivity. The employed bootstrapped moderated mediation test revealed a significant moderated mediation index and thus provided support for Hypothesis 4 and our overall model (index of moderated mediation = .109, SE = 0.062, 95% CI [.005, .244], 10 000 resamples). Since the index was significant, we probed the indirect effect at different values of the moderator (Haves, 2018). Consistent with procedures recommended by Preacher et al. (2007), the indirect effects were bootstrapped with 10 000 samples at the mean (3.67), 1 SD below the mean (3.01), and 1 SD above the mean (4.35). The bootstrapping results showed that the indirect effect was significant at low (i.e., -1 SD = -0.087, SE = 0.050, 95% CI [-.193, -.002]) but not at high levels (i.e., +1 SD = 0.060, SE = 0.041, 95% CI [-.001, .157]) of victim sensitivity.

#### 3.2.8 Additional analyses

All analyses were also conducted without control variables to check whether the results remained the same. The fact that there were no changes indicates the general robustness of our pattern of results.

#### 3.2.9 Discussion

The findings of Study 2 partially support our hypotheses. Notably, Study 2 supported our proposition that the intensity by which undermet pay standing expectations are experienced and result in envy and dissatisfaction depends on victim sensitivity. In contrast to Study -WILEY-

Journal of 81

1, the findings in Study 2 showed that when confronted with unexpectedly lower pay standing under pay transparency, only low victim-sensitive employees experienced feelings of envy toward higher paid others, which led to decreased job satisfaction. This supports the suspicious mindset perspective derived from the SeMI model, according to which inequity expectations triggered by nontransparent pay may have been responsible for high victim-sensitive employees' attenuated responses. We conducted Study 3, which was designed similarly to Study 1, to test whether the results of Study 2 can be replicated by presenting participants a less subtle uncertainty prime.

#### 3.3 Study 3

In Study 3, we administered a second scenario study where a shift to pay transparency was simulated with the goal of exposing participants, more explicitly than in Study 1, to uncertainty before pay transparency in order to strengthen our activated suspicious mindset argument. We recruited a sample of N = 157 employees from the United Kingdom on Prolific, which ensured that none had participated in Study 1. As European countries, the United Kingdom and Germany share core cultural values (e.g., individualistic values) such that there should have been no culture-bound differences between our Studies 1-3 samples that affect the general pattern of our findings. We used attention checks, and each participant who completed the survey earned £1.50, of which £0.50 was a bonus payment (see explanation below). We used the Prolific option to screen for employment status (including full-time, part-time, temporary employment, and parental leave) to ensure that participants could properly imagine the scenario based on their work experience. In the Study 3 sample, 78% worked full-time, 57% were female, the average age was between 30 and 40, and most (42%) had a bachelor's degree. The most common annual income (40%) was below £24.999.

#### 3.3.1 Procedure

The survey presented to participants consisted of two parts. Participants started the first survey part by answering demographic variables, responding to the victim sensitivity scale (Schmitt et al., 2005) and reading the scenario. To prepare participants for the scenario, they read a brief description of nontransparent pay in organizations (same as in Study 1). Then, we introduced participants to the scenario where we presented the details about their job title (marketing manager for a sportswear company), coworkers (12 fellow marketing managers), job tasks (designing marketing campaigns), and annual gross salary ( $\epsilon$ 64.000), which they were told was their total salary and market average.<sup>8</sup> We chose marketing manager as a job title because this facilitated alignment with the subsequent uncertainty prime, which

<sup>&</sup>lt;sup>8</sup>Participants' hypothetical salaries remained the same as in Study 1, which were at the upper range of market manager salaries in the United Kingdom (Indeed, 2020).

82

Journal of Organizational Behavior

required them to be creative. For our uncertainty prime, participants were offered a bonus payment of £0.50. They were informed that in order to earn the bonus payment, they had to come up with a sales pitch (two sentences) for running shoes, which was framed as a marketing exercise that should make it easier for them to truly "imagine what your employment in this company would look like." Subsequently, a note appeared that informed them that no bonus would be paid to them because there was a time limit that they exceeded. Speed was our bogus bonus pay criterion<sup>9</sup> that was not communicated upfront (the task instructions only said "Be creative! Be quick!"). Given that participants were still eligible to complete the study and to earn the study participation fee, we considered false bonus payment rejection to be a subtle and moderate inequity offense that has been shown to be maximally effective in prompting high victim sensitivity individuals' suspicions (Gollwitzer et al., 2013).

The administered uncertainty prime reflects procedural uncertainty on how to obtain a bonus payment for a bogus marketing exercise. In this sense, it is comparable to nontransparent pay, which is often accompanied by a lack of pay determination transparency (Day, 2012). To ascertain that the prime would be successful, we adapted it from related procedural justice experiments (see, e.g., van Prooijen et al., 2002) without implying too intense equity violations because this would have failed to prompt a suspicious mindset in victim-sensitive participants (Gollwitzer et al., 2013). Importantly, by letting participants experience inequity firsthand, the uncertainty prime in Study 3 was likely to be more effective than the uncertainty prime in Study 1, which only used a description of (pay equity) uncertainty before pay transparency. After completing the exercise, the scenario continued by describing participants' job performance relative to their coworkers either as low or high, which served as our pay standing expectation manipulation (please see Study 1 for a detailed description of the pay standing expectations manipulation and measurement). Participants then indicated their pay standing expectations on the same single-item measure (Scholl et al., 1987) used in Study 1. At the end of the first survey part, participants were asked to rate their job satisfaction (T1) (Dolbier et al., 2005). In the second survey part, which was identical to the second survey part in Study 1, a shift to pay transparency was simulated, and undermet pay standing expectations were manipulated (please see Study 1 for details). Afterward, participants ended the survey by indicating their feelings of envy toward higher paid others and job satisfaction (T2).

# 3.3.2 | Measures

All measures, instructions and response scales were identical to Study 1 except that we adopted the original English versions. Cronbach's alpha and McDonald's omega were  $\alpha = .87$  and  $\omega = .87$ , respectively, for the victim sensitivity measure and  $\alpha = .87$  and  $\omega = .86$ , respectively, for the episodic envy measure.

# 3.3.3 | Control variables

As in Study 1, we controlled for job satisfaction (T1), gender and participants' manipulated low/high pay standing under pay transparency (*revealed pay standing condition*) in Hypotheses 1 and 2. For Hypotheses 3 and 4, we controlled for employees' job satisfaction (T1), gender, age, tenure, and income.

## 3.3.4 | Results

Table 5 shows the means, SDs, and intercorrelations. Before turning to the hypothesis tests, we examined participants' responses to the marketing exercise. All participants wrote at least one sentence in the bogus marketing exercise. A content scan of their responses by the authors revealed that all had taken the exercise seriously, which we considered necessary in order for the uncertainty prime to work effectively. An independent-sample t test indicated that participants in the implied low pay standing condition reported a significantly lower pay standing than participants in the implied high pay standing condition ( $M_{\text{implied low pay standing}} = 3.17$ , SD = 0.78 vs.  $M_{\text{implied high pay}}$  $_{\text{standing}} = 4.11, \text{ SD} = 0.91; t = -6.26, p < .01$ ). The same test was employed for our second manipulation (i.e., revealed pay standing), which showed that participants in the low pay standing condition reported having a significantly lower pay standing under pay transparency than participants in the high pay standing condition (M<sub>low pay</sub>  $_{standing} = 2.32, SD = 0.97$  vs.  $M_{high pay standing} = 4.09, SD = 0.90;$ t = -11.84, p < .01). These results suggest that our pay standing manipulations were successful.

# 3.3.5 | Tests of hypotheses

The data analysis strategy was identical to that of Studies 1 and 2. The results of the hierarchical regression analyses (Hypotheses 1-3) are presented in Table 6. Consistent with Hypothesis 1, the effect of undermet pay standing expectations on episodic envy was positive and significant (B = 0.209, SE = 0.058, p < .01) (see the column "episodic envy," Step 2). The interaction between undermet pay standing expectations and victim sensitivity was also significant (B = -0.095, SE = 0.047, p < .05) (Step 4). Simple slope analysis (see Figure 3) showed that when victim sensitivity was low (-1 SD), undermet pay standing expectations were significantly and positively related to episodic envy (B = 0.267, SE = 0.068, p < .01). When victim sensitivity was high (+1 SD), undermet pay standing expectations were not significantly related to episodic envy (B = 0.102, SE = 0.058, p = .082). Overall, the interaction results confirm Hypothesis 2, revealing that undermet pay standing expectations had a significant impact on low but not high victim sensitivity individuals' feelings of envy.

Next, we tested Hypothesis 3 (see the column "job satisfaction (T2)"). The estimates (B = -0.260, SE = 0.067, p < .01), shown in Step 2, are significant, which supports Hypothesis 3 and suggests that undermet pay standing expectations lead to decreased job satisfaction

<sup>&</sup>lt;sup>9</sup>All participants were debriefed and paid the bonus after they had reached the end of the survey.

TABLE 5 Study 3 means (M), standard deviations (SDs), and intercorrelations

	Controls	M (SD)	1	2	3	4	5	6	7	8	9
1.	Job satisfaction (T1)	4.48 (1.32)	-								
2.	Revealed pay standing <sup>a</sup>	0.48 (0.50)	10	-							
3.	Age <sup>b</sup>	3.03 (1.05)	01	.02	-						
4.	Gender <sup>c</sup>	0.57 (0.50)	03	05	.07	-					
5.	Income <sup>d</sup>	2.11 (1.32)	.01	04	.13	08	-				
6.	Undermet pay standing expectations <sup>e</sup>	0.64 (1.55)	.24**	59**	02	.03	.02	-			
7.	Episodic envy	3.60 (0.96)	28**	12	05	.06	.11	.23**	-		
8.	Victim sensitivity	4.14 (0.86)	20*	.01	17*	.15	.03	.04	.57**	-	
9.	Job satisfaction (T2)	3.76 (1.36)	.54**	.25**	.07	13	.06	23**	65**	36**	-

*Note:* N = 157. The values in parentheses are alpha reliability coefficients.

 $^{a}$ 0 = low pay standing and 1 = high pay standing.

 $^{b}1 \le 20, 2 = 20-30, 3 = 30-40, 4 = 40-50, 5 = 50-60, and 6 \ge 60.$ 

 $^{c}0 = male and 1 = female.$ 

 ${}^{d}1 = { (24.999 or less, 2 = (25.000 - (34.999, 3 = (35.000 - (44.999, 4 = (45.000 - (54.999, 5 = (55.000 - (64.999, 6 = (65.000 - (74.999, 7 = (75.000 - (74.999, 6 = (14.999, 6 = ($  $\in$ 84.999, 8 =  $\in$ 85.000- $\in$ 94.999, and 9 =  $\in$ 95.000 or more.

<sup>e</sup>Expectation-discrepancy variable.

\*p < .05. \*\*p < .01.

<b>TABLE 6</b> Study 3 Hierarchical regression analysis results for the dependent variab
--

		Episodic envy							Job satisfaction (T2)			
Outcom	e variable	R <sup>2</sup>	В	SE	t	Outcom	e variable	R <sup>2</sup>	В	SE	t	
Model	Step 1:	.318				Model	Step 1:	.618				
1	Constant		4.636	0.294	15.756**	1	Constant		0.738	0.324	2.276*	
	Control variables <sup>a</sup>						Control variables <sup>b</sup>					
	Step 2:	.415					Step 2:	.661				
	Constant		4.533	0.285	15.915**		Constant		0.868	0.312	2.781**	
	Undermet pay standing expectations		0.209	0.058	3.602**		Undermet pay standing expectations		-0.260	0.067	-3.855**	
Model	Step 3:	.651										
2	Constant		1.889	0.403	4.685**							
	Undermet pay standing expectations		0.169	0.049	3.458**							
	Victim sensitivity		0.582	0.072	8.131**							
Model	Step 4:	.663										
3	Constant		1.766	0.404	4.377**							
	Undermet pay standing expectations		0.579	0.207	2.797**							
	Victim sensitivity		0.617	0.073	8.464**							
	Undermet pay standing expectations × Victim sensitivity		-0.095	0.047	-2.037*							

Note. N = 157. Unstandardized regression coefficients are reported.

Abbreviation: SE, standard error.

<sup>a</sup>Job satisfaction (T1), revealed pay standing condition (low/high) and gender were entered as control variables in Step 1.

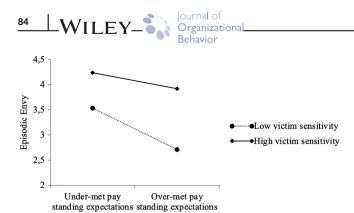
<sup>b</sup>Job satisfaction (T1), revealed pay standing condition (low/high), income, age, and gender were entered as control variables in Step 1. The nominal variables were computed as dummy variables.

p < .05. p < .01.

Journal of

Behavior

WILEY Organizational



**FIGURE 3** Interaction between undermet pay standing expectations and victim sensitivity on episodic envy (Study 3). When victim sensitivity was low, undermet pay standing expectations related to episodic envy (-1 SD, B = 0.267, SE = 0.068, p < .01). When victim sensitivity was high, the regression coefficient was nonsignificant (+1 SD, B = 0.102, SE = 0.058, p = .082)

(T2). For Hypothesis 4, we tested whether episodic envy mediated the effects of undermet pay standing expectations on job satisfaction (T2) for low but not high victim sensitivity individuals using the SPSS process macro. Consistent with Hypothesis 4, the employed bootstrapped moderated mediation test showed that victim sensitivity significantly moderated the indirect effect between undermet pay standing expectations and job satisfaction (T2) (*index* of moderated mediation = .060, *SE* = 0.032, 95% CI [.002, .126], 10 000 resamples). Probing the moderated mediating effect for different values of victim sensitivity showed that at low levels of victim sensitivity (-1 *SD*), the indirect effect between undermet pay standing expectations and job satisfaction (T2) was stronger and significant (=-.174, *SE* = 0.051, 95% CI [-.284, -.083]); however, at high levels of victim sensitivity (+1 *SD*), the indirect effect turned nonsignificant (=-.071, *SE* = 0.046, 95% CI [-.167, .015]).

# 3.3.6 | Additional analyses

We calculated all models without all control variables to check the robustness of our findings. In the absence of all control variables, the moderated indirect effect decreased to being marginally significant even though—on a descriptive level—the pattern of results remained (the results table is provided in the Supporting Information). Since we were interested in changes in job satisfaction (T2) after a shift to pay transparency, retaining job satisfaction (T1) in all our models is consistent with the logic of a repeated measures design (Allison, 1990). We therefore retained job satisfaction (T1), which showed that all results remained essentially the same as in our main analyses.

## 3.3.7 | Discussion

The findings of Study 3 were consistent with the results in Study 1 regarding the direct and indirect effects of undermet pay standing expectations on episodic envy and job satisfaction. In addition, victim

sensitivity moderated the indirect effect via episodic envy on job satisfaction, suggesting that the uncertainty prime employed in Study 3 was more successful than the uncertainty prime employed in Study 1 in triggering high victim sensitivity participants' suspicions, which resulted in the expected stronger negative response in low victim sensitivity participants to undermet pay standing expectations. Therefore, consistent with our Study 2 finding, the response to a shift to pay transparency was contingent on victim sensitivity.

# 4 | GENERAL DISCUSSION

More transparent pay is an increasingly relevant pay administration option. However, the individual-level effects of shifting from one pay communication strategy to another remain poorly understood. We investigated the discrepancies between pay standing expectations and revealed pay standing as an antecedent of employee satisfaction following a shift to pay transparency. Given the central role of pay standing for employees' work selves, we proposed that negative discrepancies will lead to a decrease in job satisfaction. The results of Studies 1 and 3 are consistent with our predictions that undermet pay standing expectations decrease job satisfaction and that this relationship might be explained by increased feelings of envy toward better coworkers. Study 2 provides only partial support for our hypotheses. Notably, employees with low levels of victim sensitivity showed stronger reactions to undermet pay standing expectations, which supports our SeMI model-derived assumption that they might be less wary of being inequitably treated than their high victim sensitivity peers. This assumption is corroborated in Study 3. Below, we discuss the theoretical and practical implications of our results.

## 4.1 | Theoretical implications

First, our studies contribute to the pay transparency literature by examining previously unrecognized effects of discrepancies between expected and revealed pay standing on the relationship between a shift to pay transparency and critical employee outcomes. Individual reactions to pay transparency are generally understood as a function of pay standing. Our research extends this perspective by adding selfrelevant pay standing perceptions under pay secrecy as a contextual factor that individuals weigh in their evaluation of their revealed pay standing and thereby constitute a hidden source of envy and dissatisfaction. In this way, the present study advances pay communication research by alluding to the complex comparison processes that individuals make in regard to their pay, specifically in the direct aftermath of a shift to pay transparency.

Second, our findings extend undermet expectations theory to the field of pay communication research by suggesting that when individuals' pay standing expectations are undermet, they perceive their revealed pay standing more negatively than when their expectations are met or overmet. As predicted, undermet pay standing expectations elicited envy, a negative affective reaction toward higher paid others, which is consistent with previous research linking envy to situations where others' better achievements become salient (Bamberger & Belogolovsky, 2017; Schaubroeck & Lam, 2004). This particularly aligns with Bamberger and Belogolovsky's (2017) recent findings, where pay comparisons with higher paid others under pay transparency led to increased feelings of envy. In our research, we make an important additional point by highlighting that certain circumstances (i.e., having prior pay standing expectations) may influence the degree to which individuals feel personally disparaged by unfavorable comparisons with higher paid others and therefore particularly likely to experience envy under pay transparency. Consistent with undermet expectations research, we also observed that undermet pay standing expectations led to decreased job satisfaction, suggesting that for individuals with inappropriately high pay standing expectations, the shift to pay transparency may have negative consequences on job satisfaction. Given the popular notion that a shift to pay transparency may solve problems of pay inequity with positive implications on employee satisfaction, this finding provides an important and more nuanced insight into the pre-existing factors that may curtail the supposed positive consequences of a shift.

Third, our findings enhance the understanding of when and why undermet pay standing expectations may result in decreased job satisfaction. Overall, the three studies in this paper support our proposition that, once activated, envy could serve as a psychological mechanism for explaining the relationship between undermet pay standing expectations and decreased job satisfaction. Consistent with prior research, which linked envy to more subtle cognitive responses, these results suggest that envy may prompt job dissatisfaction because blaming the system responsible for their disappointing outcome may help to in restoring the envying individual's self-esteem.

In addition to investigating envy as a driver of dissatisfaction, the focus of this research was to demonstrate that undermet pay standing expectations and subsequent envy and dissatisfaction reactions depend on individuals' justice dispositions, specifically victim sensitivity. Contingencies between justice dispositions and pay communication have previously been demonstrated in controlled lab designs (Bamberger & Belogolovsky, 2010). In Studies 2 and 3, which included field and experimental data, we observed that negative responses to undermet pay standing expectations following the shift to pay transparency were stronger in low but not high victim-sensitive individuals. This is interesting because relative to high victim-sensitive individuals, those with low levels of victim sensitivity usually react less strongly to events that can be deemed personally unfair. However, adopting a SeMI model lens, nontransparent pay could be regarded as a trigger for high victim sensitivity individuals' expectations of inequity, which might explain this seemingly paradoxical pattern. Support for this line of reasoning comes from Study 3, where we were able to replicate this pattern with a refined (compared to Study 1) uncertainty prime. Moreover, if, as suggested by the SeMI model, low victim sensitivity individuals are less wary of pay inequity before pay transparency, then the wide horizontal pay dispersion revealed in the organization studied in Study 2 may have made encountering a lower-than-expected



pay standing at a considerably lower point along the referent pay distribution particularly surprising for low victim sensitivity employees. This, in turn, may potentially explain why we did not observe unconditional effects of undermet pay standing expectations in Study 2. According to these findings, there may not be a simple answer to the question of whether a shift to pay transparency decreases inequity perceptions. Rather, it seems that organizations should weigh the ratio of low to high victim-sensitive employees in combination with the width of the pay gaps between employees at the top and bottom ends of their referent pay distributions into their decision whether pay should be made transparent.

Fourth, using field data extended prior lab-based studies and answered recent calls to investigate a shift to pay transparency in field settings. The field data constituted a rare opportunity to examine employees before and after they experienced a shift to pay transparency in their organization, which allowed us to assess expected pay standing before and revealed pay standing after the shift, conveying previously unrecognized effects of undermet pay standing expectations. Although we did not observe unconditional effects of undermet pay standing expectations on envy and job dissatisfaction in the field, the field data provided a realistic test of and empirical support to the overall model that undesirable negative reactions to a shift to pay transparency may be contingent on dispositional victim sensitivity.

# 4.2 | Limitations

There are limitations to the present research. In regard to unsupported hypothesized relations, for example, the experimental data in Study 1 did not support the hypothesized moderated mediation by victim sensitivity. Although we did find the hypothesized moderation in the experimental data in Study 3 after refining the uncertainty prime, the findings provide inconclusive evidence with regard to our proposition that nontransparent pay, per se, may trigger the suspicious mindset in high but not low victim sensitivity individuals. Future research should therefore focus on what it is about nontransparent pay that indicates a threat of justice violations to high victim sensitivity individuals that may lead them to expect future maltreatment.

We also find that the field data failed to support our hypothesis regarding the unconditional impact of undermet pay standing expectations on job satisfaction. This is interesting because past research consistently demonstrates that discrepancies between expected and received job conditions have robust impacts on satisfaction (e.g., Williams et al., 2006). There are potential explanations for this finding. First, in Study 2, individuals' responses regarding their feelings of envy and job satisfaction were measured 3 months after the shift to pay transparency. Overall, this time gap seems to have yielded weaker reactions to undermet pay standing expectations compared to Studies 1 and 3. Future research should therefore assess the potential role that the timing of measuring individuals' reactions to a shift to pay transparency plays and investigate whether psychological responses to unexpected outcomes potentially wear off once 86

WILEY-

employees have become accustomed to the new pay communication policy. Second, in relation to the previous argument, future research should investigate the impact of organizations' measures to decrease unjustified horizontal pay differences following a shift to pay transparency. Although we only obtained approximate information about the surveyed organization's horizontal pay dispersion, our pay policy analysis suggested that there were unjustified pay differences among same-level employees. While revealing that these pay differences may have initially upset employees, there were also subsequent measures undertaken to decrease (unjustified) pay differences. Thus, in this specific sample, employees' pay may have already been adjusted (or they had been given the prospect of pay adjustments) at the time of our survey, which could explain our findings. Third, it may be that our Study 2 instructions to compare one's salary with the highest salaries may have weakened rather than strengthened our envy measure. Although our pretest suggested the salience of the highest salaries across individuals, the comparison may have produced feelings of envy among those who expected to have a superior pay standing themselves. While this resonates with prior pay comparison studies (e.g., Trevor & Wazeter, 2006) in which people's pay standing determined their reference group, more research is needed to address the role of different comparison standards under pay transparency. To broaden our understanding, future research could adapt procedures from past comparison studies, specifically by Harris et al. (2008), who asked employees to make multiple comparisons with lower, equal-, and higher paid coworkers and investigated the strength of each comparison's impact on satisfaction via hierarchical regression analysis.

Another limitation that needs to be addressed is that the obtained measures were self-reported in both studies (Podsakoff et al., 2003). We mitigated the problem of common method bias in the field study (Study 2) by measuring our variables at different points in time. Future studies could additionally use different levels of analysis, for example, by asking employees with higher relative pay levels to rate their colleagues' envious/ill-willed behaviors toward them.

# 4.3 | Practical implications

For some time now, pay transparency has been discussed as a way to help employers increase satisfaction and pay equity, both of which are strong reasons to explain why employers are considering turning away from pay secrecy. A key insight from our research is that organizations that are considering a shift to pay transparency should be aware that this may not imminently translate into positive employee reactions. In our studies, we show that when certain aspects of employees' existing pay perceptions—specifically pay standing—are challenged as a consequence of more accurate pay information, this can inflict harm on the employee–employer relationship. To avoid this, organizations should reflect on the extent of the knowledge their employees have about how their pay is determined relative to others at their job level. If, for example, pay determination criteria are unclear under pay secrecy, there might be increased risk that a shift to pay transparency may decrease rather than increase employees' job satisfaction. In this case, compensation managers could mitigate inaccurate pay standing expectations and associated costs by investing more time into communicating how pay is determined before a shift to pay transparency. Conducting salary structure analyses and closing unjustified pay gaps may be additional measures that organizations could undertake to prepare a shift to pay transparency. In this way, the appropriateness of individuals' revealed pay standing can be ensured and justified, which, according to pay dispersion research (Shaw, 2014), increases employees' acceptance of where they stand relative to referent others and would therefore facilitate the shift to pay transparency.

# 5 | CONCLUSION

Ensuring that pay is fair is commonly seen as an important driver of positive job attitudes, and pay transparency is regarded as an instrument to achieve this. Our research reveals that a shift to pay transparency itself does not automatically lead to perceptions o pay equity and points to the conditions under which pay transparency may in fact have negative consequences on job attitudes such as job satisfaction. We hope that this research invites future researchers to further explore the complex nature of pay transparency so that more organizations know how to best realize its supposed benefits.

## ACKNOWLEDGMENTS

We are grateful for the rare opportunity to study a pay transparency shift in the field. We thank editor-in-chief Christian Resick, Suzanne Masterson, and two anonymous reviewers for their valuable insights and constructive feedback throughout the process of publishing our research.

Open Access funding enabled and organized by Projekt DEAL.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## REFERENCES

- Aguinis, H., & Bradley, K. J. (2014). Best practice recommendations for designing and implementing experimental vignette methodology studies. Organizational Research Methods, 17(4), 351–371. https://doi.org/ 10.1177/1094428114547952
- Aiken, L. S., West, S. G., & Reno, R. R. (1991). Multiple regression: Testing and interpreting interactions. Sage Publications, Inc.
- Allison, P. D. (1990). Change scores as dependent variables in regression analysis. Sociological Methodology, 20, 93–114. https://doi.org/10. 2307/271083
- Arnold, A., Fulmer, I. S., Sender, A., Allen, D. G., & Staffelbach, B. (2018). Compensation and pay transparency practices in Switzerland–Survey report 2018. https://doi.org/10.13140/RG.2.2.22956.16005
- Bamberger, P., & Belogolovsky, E. (2010). The impact of pay secrecy on individual task performance. *Journal of Personnel Psychology*, 63(4), 965–996. https://doi.org/10.1111/j.1744-6570.2010.01194.x
- Bamberger, P., & Belogolovsky, E. (2017). The dark side of transparency: How and when pay administration practices affect employee helping.

Journal of Applied Psychology, 102(4), 658–671. https://doi.org/10. 1037/apl0000184

- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514. 51.6.1173
- Bedeian, A. G., Ferris, G. R., & Kacmar, K. M. (1992). Age, tenure, and job satisfaction: A tale of two perspectives. *Journal of Vocational Behavior*, 40(1), 33–48. https://doi.org/10.1016/0001-8791(92)90045-2
- Borgmann, B. (2017). Germany: New act on pay transparency. February 17, 2021, Retrieved from https://www.shrm.org/resourcesandtools/ legal-and-compliance/employment-law/pages/germany-paytransparency.aspx
- Brislin, R. W. (1986). The wording and translation of research instruments. In W. Lonner & J. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137–164). Sage.
- Card, D., Mas, A., Moretti, E., & Saez, E. (2012). Inequality at work: The effect of peer salaries on job satisfaction. *American Economic Review*, 102(6), 2981–3003. https://doi.org/10.1257/aer.102.6.2981
- Chanel, G., Kierkels, J. J., Soleymani, M., & Pun, T. (2009). Short-term emotion assessment in a recall paradigm. *International Journal of Human-Computer Studies*, 67(8), 607–627. https://doi.org/10.1016/j.ijhcs. 2009.03.005
- Cohen-Charash, Y. (2009). Episodic envy. *Journal of Applied Social Psychology*, 39, 2128–2173. https://doi.org/10.1111/j.1559-1816.2009. 00519.x
- Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. Organizational Behavior and Human Decision Processes, 86(2), 278–321. https://doi.org/10.1006/obhd.2001.2958
- Colella, A., Paetzold, R. L., Zardkoohi, A., & Wesson, M. (2007). Exposing pay secrecy. Academy of Management Review, 32(1), 55–71. https:// doi.org/10.5465/amr.2007.23463701
- Coyle-Shapiro, J., & Kessler, I. (2000). Consequences of the psychological contract for the employment relationship: A large scale survey. *Journal* of Management Studies, 37(7), 903–930. https://doi.org/10.1111/ 1467-6486.00210
- Crosby, F. (1984). Relative deprivation in organizational settings. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (pp. 55–93). JAI Press.
- Day, N. E. (2012). Pay equity as a mediator of the relationships among attitudes and communication about pay level determination and pay secrecy. *Journal of Leadership and Organizational Studies*, 19, 426–476. https://doi.org/10.1177/1548051812455240
- Dolbier, C. L., Webster, J. A., McCalister, K. T., Mallon, M. W., & Steinhardt, M. A. (2005). Reliability and validity of a single-item measure of job satisfaction. *American Journal of Health Promotion*, 19(3), 194–198. https://doi.org/10.4278/0890-1171-19.3.194
- Duffy, M. K., Shaw, J. D., & Schaubroeck, J. (2008). Envy in organizational life. In *Envy: Theory and research* (pp. 167–189). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195327953.003.0010
- Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, 105(3), 399–412. https://doi. org/10.1111/bjop.12046
- Edwards, J. R. (1994). The study of congruence in organizational behavior research: Critique and a proposed alternative. Organizational Behavior and Human Decision Processes, 58(1), 51–100. https://doi.org/10. 1006/obhd.1994.1029
- Frey, B. S., Schaffner, M., Schmidt, S. L., & Torgler, B. (2013). Do employees care about their relative income position? Behavioral evidence focusing on performance in professional team sport. *Social Science Quarterly*, 94, 912–932. https://doi.org/10.1111/ssqu. 12024

Fulmer, I. S., & Shaw, J. D. (2018). Person-based differences in pay reactions: A compensation-activation theory and integrative conceptual review. *Journal of Applied Psychology*, 103, 939–958. https://doi.org/ 10.1037/apl0000310

-WILEY-

- Gardner, D. G., Van Dyne, L., & Pierce, J. L. (2004). The effects of pay level on organization-based self-esteem and performance: A field study. *Journal of Occupational and Organizational Psychology*, 77(3), 307–322. https://doi.org/10.1348/0963179041752646
- Gerhart, B., Rynes, S. L., & Fulmer, I. S. (2009). Pay and performance: Individuals, groups, and executives. *The Academy of Management Annals*, 3(1), 251–315. https://doi.org/10.1080/19416520903047269
- Gibbs, M., & Hendricks, W. (2004). Do formal salary systems really matter? ILR Review, 58(1), 71–93. https://doi.org/10.1177/ 001979390405800104
- Gollwitzer, M., Rothmund, T., Alt, B., & Jekel, M. (2012). Victim sensitivity and the accuracy of social judgments. *Personality and Social Psychology Bulletin*, 38(8), 975–984. https://doi.org/10.1177/ 0146167212440887
- Gollwitzer, M., Rothmund, T., & Süssenbach, P. (2013). The Sensitivity to Mean Intentions (SeMI) model: Basic assumptions, recent findings, and potential avenues for future research. *Social and Personality Psychology Compass*, 7(7), 415–426. https://doi.org/10.1111/spc3.12041
- Greenberg, J., Roberge, M.-É., Ho, V. T., & Rousseau, D. M. (2004). Fairness in idiosyncratic work arrangements: Justice as an i-deal. In *Research in personnel and human resources management*. Emerald Group Publishing Limited.
- Hancock, G. R., & An, J. (2020). A closed-form alternative for estimating ω reliability under unidimensionality. *Measurement: Interdisciplinary Research and Perspectives*, 18(1), 1–14.
- Harris, M. M., Anseel, F., & Lievens, F. (2008). Keeping up with the Joneses: A field study of the relationships among upward, lateral, and downward comparisons and pay level satisfaction. *Journal of Applied Psychology*, 93, 665–673. https://doi.org/10.1037/0021-9010.93. 3.665
- Hayes, A. F. (2018). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.). The Guilford Press.
- Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But .... Communication Methods and Measures, 14(1), 1–24.
- Indeed. (2020). Marketing manager salaries in the United Kingdom. April 04, 2020, Retrieved from https://www.indeed.co.uk/salaries/ marketing-manager-Salaries
- Jones, D. A., & Skarlicki, D. P. (2013). How perceptions of fairness can change: A dynamic model of organizational justice. Organizational Psychology Review, 3(2), 138–160. https://doi.org/10.1177/ 2041386612461665
- Judge, T. A., & Klinger, R. (2008). Job satisfaction: Subjective well-being at work. In M. Eid & R. J. Larsen (Eds.), The science of subjective well-being. The Guildford Press.
- Judge, T. A., Piccolo, R. F., Podsakoff, N. P., Shaw, J. C., & Rich, B. L. (2010). The relationship between pay and job satisfaction: A meta-analysis of the literature. *Journal of Vocational Behavior*, 77(2), 157–167. https://doi.org/10.1016/j.jvb.2010.04.002
- Khan, A. K., Quratulain, S., Bell, M., & C. (2014). Episodic envy and counterproductive work behaviors: Is more justice always good? *Journal of Organizational Behavior*, 35(1), 128–144. https://doi.org/10.1002/job. 1864
- Lawler, E. E. III (1965). Managers' perceptions of their subordinates' pay and of their superiors' pay. *Personnel Psychology*, 18, 413–423. https://doi.org/10.1111/j.1744-6570.1965.tb00296.x
- Locke, E. A. (1976). The nature and causes of job satisfaction. In M. P. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297–1350). Rand McNally.

Organizationa

Journal of Organizational Behavior

- Maltese, S., Baumert, A., Schmitt, M. J., & MacLeod, C. (2016). How victim sensitivity leads to uncooperative behavior via expectancies of injustice. Frontiers in Psychology, 6, 1–11. https://doi.org/10.3389/fpsyg. 2015.02059
- McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. Psychological Methods, 23(3), 412–433. https://doi.org/10.1037/ met0000144
- Ockenfels, A., Sliwka, D., & Werner, P. (2014). Bonus payments and reference point violations. *Management Science*, 61, 1496–1513. https://doi.org/10.1287/mnsc.2014.1949
- Palan, S., & Schitter, C. (2018). Prolific.ac—A subject pool for online experiments. Journal of Behavioral and Experimental Finance, 17, 22–27. https://doi.org/10.1016/j.jbef.2017.12.004
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42(1), 185–227. https://doi.org/10.1080/ 00273170701341316
- Robinson, S. L., & Wolfe Morrison, E. (2000). The development of psychological contract breach and violation: A longitudinal study. *Journal of Organizational Behavior*, 21(5), 525–546. https://doi. org/10.1002/1099-1379(200008)21:5<525::AID-JOB40>3.0.CO;2-T
- Schaubroeck, J., & Lam, S. S. (2004). Comparing lots before and after: Promotion rejectees' invidious reactions to promotees. Organizational Behavior and Human Decision Processes, 94(1), 33–47. https://doi.org/ 10.1016/j.obhdp.2004.01.001
- Schaubroeck, J., Shaw, J. D., Duffy, M. K., & Mitra, A. (2008). An undermet and over-met expectations model of employee reactions to merit raises. *Journal of Applied Psychology*, 93, 424–434. https://doi.org/10. 1037/0021-9010.93.2.424
- Scheller, E. M., & Harrison, W. (2018). Ignorance is bliss, or is it? The effects of pay transparency, informational justice and distributive justice on pay satisfaction and affective commitment. *Compensation & Benefits Review*, 50(2), 65–81. https://doi.org/10.1177/ 0886368719833215
- Schmitt, M., Baumert, A., Gollwitzer, M., & Maes, J. (2010). The justice sensitivity inventory: Factorial validity, location in the personality facet space, demographic pattern, and normative data. *Social Justice Research*, 23(2–3), 211–238. https://doi.org/10.1007/s11211-010-0115-2
- Schmitt, M., Gollwitzer, M., Maes, J., & Arbach, D. (2005). Justice sensitivity. European Journal of Psychological Assessment, 21(3), 202–211. https://doi.org/10.1027/1015-5759.21.3.202
- Scholl, R. W., Cooper, E. A., & McKenna, J. F. (1987). Referent selection in determining equity perceptions: Differential effects on behavioral and attitudinal outcomes. *Personnel Psychology*, 40(1), 113–124. https:// doi.org/10.1111/j.1744-6570.1987.tb02380.x
- Shaw, J. D. (2014). Pay dispersion. Annual Review of Organizational Psychology and Organizational Behavior, 1(1), 521–544. https://doi.org/10. 1146/annurev-orgpsych-031413-091253
- Shaw, J. D., Duffy, M. K., Mitra, A., Lockhart, D. E., & Bowler, M. (2003). Reactions to merit pay increases: A longitudinal test of a signal sensitivity perspective. *Journal of Applied Psychology*, 88(3), 538–544. https://doi.org/10.1037/0021-9010.88.3.538

- Sherf, E. N., & Morrison, E. W. (2020). I do not need feedback! Or do I? Self-efficacy, perspective taking, and feedback seeking. *Journal of Applied Psychology*, 105(2), 146–165. https://doi.org/10.1037/ apl0000432
- Smit, B. W., & Montag-Smit, T. (2018). The pay transparency dilemma: Development and validation of the Pay Information Exchange Preferences Scale. *Journal of Applied Psychology*.
- Stepstone. (2020). IT-Projektmanager/in Gehälter in Deutschland. February 19, 2020, Retrieved from https://www.stepstone.de/gehalt/ IT-Projektmanager-in.html
- Thierry, H. (1992). Payment: Which meanings are rewarding? American Behavioral Scientist, 35(6), 694–707. https://doi.org/10.1177/ 0002764292035006006
- Trevor, C. O., & Wazeter, D. L. (2006). A contingent view of reactions to objective pay conditions: Interdependence among pay structure characteristics and pay relative to internal and external referents. *Journal* of Applied Psychology, 91, 1260–1275. https://doi.org/10.1037/0021-9010.91.6.1260
- van Prooijen, J.-W., van den Bos, K., & Wilke, H. A. (2002). Procedural justice and status: Status salience as antecedent of procedural fairness effects. *Journal of Personality and Social Psychology*, *83*(6), 1353–1361. https://doi.org/10.1037/0022-3514.83.6.1353
- Williams, M. L., McDaniel, M. A., & Nguyen, N. T. (2006). A meta-analysis of the antecedents and consequences of pay level satisfaction. *Journal* of Applied Psychology, 91, 392–413. https://doi.org/10.1037/0021-9010.91.2.392
- Yao, Y. H. A., Locke, E. A., & Jamal, M. (2018). On a combined theory of pay level satisfaction. *Journal of Organizational Behavior*, 39, 448–461. https://doi.org/10.1002/job.2243

#### **AUTHOR BIOGRAPHIES**

Kathrin Schnaufer is a PhD candidate enrolled at the Chair of Business Psychology and Leadership at HHL Leipzig Graduate School of Management. Prior to her doctorate program, she earned her postgraduate degree in psychology in 2012 from King's College London. Her research focuses on compensation related issues affecting employee attitudes and behaviors.

**Professor Fabian Christandl** is a Professor of Business Psychology and Experimental Research Dean at the Hochschule Fresenius in Cologne. He is editor of the scientific journal 'Economic Psychology' and reviews for various journals and committees in scientific organizations. His research focuses on organizational and consumer psychology.

**Professor Sebastian Berger** gained his PhD in business and social psychology at the University of Cologne. Since 2015 he is an assistant professor for organizational research at the University of Bern. In his research, he focuses on evidence-based management, organizational behavior, economics and psychology of negotiations.



Organizational Behavior 89

**Professor Timo Meynhardt** holds the Dr. Arend Oetker Chair of Business Psychology and Leadership at HHL Leipzig Graduate School of Management and is managing director of the Center for Leadership and Values in Society at the University of St. Gallen. He focuses on psychological and business management issues such as public value management, leadership and competency diagnostics.

**Professor Mario Gollwitzer** holds the social psychology chair at Ludwig-Maximilians-University (LMU) in Munich, Germany. Prior to his position in Munich, he was a full professor of methodology and social psychology at Philipps-University Marburg. He is associate editor for the Social Justice Research journal. His research focuses on social psychology, individual differences in justice sensitivity and psychological consequences of violent video games.

# SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

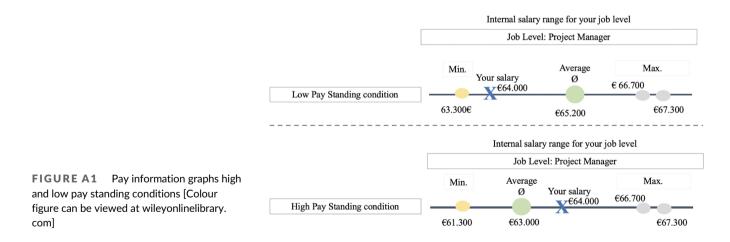
How to cite this article: Schnaufer, K., Christandl, F., Berger, S., Meynhardt, T., & Gollwitzer, M. (2022). The shift to pay transparency: Undermet pay standing expectations and consequences. *Journal of Organizational Behavior*, 43(1), 69–90. https://doi.org/10.1002/job.2575

# APPENDIX A: SCENARIO STUDY 1 UNCERTAINTY PRIME AND PAY INFORMATION FIGURE

unaware of the fact that your colleague actually earns more than you. Furthermore, of course, it may also be the case that you earn more than your colleagues.

## A.1 | Uncertainty prime Study 1

Because of a culture of pay secrecy in your organization, you do not know the salaries of your colleagues. It is therefore quite likely that while you and your colleagues are doing the same job, you would be



# APPENDIX B: PAY POLICY ANALYSIS FOR THE ORGANIZATION IN STUDY 2

TABLE B1	Pay policy analysis Study 2
----------	-----------------------------

		Annual gross salary (€) <sup>c</sup>				
Career level <sup>a</sup>	Number of employees	Min.	Max.	Median	Percentage with bonus pay	Median tenure
Associate	19	30.000	80.000	60.000	21%	1–3 years
Junior Manager	18	30.000	40.000	40.000	12%	1–3 years
Manager	109	40.000	80.000	50.000	21%	1–3 years
Senior Manager	68	50.000	100.000	70.000	10%	1–3 years
Team Lead	31	40.000	100.000	80.000	42%	3-5 years
Top Management <sup>b</sup>	20	70.000	100.000	100.000	90%	3-5 years
Total	265	30.000	100.000	60.000	26%	1–3 years

<sup>a</sup>We selected the T1 dataset for our analysis because it contained (self-reported) compensation data. From N = 327 employees, n = 62 employees were excluded because they could not be clearly allocated to a career level (i.e., "freelancer," "working student," and "other"). Thus, the final sample entailed answers from n = 265 employees.

<sup>b</sup>We summarized "director" and "vice president" into one top management category.

<sup>c</sup>Participants reported their annual gross salary ranges. They selected a pay range category within which their pay level fell (e.g., €35.000-€44.999 and €45.000-€54.999). We used the central value of each pay range category (e.g., for €35.000-€44.999, the central value was €40.000) to derive an approximate impression of the organization's pay dispersion (minimum, maximum, and median pay levels). Base incomes of €100.000 were initially reported as "€95.000 or more," which represented the highest income category.