What Are You Hiding? Pay Secrecy and Its Effect on Employees' Misreporting

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Abstract: Using two experiments, I examine three research questions. First, I explore how pay inequity (i.e., unexplained differences in employee pay) affects management's choice of a pay secrecy or pay transparency policy. Second, I examine how this choice affects employee misreporting and the signal the policy choice sends about pay inequity. Finally, I test how employees respond when pay information is disclosed through unintended leakage after management chooses a pay secrecy policy. I find that management tries to hide pay inequity by choosing a pay secrecy policy. However, this strategy is ineffective because employees interpret a pay secrecy policy as a signal that pay is inequitable. Specifically, pay secrecy does not reduce misreporting among inequitably paid employees relative to pay transparency. I also find that a pay secrecy policy increases misreporting among equitably paid employees because they mistakenly believe their pay is inequitable. Finally, employees react more negatively when they learn their pay is inequitable through a leak than from a pay transparency policy. Implications for theory and practice are discussed.

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Preface

I thank the faculty at the University of Pittsburgh for being extraordinary models of scholarship and mentorship. They have taught me so much, both in formal instruction and informally by the model they set and to which I aspire. In particular, I thank my dissertation committee members Don Moser (chair), Harry Evans, Vicky Hoffman, Patrick Martin, and Xu Qin. Their impact on me is immeasurable.

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These people have been tremendously valuable to me as professional role models and colleagues. However, that description does not capture nearly everything they mean to me. I will always cherish and be thankful for the personal love and care they showed me during some of the most difficult periods of my life.

I thank my friends and family for their inexhaustible supply of positivity and encouragement. I thank my children, Alexa and Bennett, for giving me motivation and lift I get from no one else in the world. Finally, I especially thank my wife, Kara, from whom I have asked so much and received even more. I love you.

1.0 Introduction

A firm's pay communication policy comprises the organizational practices regarding what, if, when, and how employee pay information is shared with employees and external stakeholders (Marasi and Bennett 2016). Pay communication policies ranges from total pay secrecy (where employees know nothing more than their own pay) to total pay transparency (where the pay for all employees is disclosed by the firm to all employees and even external stakeholders). In private-sector firms in the United States, about two thirds of employees work in firms with some degree of pay secrecy (Hegewisch, Williams, and Drago 2017).

The substantial variation in pay communication policies (hereafter, for brevity simply "pay policies") observed in practice raises questions about why firms choose different policies and how these policies affect employee behavior. Prior research has focused almost exclusively on employee reactions to pay policies and has largely ignored how management chooses a policy (see Marasi, Wall, and Bennett 2018 for a review). While prior experimental research provides useful insights into employees' reaction to pay policies when they are randomly assigned to different policies, no prior studies have examined employee behavior in a setting in which management intentionally chooses the pay policy and employees know that management intentionally made this choice. I address three related research questions that arise in such a setting. First, I explore how management's concern about employees' potential reaction to differences in pay (hereafter, pay inequity) affects management's choice of pay policy. Second, I examine how employees react to management's policy choice and the signal this choice sends about pay inequity. Finally, I test the effect of unintended leakage of employee pay information after management chooses a pay secrecy policy.

Employees' perceptions that pay is inequitable can have negative consequences for firms (Kepes et al. 2009; Bloom 1999; Trevor, Reilly, Gerhart 2012; Downes and Choi 2014). One such consequence is increased opportunistic misreporting by employees (Guo, Libby, Liu, and Tian 2020). In participative budgeting settings, employees have incentives to misreport project costs to create budgetary slack (Shields and Shields 1998; Libby and Lindsay 2010). Because such opportunistic misreporting is costly to the firm, management has an incentive to choose a pay policy that they believe will minimize it. My first research question is whether management chooses a pay secrecy policy to try to hide pay inequity from employees to reduce or prevent any resulting misreporting.

My second research question examines how employees respond to the pay policy management chooses. Prior research precluded observing any unintended signaling effects inherent in management's pay policy choice by randomly assigning employees to different pay policies (see Nosenzo 2013; Greiner, Ockenfels, and Werner 2011; and Bamberger & Belogolovsky 2010 for examples). Specifically, I examine whether employees interpret management's choice of a pay secrecy policy as a signal that pay is inequitable and whether this affects employees' reporting behavior. If employees interpret the choice of a secrecy policy as a signal that pay is inequitable, then trying to hide pay inequity to reduce misreporting may be ineffective. In contrast, if employees do not interpret management's choice of a pay secrecy policy as a signal that pay is inequitable, then a pay secrecy policy could work as intended by reducing misreporting in response to pay inequity. Interestingly, when pay is actually equitable, employees could mistakenly interpret a pay secrecy policy as a signal that their pay is inequitable and thus misreport more, resulting in an unintended cost to the firm.

For my final research question, I broaden my setting to include the case in which management chooses a pay secrecy policy, but pay information is later unintentionally leaked to employees. I explore whether employees' reactions to equitable and inequitable pay information depend on whether they obtained such pay information directly as part of management's pay transparency policy or through a leak of the pay information after management tried to conceal it with a pay secrecy policy.

Prior research has typically assumed that pay information available to employees and the firm's pay policy are consistent. That is, a pay secrecy (transparency) policy meant that employees did not know (knew) each other's pay. Historically, this assumption accurately described most business environments (Hegewisch, Williams, and Drago 2017). However, current trends in government regulation, increasing popularity of crowdsourced pay information websites, and generational changes in employee preferences for transparency have made it more difficult for management to maintain pay secrecy. Because of this recent change in the business environment, it is useful to understand how employees respond to leakage of pay information after management has tried to keep such information hidden from employees.

I conduct two closely interconnected experiments to examine my three main research questions. Experiment 1 addresses my first research question regarding how employee pay inequity affects management's choice of pay policy. As predicted, I find that management is more likely to choose a pay secrecy policy when the employees' pay is inequitable than when it is equitable.

Experiment 2 addresses my second and third research questions by examining how employees respond to management's choice of a pay communication policy and the effect of pay information leakage. Consistent with prior research, I find that when management chooses a pay

transparency policy, lower-paid employees misreport more than equally paid employees. However, when management chooses a pay secrecy policy, both lower-paid and equally paid employees misreport at the same high level as lower-paid employees who know they are paid less because management chose a pay transparency policy. These findings show that choosing a pay secrecy policy to hide pay inequity was ineffective. Both lower-paid and equally paid employees assumed they were paid less than their peers when pay was kept secret. Consequently, choosing a pay secrecy policy not only failed to achieve the intended benefit of reducing lower-paid employees' misreporting, but also resulted in an additional cost to the firm in the form of higher misreporting by employees who were actually paid equally.

I collected additional data in Experiment 2 to address my third research question regarding how employees respond when management chooses a pay secrecy policy but pay information is later unintentionally leaked. I predict and find that lower-paid employees misreport more when they obtain information that pay is inequitable through a leak than when they obtain the same information directly from management via a pay transparency policy. Further, post-experimental questionnaire responses show that this result is mediated by a reduced level of trust in management. Finally, I find that when management chooses a pay secrecy policy, equally paid employees misreport *less* when pay information is leaked to them than when it remains secret. This positive reaction by equally paid employees to finding out that they are equally paid when the secrecy policy made them suspect they were paid less provides further evidence that employees interpreted management's choice of a pay secrecy policy as a signal that their pay was inequitable. Although for reasons explained later, my hypotheses regarding employees' reactions focus on lower-paid and equally paid employees, as a byproduct of my experiments, I also have some limited data for

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higher paid employees. I briefly describe such data in supplementary analysis and offer some qualified post hoc observations.

My findings contribute to the literatures on pay communication, reporting honesty, and trust, and have important implications for practice. First, my study provides evidence that management may choose their company's communication policy strategically to try to reduce employee misreporting by hiding pay inequity with a pay secrecy policy. To my knowledge, my study is the first to provide evidence on how inequity in a company's pay structure affects management's choice of pay communication policy.

Second, I extend prior research on control systems as signals of management's private information. Management's choices when designing control systems can intentionally or unintentionally signal private information to employees (Cardinaels and Yin 2015; Christ, Sedatole, and Towry 2012; Christ 2013). I find that lower-paid employees interpret management's choice of a pay secrecy policy as a signal that pay is inequitable and therefore misreport as much as when they know they are paid less because management chose a pay transparency policy. In prior studies, employee participants were randomly assigned to pay secrecy or pay transparency policies and had no sense that management intentionally chose that policy. Thus, it was not possible to capture this potentially important endogenous effect.

Third, my study is the first to examine the effect of leakage of pay information when management chooses a pay secrecy policy. Leakage has become more likely because changes in regulation, the growth of pay information websites, and generational changes in willingness to share pay information have all made it more difficult for firms to maintain pay secrecy. My results suggest that firms may need to adapt their pay policies to these changing conditions.

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Lastly, I provide evidence on the psychological mechanism through which pay communication affects employee reporting in my pay leakage setting. Specifically, I provide evidence that trust in management mediates the effect of management's choice of pay policy on misreporting when pay information is leaked. Prior studies developed predictions about employee responses to pay transparency based on other psychological mechanisms for which either no supporting data were collected (Belogolovsky and Bamberger 2014) or for which no support was found (Bamberger and Belogolovsky 2010).

2.0 Background

2.1 Employee Misreporting

Many decentralized firms use participative budgeting to capitalize on the private business-relevant information held by mid-level employees (Shields and Shields 1998; Libby and Lindsay 2010). However, misaligned incentives can cause these employees to opportunistically withhold or misrepresent their private information (Evans et al. 2001; Hannan, Rankin, and Towry 2006). Employees trade off their preferences for personal wealth and honesty when making reports (Evans et al. 2001; Brickley et al. 2015). In participative budgeting settings like the one I use in this study, employees have private information about the actual cost of a project and the firm's management relies on the employees to report the project costs truthfully. By overreporting project costs, the employees can increase their personal wealth while reducing the firm's wealth. Thus, employees are incentivized to misreport project costs, and firm management is incentivized to choose a pay policy that it believes will result in the most truthful employee reporting.

2.2 Pay Comparisons

Prior research finds that differences in pay can harm organizational performance, and especially lower-paid employees' performance, when the differences are perceived as inequitable or unfair (Kepes et al. 2009; Bloom 1999; Trevor, Reilly, Gerhart 2012; Downes and Choi 2014). The underlying logic for such findings typically relies on reciprocity or fairness theory, which

predict that employees respond negatively to differences in pay they perceive to be unfair (Falk and Fischbacher 2006; Akerlof 1982). This literature shows that perceived pay fairness depends on relative pay comparisons and can influence how effectively incentive systems motivate employees.

Differences in pay can sometimes improve organizational performance when lower-paid employees accept that the difference in pay is the result of a difference in performance or contribution to organizational success (Downes and Choi 2014). However, employees often know relative performance information at only a noisy level (e.g., through informal observation) and are influenced by a self-serving bias to overestimate one's own performance, known as the illusory superiority bias (Hoorens 1998). As a result, employees may misjudge their performance relative to their peers and fail to understand that a difference in pay is, in fact, justified by a difference in performance. Such inaccurate perceptions of pay are very common. A survey of 930,000 users of the salary information website PayScale found that 61% of all respondents mistakenly believed that they were paid at least 25% less than the market wage for someone with their job title, work experience, education level, and location (Perez 2017). In fact, only 11% of those respondents who believed they were underpaid were correct while the other 89% were actually paid at or above the market wage.

In my study I operationalize pay inequity as a difference in pay between two employees with identical jobs. In experimental conditions in which there is a difference in pay and the difference is transparent, no justification for the difference in pay is provided. This operationalization is consistent with pay transparency settings in practice in which employees have access to some comparative pay information but do not have access to other to pay-relevant information such as employees' performance evaluations, tenure with the firm, or credentials

(Cooney 2018). This operationalization is also consistent with less transparent pay settings in which the firm does not have a formal pay transparency policy, but employees informally share some incomplete information about their pay without discussing all related performance metrics. In such environments, the illusory superiority bias described above is likely to cause employees to inaccurately believe they are underpaid. Consistent with this perspective, I operationalize equitable pay as equal pay and inequitable pay as unequal pay when developing my hypotheses and in my experiments.

2.3 Environmental Changes Affecting Risk of Information Leakage

Recent changes in the business environment have increased the risk of leakage of pay information to employees in which management has adopted a pay secrecy policy. New government regulations in the United States at the local, state, and federal levels have required the disclosure of more pay information (Goldstein & McGrogan 2022). In addition, the increasing popularity of crowdsourced pay information websites such as Glassdoor.com and PayScale.com have made pay information more widely available. At these websites, user self-report the firm for which they work, their geographic location, their job title, and their salary. This information is available to be searched such that employees can learn how their compensation compares to other users with the same job title, at the same firm, and/or in the same city. Finally, younger generations of employees are more comfortable sharing pay information with colleagues than older generations (Smit & Montag-Smit 2019). Collectively, these environmental changes increase the likelihood that employees know more about how their pay compares to their peers than in the past and more

than management intended when adopting a pay secrecy policy. Prior literature on the effects of pay information leakage in firms that adopt pay secrecy policies is scant.

3.0 Hypothesis Development

3.1 The Effect of Employee Pay Equity on Firm Management's Choice of Policy

Prior research on strategic reasoning finds that most individuals think only one "step" ahead in strategic situations (Camerer 2011; Brandts & Holt 1993; Stahl and Wilson 1995). An actor typically considers a second actor's naïve response when choosing a strategy but does not think two steps ahead to anticipate that the second actor's choice will likely consider the first actor's strategic incentives. Therefore, I do not expect management to think about the effect on employees' behavior of the signal they may be sending to employees when choosing a pay secrecy policy. Rather, I predict that management will only anticipate and attempt to avoid employees' possible negative reaction to a difference in pay. Therefore, my first hypothesis predicts that management will choose a pay secrecy policy more often when pay is unequal than when it is equal.

> **H1:** Management will choose a pay secrecy policy more often when employees' pay is unequal than when their pay is equal.

3.2 Signaling Effect of Choice of Policy

Prior studies suggest that management's choice of incentive and control schemes can signal private information to employees. For example, Cardinaels and Yin (2015) find that a firm's choice to incentivize honest reporting can signal that other employees are dishonest. Similarly, Garrett, Holderness, and Olsen (2020) find that incentives designed to reduce free-riding in teams signal a

norm of self-interested behavior that leads to reduced effort, and Christ, Sedatole, and Towry (2012) find that penalty framing of an incomplete contract can signal distrust in employees.

I similarly predict that management's choice of a pay secrecy policy will signal to employees that pay is unequal whether or not it is actually unequal, and further that employees will assume they are underpaid. That is, although the signal sent by a pay secrecy policy does not clearly indicate whether any specific employee is paid less or more than another employee, I expect the signal to increase employee misreporting. This expectation reflects the finding from prior research that employees tend to overestimate the pay of other employees at the same organizational level (Lawler 1965). As explained earlier, employees often mistakenly believe that they are unfairly underpaid relative to the prevailing market wage for similar positions even when they are not (Perez 2017). Therefore, when management chooses a pay secrecy policy, I expect employees to assume that management is trying to hide the fact that they are paid less than other employees and thus misreport at the same level as lower-paid employees who know they are paid less via a pay transparency policy.

To summarize, I predict that when management chooses a pay secrecy policy, both equally paid and lower-paid employees will misreport at the same relatively high level as lower-paid employees when management chooses a pay transparency policy. Further, there will be less misreporting only when employees know they are paid equally because management chooses a pay transparency policy. This prediction results in the interaction depicted in Figure 1and is stated formally as follows:

> **H2:** When management chooses a pay secrecy policy, equally paid and lower-paid employees will misreport at the same high level as lower-paid employees when management chooses a pay transparency policy; employees will misreport less only when they are paid equally and management chooses a pay transparency policy.

Figure 1 Hypothesized Pattern of Results for H2
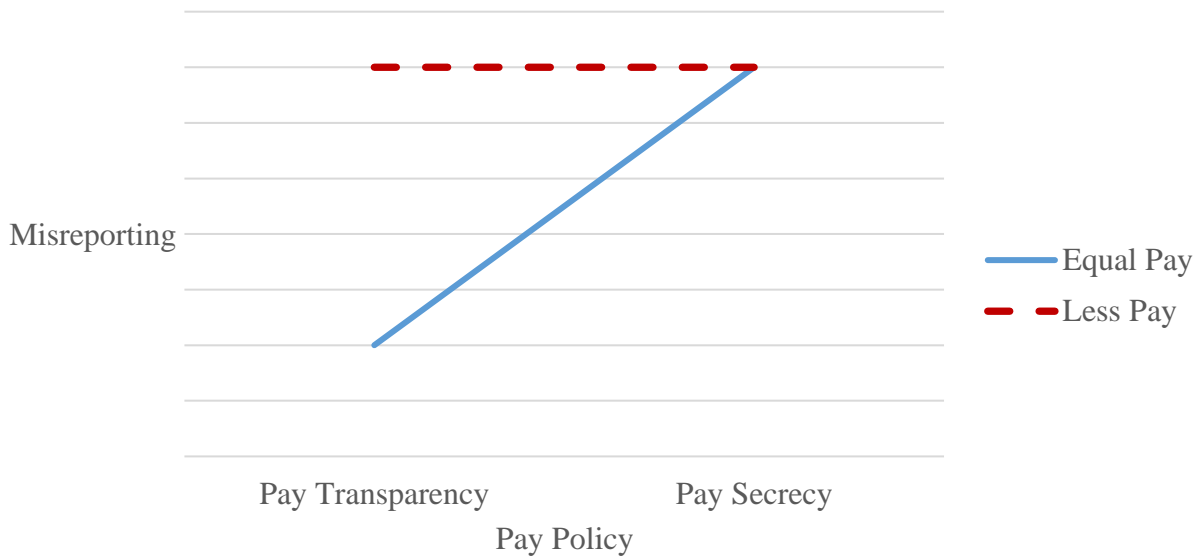
3.3 The Effect of Information Leakage on Employee Misreporting

When management adopts a pay secrecy policy it is possible that pay information will later be leaked to employees. I investigate the consequences of such leakage on employees' misreporting. Organizational trust is defined as an employees' willingness to be vulnerable to actions taken by their employer. Greater trust is associated with positive employee behaviors, better individual performance, and better organizational performance (Mayer, Davis, and Schoorman 1995; Schoorman, Mayer, and Davis 2007; Perry and Mankin 2007). Management earns employees' trust by demonstrating trustworthiness. One important aspect of managements' trustworthiness is forthcomingness, or a willingness to share, as opposed to hide, information. Forthcomingness about negative information increases trust in the party disclosing the negative information (Cain, Loewenstein and Moore 2005; Perry and Mankin 2007). Mercer (2005) and

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Gooden (2013) find that more forthcoming disclosures of negative earnings news in public earnings reports increase investors' trust in future disclosures. In a field study, Mansour-Cole and Scott (1998) find that in the period following a large layoff, employees who first learned of a firm's planned downsizing through an informal channel (e.g., workplace gossip) rather than an official channel (e.g., directly from their manager) perceived a breach of trust and reported lower organizational commitment in the following year.

The research described above suggests that proactively revealing negative information increases perceived trustworthiness and that attempting to hide negative information before it is subsequently revealed reduces trust and has negative consequences. Because these effects occur only for *negative* information, I predict that leakage of pay information will result in lower employee trust in management and higher employee misreporting by only lower-paid employees. Specifically, as depicted in Figure 2, I predict that lower-paid employees will misreport more than equally paid employees, and that this difference in misreporting will be larger when pay information is leaked than when it is disclosed by the firm as part of a pay transparency policy. These predictions are stated formally in H3.

> **H3:** Lower-paid employees will misreport more than equally paid employees, and this difference in misreporting will be larger when pay information is leaked than when it is disclosed via a pay transparency policy.

Figure 2 Hypothesized Pattern of Results for H3
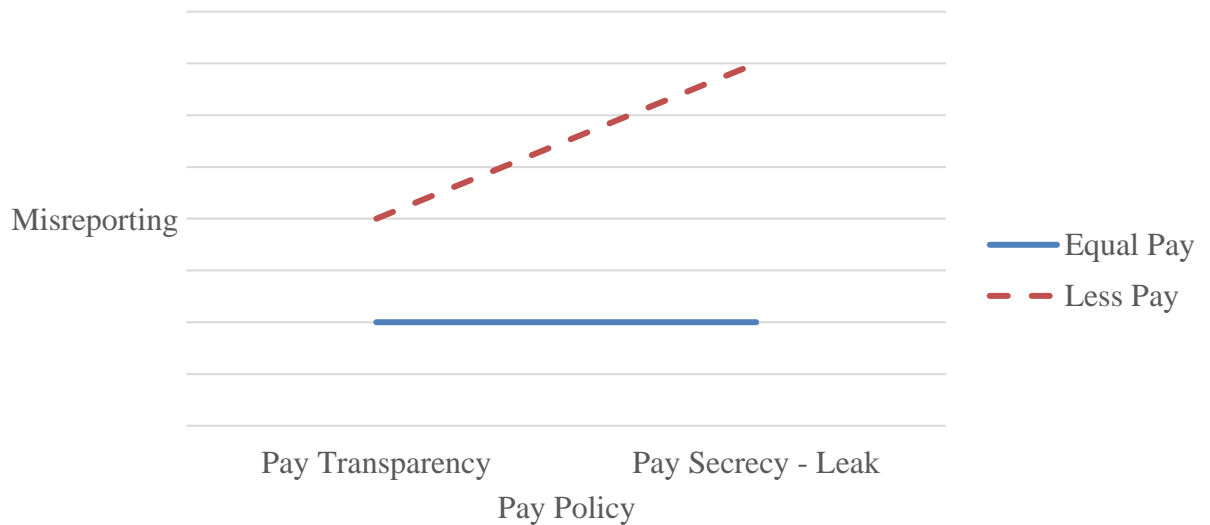
3.4 Research Focus on Lower-paid and Equally Paid Employees

H2 and H3 focus on lower-paid versus equally paid employees because the prior evidence of a negative reaction to disadvantageous pay inequity is robust (Kube, Maréchal, and Puppe 2013). I chose not to focus on higher-paid employees because the prior evidence regarding the reaction to advantageous inequity is decidedly mixed, with some studies finding a positive reaction (Falk and Fischbacher 2006; Fehr, Kirchsteiger, and Riedl 1993) while others find a weakly negative reaction (Fehr and Schmidt 1999; Gächter and Thöni 2010; Nosenzo 2013; Loewenstein, Thompson, and Bazerman 1989; Brown et al. 2020; Grasser, Newman, and Xiong 2020). The lack of clear predictions for higher-paid paid employees in the absence of my pay policy manipulations means that clear predictions regarding the effects of my manipulations for higher-paid employees are not possible. I designed my experiments to answer my research questions related to lower-paid and equally paid employees. As a result, the experiments are not designed and not able to examine

the behavior of higher-paid employees. However, as explained later when providing some supplementary analysis, I use the limited data for higher-paid employees obtained as a byproduct of my design to offer some related post hoc insights.

4.0 Method

4.1 Overview of Experiments 1 and 2

I test my hypotheses using two closely connected experiments.[1] The setting in both experiments is identical: a company owner (my operationalization of firm management) controls a firm that employs two project managers (my operationalization of employees). Each of the two project managers is independently responsible for a single project. The company owner allocates funding for the projects using a participative budgeting system in which the two project managers privately know the true cost of their own project and make a cost report for their own project to the company owner. The company owner funds each project by transferring the amount of the reported project cost to the project manager. The company owner receives the revenue from each of the two projects, which is a fixed identical amount for both projects. Thus, the company owner's payoff consists of the fixed revenue for the two projects minus the project costs transferred to each project manager and the fixed salary paid to each project manager. Project managers receive a fixed salary (details provided later) and the difference between the project cost they report to the owner and the project's actual cost (i.e., the amount of misreporting). Project managers were not aware of the actual or reported cost of the other project manager's project or the fixed revenue earned by the company owner.[2]

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[1] Both experiments were approved by the university's Institutional Review Board.

[2] Information about the other project manager's project and cost report was withheld to minimize noise introduced by consideration for peer reporting. Information about the company owner's revenue was withheld to limit pay comparisons to employees with similar jobs and avoid the possibility of vertical pay comparison between the project manager and company owner.

I first collected data for Experiment 1, in which participants assumed the role of the company owner. These company owner participants chose a pay communication policy (either pay secrecy or pay transparency) for the firm. The following day, I collected data for Experiment 2, in which participants assumed the role of a project manager and made a project cost report to a company owner from Experiment 1.

Each project manager participant in Experiment 2 was randomly matched with an actual company owner participant from Experiment 1 and with another project manager participant from Experiment 2 to create a triad of participants in a firm across the two experiments.[3] These triads faithfully operationalize the setting described to all participants in both experiments. That is, there is a company owner with two project managers who are paid a fixed salary, and the firm adopts the pay policy chosen by the company owner. In addition, the company owner's pay is affected by the level of misreporting chosen by the project managers.

Matching participants across Experiments 1 and 2 and making the payoffs of the company owners in Experiment 1 depend on the cost reports by project managers in Experiment 2 are critical features of my design for three reasons. First, this allows me to examine the pay policy choices of the company owners in Experiment 1 given their expectations regarding the responses of their project managers in Experiment 2. Second, this allows me to test whether the project managers in Experiment 2 interpret the pay policy choice of the company owner from Experiment 1 as a signal about pay equity. Third, this allows me to observe project managers' response to leaked pay

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[3] Participants in Experiment 2 were matched with participants in Experiment 1 on a many-to-one basis. That is, each company owner was matched with more than one pair of project managers and each pair of project managers were matched with only one company owner. Company owners were paid according to the cost reports made by one randomly selected pair of project managers.

information after the company owner attempted to hide this information by using a pay secrecy policy.

4.2 Experiment 1

4.2.1 Design

Experiment 1 is designed to test H1, which hypothesizes that managers choose pay secrecy more often when their employees' pay is unequal than when it is equal. Participants in Experiment 1 assume the role of a company owner and choose a pay policy for their company. The experiment uses a 1x2 between-participants design in which project managers' pay (*Project Manager Pay*) is manipulated to be either *Equal Pay* or *Unequal Pay*. In the *Equal Pay* condition, both project managers earn a 5,000 lira fixed salary. In the *Unequal Pay* condition, one project manager earns a 5,000 lira fixed salary and the other earns a 10,000 lira fixed salary. All monetary amounts in my experiments were described in a fictional experimental currency (lira) that was converted to USD at a rate of 5,000 lira = US$1 at the end of the experiment. An experimental currency was used to encourage participants to focus on relative comparisons, rather than on the magnitude of the financial stakes in the experiment.

The main dependent variable is the company owners' choice of either a *Pay Secrecy* policy or *Pay Transparency* policy. The wording for the pay secrecy policy is "At JB Enterprises, we do our best to pay employees fairly, but believe that salaries are a private matter that must be kept secret. Employees of JB Enterprises should not share, disclose, or otherwise discuss their salary with any other employees." The wording for the pay transparency policy is "At JB Enterprises, we

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do our best to pay employees fairly and believe that salaries do not need to be kept secret. In fact, we prepare a report of employee salaries and distribute this report directly to all employees."

4.2.2 Participants

One hundred fifty Amazon Mechanical Turk (MTurk) workers participated in Experiment 1. MTurk participants behave similarly to undergraduate or graduate students in lab settings while providing a subject pool that is more representative of the American labor force (Farrell, Grenier, and Leiby 2017; Paolacci, Chandler, Ipeirotis 2010; Buchheit, Doxey, Pollard, and Stinson 2018). Following guidance from Buchheit et al. (2018), participants were required to have completed at least 1,000 prior MTurk tasks, exceed a 95% task approval rating, be at least 18 years old, and reside in the United States. Of the 150 participants, 147 completed the study and 131 (89%) correctly answered the comprehension and manipulation check questions. Consistent with best practices for using MTurk workers in research (Paolacci et al 2010, Buchheit et al. 2018), participants failing the manipulation or comprehension checks were dropped from the sample and the remaining 131 participants are used in my analysis.[4]

4.2.3 Procedures

The procedures for Experiment 1 follow the timeline in Figure 3. In Step 1, participants were provided a general description of the scenario and learned that they were assuming the role

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[4] The manipulation check asked participants whether project managers received the same or different salaries. Comprehension checks asked participants how misreporting affected both their total payoff and project managers' total payoffs, and whether other real MTurk workers would be acting in the role of project managers.

of the owner of a company that employed two project managers. They also were informed how the firm's participative budgeting system worked, that the project managers held private information regarding the cost of their projects, and that the project manager's cost report (and any misreporting of the project cost) affected both their payoff and the project managers' payoffs. Importantly, the company owners were informed in Step 1 that their project managers were other real MTurk workers.

Figure 3 Procedural Timeline of Experiment 1

Step 1	Step 2	Step 3	Step 4
Explanation of setting and budgeting process[a]	Participants learn the pay of project managers[b]	Participants choose a pay communication policy for their firm	Participants complete the post-experiment questionnaire[c]
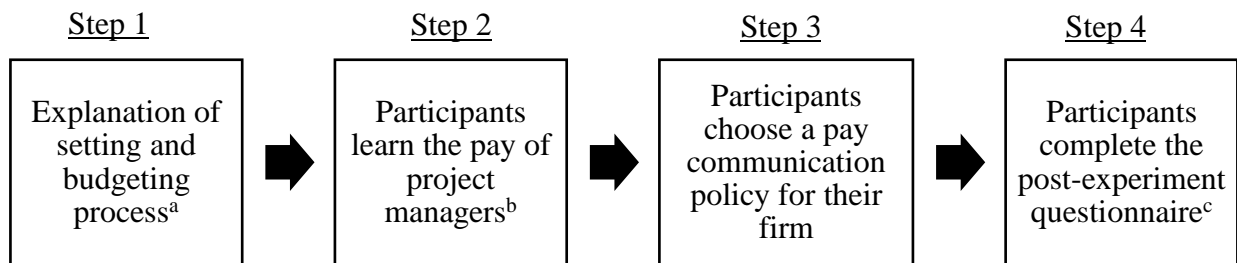
[a] In this step, participants learned about their role as company owner, their company's organizational structure, the budgeting process, and how the reported project cost affected both their pay and the project managers' pay. They were also informed that other MTurk workers would complete the study in the role of the project manager.
[b] The project managers' pay was manipulated such that both project managers earned 5,000 lira (*Equal Pay* condition), or one earned a 5,000 lira salary and the other earned a 10,000 lira salary (*Unequal Pay*).
[c] The post-experiment questionnaire contained items relating to the psychological mechanisms of interest, comprehension and manipulation checks, and demographics.

Each company owner in Experiment 1 received the fixed revenue from the firm's two projects (35,000 lira for each project) minus the salary paid to their two project managers and minus the reported project costs transferred to their two project managers. The company owners transferred each manager's reported project cost to the project manager rather than the actual cost

because the actual cost was each project manager's private information and unknown to the company owner.[5]

The manipulation of *Project Manager Pay* took place in Step 2. Company owners were informed either that both of their project managers earned 5,000 lira (*Equal Pay* condition) or that one earned 5,000 lira and the other earned 10,000 lira (*Unequal Pay* condition). In Step 3, participants chose either the pay secrecy policy or the pay transparency policy described above. This choice is the main dependent variable in Experiment 1. In Step 4, participants completed a post-experimental questionnaire (PEQ). The PEQ included manipulation and comprehension check questions, questions about what influenced participants' policy choice, and demographic data questions.

4.2.4 Tests of H1

H1 predicts that company owners will select a pay secrecy policy more often when their project managers' pay is unequal than when their pay is equal. Table 1, Panels A and B and Figure 4 report data for Experiment 1. As shown in Figure 4, 70 percent of the participants in the *Unequal Pay* condition chose the pay secrecy policy, while 52 percent of the participants in the *Equal Pay* chose the pay secrecy policy. Consistent with H1, a Pearson chi-squared test reported in Table 1, Panel C confirms that the proportion of owners choosing the pay secrecy policy is significantly higher (p=0.041) in the *Unequal Pay* condition (70%) than in the *Equal Pay* condition (52%).

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[5] An example of how payoffs were determined follows: A project generates 35,000 lira in revenue for the company owner. The actual cost of the project is 17,000 lira and known with certainty by the project manager but unknown to the company owner. The project manager is paid a salary of 5,000 lira and reports a project cost of 20,000 lira to the company owner, who transfers the reported cost to the project manager. In this case, the company owner's payoff for this project is 35,000 lira – 20,000 lira – 5,000 lira = 10,000 lira. The project manager's payoff is 5,000 lira + (20,000 lira – 17,000 lira) = 8,000 lira.

Further, the fact that, within the *Equal Pay* condition, about half of the company owners chose the

pay secrecy policy (52%) and half chose the pay transparency policy (48%) indicates that there

was no inherent preference for either policy over the other when pay was equal. This suggests that

the company owners likely were not aware that they might be signaling that pay was unequal when

choosing the pay secrecy policy because they likely would have avoided choosing the pay secrecy

policy when pay was equal if they were aware of this.

Table 1 Tests of H1

Panel A: *Project Manager Pay* Conditions

Project Manager Pay	N (131)	Project Manager A Salary	Project Manager B Salary
Equal Pay	65	5,000 lira	5,000 lira
Unequal Pay	66	5,000 lira	10,000 lira

Panel B: *Policy Choice* by *Project Manager Pay*

	Policy Choice	
Project Manager Pay	Pay Transparency	Pay Secrecy
Equal Pay	48%	52%
Unequal Pay	30%	70%

Panel C: *Policy Choice* by *Project Manager Pay*

	Pearson χ^2	df	p
Project Manager Pay	4.165	1	0.041

Figure 4 Company Owners' Policy Choice by Project Manager Pay Condition
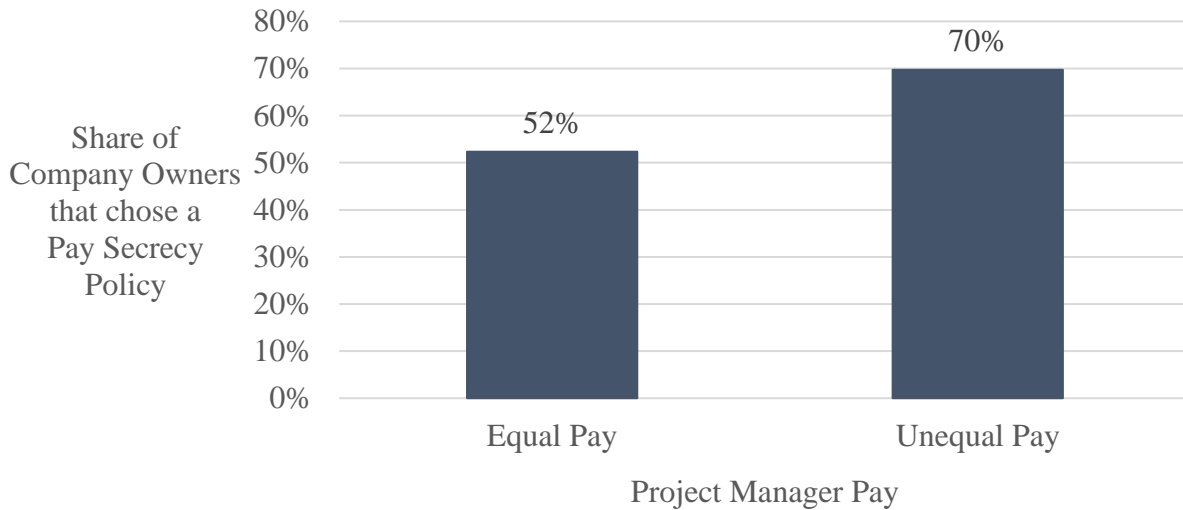
The reasoning underlying H1 is that, when choosing their pay policy, company owners anticipate how their project managers will perceive the fairness of their pay and consequently choose a pay policy that they expect will minimize misreporting and thereby maximize their wealth. I used PEQ responses to test this reasoning. Participants were asked if they thought about whether their project managers would feel their salary was fair (*CO Fair*). The exact wording of the PEQ item is as follows: "When choosing the 'Secret' or 'Transparent' policy, I thought about whether my project managers would feel their salary was fair." Participants responded on a seven-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (7), with a midpoint of 4. I tested the responses for a difference across the *Equal Pay* and *Unequal Pay* conditions. Consistent with the reasoning underlying H1, the analysis reported in Table 2, Panel A shows that owners were more concerned about whether their project managers perceived their pay as fair (p=0.010) in the *Unequal Pay* condition (5.38) than in the *Equal Pay* condition (4.69). I also tested whether the responses in the *Unequal Pay* and *Equal Pay* conditions differed from the scale midpoint of 4 (Table 2, Panel B) and find that mean responses in both conditions were significantly higher than the scale midpoint (p<0.001 for each condition). This indicates that company owners were

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considering how project managers would perceive the fairness of their pay when choosing a pay policy.

Table 2 Company Owner concern for Project Managers' perceived fairness of pay

Panel A: Test for equality of means of drivers of *Policy Choice* by *Project Manager Pay*[a] condition

	Equal Pay	Unequal Pay	Difference (Equal Pay – Unequal Pay)	t	df	p
CO Fair[b]	4.69	5.38	-0.69	-2.605	129	0.010

Panel B: Difference between scale midpoint and participant response to *CO Fair*

	Mean	Distance from scale midpoint (4)	t	df	p
CO Fair within *Equal Pay*	4.69	0.69	3.532	64	<0.001
CO Fair within *Unequal Pay*	5.38	1.38	7.815	65	<0.001

[a] *Project Manager Pay* is manipulated at one of two levels: *Equal Pay* (coded as 0) or *Unequal Pay* (coded as 1).

[b] Participants responded to PEQ items on a seven-point scale ranging from "Strongly disagree" (coded as 1) to "Strongly agree" (coded as 7). *CO Fair* is the participants' response to "When choosing the 'Secret' or 'Transparent' policy, I thought about whether my project managers would feel their salary was fair."

To summarize, consistent with H1, the results of Experiment 1 provide evidence that company owners consider how they expect employees to react to differences in pay when choosing their pay policy. Specifically, company owners preferred a pay secrecy policy over a pay transparency policy when pay was unequal but had no preference for one pay policy over the other when pay was equal.

4.3 Experiment 2

4.3.1 Design

Experiment 2 is designed to test H2 and H3. H2 addresses whether employees interpret a pay secrecy policy as a signal that pay is unequal. H3 addresses how employees react to leaked pay information.

Participants in Experiment 2 assumed the role of a project manager at a firm identical to the firm described in Experiment 1 and made a project cost report to their company owner from Experiment 1. The main dependent variable in Experiment 2 is *Misreporting,* which is defined as the difference between the cost reported by the project manager to the company owner and the actual project cost. [6]

Experiment 2 uses a 3x3 between-subjects design, in which *Pay Policy* and *Project Manager Pay* are manipulated. The company owner's *Pay Policy* choice was the dependent variable in Experiment 1, but this choice is now used as an independent variable in Experiment 2. The three levels of *Pay Policy* are *Pay Transparency*, *Pay Secrecy*, and *Pay Secrecy – Leak.* The *Pay Transparency* and *Pay Secrecy* conditions are the chosen pay policies of company owners in Experiment 1. The *Pay Secrecy – Leak* condition is identical to the *Pay Secrecy* condition, except that after the company owner chooses a pay secrecy policy, the salary report provided to the project managers in the *Pay Transparency* condition is inadvertently leaked to the project managers.

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[6] *Misreporting* ranged from zero lira to 7,000 lira. Participants were barred from reporting a cost below the actual project cost, which created the lower bound for misreporting of zero. Participants were informed of the company owner's estimated range of total project cost and were barred from reporting a project cost that exceeded the maximum of the company owner's estimated range. The upper bound of the estimated range was 7,000 lira above the actual project cost, upper bounding *Misreporting* at 7,000 lira.

The three levels of *Project Manager Pay* are *Equal Pay*, *Less Pay*, and *More Pay*. Consistent with the *Equal Pay* condition in Experiment 1, in the *Equal Pay* condition in Experiment 2 both project managers received a fixed salary of 5,000 lira per period. Likewise, consistent with the *Unequal Pay* condition in Experiment 1, in Experiment 2 one project manager received a fixed salary of 5,000 lira (*Less Pay*) and the other project manager received a fixed salary of 10,000 lira (*More Pay*). The *More Pay* condition is not relevant for testing H2 or H3, but rather is simply a by-product of my design. That is, H2 and H3 involve only the *Equal Pay* and *Less Pay* conditions. The *More Pay* condition exists only because, if some participants receive less pay (5,000 lira), by definition, some other employees need to receive more pay (10,000 lira).

An important design choice was to hold constant the fixed salary level for the *Less Pay* and *Equal Pay* conditions at 5,000 lira so that I could cleanly isolate the effect of lower pay versus equal pay on project managers' reporting behavior without the confound of different salaries. A consequence of this design choice is that the higher-paid employees (who received a 10,000 lira salary) cannot be directly compared to either the lower-paid or equally paid employees whose salary is 5,000 lira because such comparisons are confounded by the different salary levels. That is, their salary differs both in both relative terms (i.e., greater than instead of less than or equal to the other project manager) and in absolute terms (i.e., the numerical amount of their salary is different from participants in *Equal Pay* and *Less Pay* conditions). It is important to note that the only reason higher-paid employees were included in my experiments was to avoid deception in the scenario used for the lower-paid employee participants who, along with the equally paid employees, are the focus of my study. That is, any results for the higher-paid employees are merely a by-product of my design and are not relevant for testing of either H2 or H3. However, in later supplementary analysis I report some limited post hoc findings regarding these by-product data.

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4.3.2 Participants

Nine hundred MTurk workers were recruited for Experiment 2. These participants were recruited using the same requirements as for Experiment 1. After screening for comprehension and manipulation checks, I retain 702 participants (78%) for my analysis.[7] Participants averaged 37 years old and had an average of 16 years of work experience. Fifty percent were female.

4.3.3 Procedures

A timeline for Experiment 2 is provided in Figure 5. In Step 1, participants received details of the setting identical to those provided to company owner participants in Experiment 1, except that in Experiment 2 participants assumed the role of a project manager at the company. Participants also learned about the company's organizational structure, the budgeting process, and their salary as a project manager in Step 1. Participants were provided a detailed explanation of how their project cost reports affected their payoff as a project manager and the payoff of their company owner (more details provided previously in the overview of the experiments).

The *Pay Policy* manipulation took place in Step 2. Project managers were informed whether their company owner chose a pay transparency policy or a pay secrecy policy. The *Pay Policy* manipulation in Experiment 2 used the exact wording of the policies chosen by participants

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[7] In the first manipulation check, participants were asked if they were paid the same salary as the other project manager, a different salary, or whether that information was not provided. In the second manipulation check, participants were asked whether the company owner chose a pay secrecy policy or a pay transparency policy. In comprehension checks, participants were asked how misreporting affected their total payoff and the company owner's total payoff, and whether real MTurk workers would fill the role of the company owner and other project manager. Participants that passed all these checks were retained for analysis.

in Experiment 1. The wording for Step 2 in the *Pay Secrecy* and *Pay Secrecy – Leak* conditions was identical.
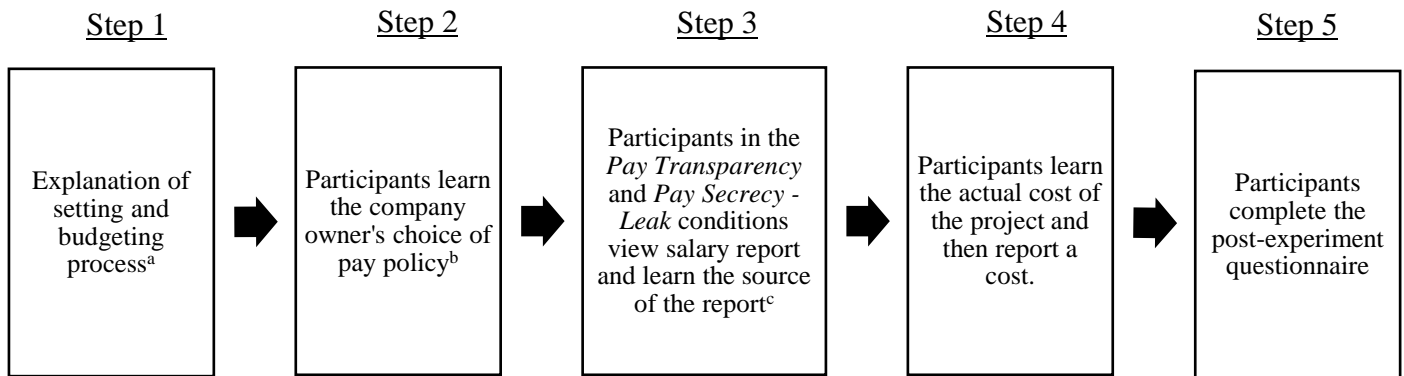
The manipulation of *Project Manager Pay* took place in Step 3. *Project Manager Pay* is manipulated in the same way it was described to company owners in Experiment 1. Each project manager received 5,000 lira in the *Equal Pay* condition, while one project manager received 5,000 lira and the other received 10,000 lira in the *Less Pay* and *More Pay* conditions, respectively. The pay information for project managers was disclosed in the salary report provided to participants in the *Pay Transparency* condition.[8] Participants in the *Pay Secrecy* condition did not receive this salary report. Participants in the *Pay Secrecy – Leak* condition did receive this salary report, but not as part of a company transparency policy. Instead, they were told they found a copy of the report on the company printer.

In Step 4, participants learned the actual project cost and the company owner's estimated range of the project's cost.[9] They then made their project cost report to the company owner. In Step 5, participants completed the PEQ and learned their payoff for participating in the study. The PEQ included comprehension and manipulation checks, along with questions about participants' perceived fairness of their salary, their trust in the company owner, and some demographic information.

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[8] The salary report did not contain information about the company owner's pay. By omitting information about the pay of the company owner, I avoid complications relating to comparisons with multiple referents and comparisons across jobs with different uncertainty of payoff.

[9] Participants in Experiment 1 saw the same estimate. The experimental materials made clear that this estimate was part of the setting and not generated by a participant. Thus, the range of possible costs could not be interpreted as a signal by participants.

Figure 5 Procedural Timeline of Experiment 2

Step 1		Step 2		Step 3		Step 4		Step 5
Explanation of setting and budgeting process[a]	→	Participants learn the company owner's choice of pay policy[b]	→	Participants in the *Pay Transparency* and *Pay Secrecy - Leak* conditions view salary report and learn the source of the report[c]	→	Participants learn the actual cost of the project and then report a cost.	→	Participants complete the post-experiment questionnaire

[a] The setting described to participants in Experiment 2 was identical to the setting described to participants in Experiment 1.

[b] The pay communication policy shown to participants was either a pay secrecy policy or a pay transparency policy identical to the corresponding policy selected by participants in Experiment 1.

[c] Participants in the *Pay Transparency* and *Pay Secrecy – Leak* conditions saw the same salary report. In the *Pay Transparency* condition, participants received the report as part of the firm's official policy. In the *Pay Secrecy – Leak* condition, participants were told they found the salary report on the company printer. Participants in the *Pay Secrecy* condition saw no salary report and proceeded directly from Step 2 to Step 4.

4.3.4 Tests of H2

4.3.4.1 Descriptive Results

H2 predicts that when management chooses a pay secrecy policy, both equally paid and lower-paid employees will misreport at the same high level as when lower-paid employees know they are paid less because management chose a pay transparency policy. Further, employees will misreport less only when they know they are paid equally because management chose a pay transparency policy. These predictions result in an interaction of the type depicted in Figure 1. Descriptive data for Experiment 2 (which tests H2 and H3) are reported in Table 3 and are consistent with H2. I find mean *Misreporting* is approximately equal between the *Pay Secrecy/Equal Pay*, *Pay Secrecy/Less Pay*, and *Pay Transparency/Less Pay* conditions (4,006 lira,

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3,734 lira, and 3,745 lira respectively). I also find that *Misreporting* appears to be lower in only the *Pay Transparency/Equal Pay* condition (2,922 lira).

Table 3 Experiment 2 Descriptive Results

		Project Manager Pay		
Pay Policy		*Equal Pay*	*Less Pay*	*More Pay*
Pay Secrecy	Misreporting (lira)	4,006	3,734	3,000
	Std Dev.	2,483	2,510	2,602
	n	80	81	82
Pay Transparency	Misreporting (lira)	2,922	3,745	2,865
	Std. Dev.	2,672	2,715	2,629
	n	77	73	83
Pay Secrecy – Leak	Misreporting (lira)	2,844	4,312	3,111
	Std. Dev.	2,532	2,740	2,559
	n	78	72	76

4.3.4.2 Analysis of Variance with planned contrast weights

Using a standard analysis of variance (ANOVA), I find a marginally significant interaction (Table 4, Panel A, p = .064). However, because the specific interaction pattern predicted by H2 and depicted in Figure 1 differs from the pattern tested in a standard ANOVA, I also test for this interaction using a planned contrast with contrast weights of +1 for the *Equal Pay/Pay Secrecy*, *Less Pay/Pay Secrecy* and *Less Pay/Pay Transparency* conditions, and -3 for the *Equal Pay/Pay Transparency* condition as recommended by Buckless and Ravenscroft (1990). I follow the approach recommended by Guggenmos, Piercey, and Agoglia (2018) for using planned contrasts by first visually assessing the results, then testing the significance of the planned contrast and related simple effects, and finally evaluating the contrast variance residual. This three-part approach reduces Type I errors while benefiting from the improved statistical power from using contrast analysis.

Table 4 Tests of H2 (Pay Secrecy vs. Pay Transparency; Equal Pay vs. Less Pay*)*

Panel A: Standard Analysis of Variance of *Misreporting*

Source of Variation	df	F	p
Pay Policy	1	3.322	0.069
Project Manager Pay	1	0.880	0.349
*Pay Policy * Project Manager Pay*	1	3.463	0.064
Error	307		

Panel B: Contrast and Residual Between-Cells Variance Test of *Misreporting*

Source of Variation	df	F	p
Model Contrast[a]	1	7.073	0.008
Residual Between-Cells Variance[b]	2	0.271	0.240
Error	307		
Contrast Variance Residual[c], $q^2 = 0.036$			

Panel C: Simple Effects of *Misreporting*

Effect of *Pay Policy*:

	df	t	p
with *Equal Pay*	155	2.635	0.005[*]
with *Less Pay*	152	-0.027	0.979

Effect of *Project Manager Pay*:

|	df	t	p
with *Pay Secrecy*	159	0.690	0.491
with *Pay Transparency*	148	-1.872	0.033[*]

[a] The following custom contrast weights were selected to test the pattern predicted in H2: -1 for [*Equal Pay/Pay Secrecy*], [*Less Pay/Pay Transparency*], and [*Less Pay/Pay Secrecy*]; and -3 for [*Equal Pay/Pay Transparency*].

[b] A non-significant result of this test indicates that I do not find evidence of an additional between-cells effect after controlling for the tested contrast (Guggenmos et al 2018; Buckless and Ravenscroft 1990).

[c] This provides a measure of how much of the between-cells variance is not explained by the contrast coding used in the model. A value of $q^2 = 0.036$ indicates that 3.6% of the systematic variance remains unexplained after controlling for the tested contrast (Guggenmos et al. 2018).

[*] One-tailed p-value consistent with directional prediction. Other p-values are reported as two-tailed values.

The actual pattern of cell means of *Misreporting* is shown in Figure 6 and closely resembles the predicted pattern depicted in Figure 1. Specifically, the *Pay Transparency/Equal Pay* condition appears to be lower than the other three conditions, which do not appear to differ much. The result of the planned contrast reported in Table 4, Panel B confirms that there is a significant interaction between *Project Manager Pay* and *Pay Policy* ($F_{(1, 307)}$=7.073; p=0.008). Finally, the residual between-cells variance is not statistically significant, which indicates that there is no evidence of a remaining unexplained between-cells effect ($F_{(2,307)}$=0.271; p=0.240). I also use Guggenmos et al.'s (2018) q^2 measure of contrast variance residual and find q^2=0.036, indicating that only 3.6% of the between-cells variance is *not* explained by the [+1, +1, -3, +1] contrast coding.[10]

Figure 6 Actual Pattern of Results for H2

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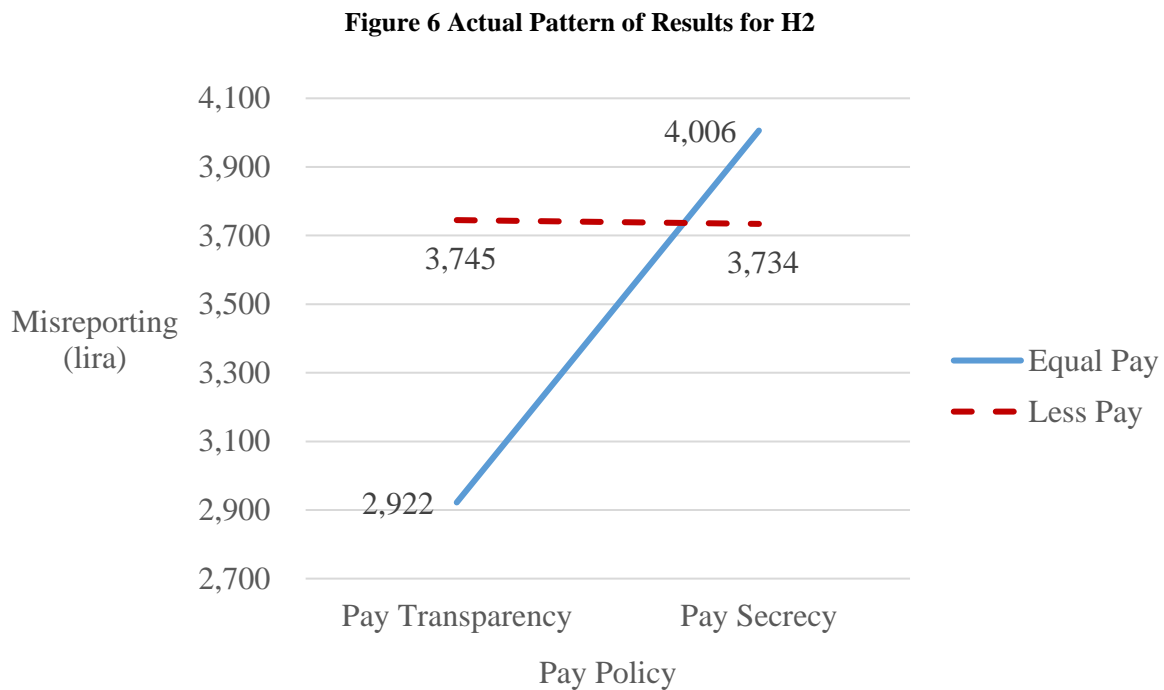
[10] This measure of contrast variance residual $q^2 = 1- r^2$, where r is the correlation between a matrix of cell means and a matrix of corresponding contrast weights.

Simple effects analyses are reported in Table 4, Panel C. Consistent with H2 and prior research (Guo et al. 2020), I find that when pay is transparent, project managers misreported significantly more (p=0.033) when they were paid less (3,745 lira) than when they were paid equally (2,922 lira). However, when the company owner chose a pay secrecy policy, I do not find a significant difference (p=0.491) in misreporting between project managers who are paid less (3,734 lira) and those who are paid equally (4,006 lira). Importantly, when considering only project managers who were paid less, there is no significant difference in misreporting (p=0.979) when the company owner chose a pay transparency policy (3,745 lira) and when the company owner chose a pay secrecy policy (3,734 lira). This lack of a difference in misreporting is consistent with lower-paid project managers assuming that they were paid less even when this information was hidden from them by the company's pay secrecy policy. Finally, when considering only project managers who were paid equally, misreporting was significantly higher (p=0.005) when the company owner chose a pay secrecy policy (4,006 lira) than when the company owner chose a pay transparency policy (2,922 lira). This higher level of misreporting by the equally paid project managers when the company owner chose a pay secrecy policy shows, just like the project managers who were paid less, the equally paid managers assumed they were paid less when the company owner chose a pay secrecy policy.

The overall pattern of results reported above shows that project managers who were paid less did not misreport less when the company owner chose a pay secrecy policy. That is, employees assumed they were paid less even when what information was withheld because of the company's secrecy policy. In addition to failing to realize the hoped-for benefit of less misreporting by the

lower-paid project managers, choosing the pay secrecy policy also resulted in significantly more misreporting by the equally paid employees than choosing the pay transparency policy. These findings suggest that a pay secrecy policy has a negative effect on firms. That is, there is no benefit in terms of preventing misreporting by hiding unequal pay information, but there is an unintended cost because employees who are actually paid equally assume they are not and misreport at the same level as if they received lower pay.

PEQ data provide additional support for the interpretation of the misreporting data described above. Participants were asked how much they agree with the following statement: "If the owner of JB Enterprises forces employees to keep their salaries secret, it is probably because employee salaries are not fair." They responded on a seven-point scale with endpoints of "Strongly disagree" (1) to "Strongly agree" (7) with a midpoint of 4. The mean response of 4.85 is significantly above the midpoint of 4 ($t = 8.866$; $df = 310$; $p<0.001$), indicating that, on average, the project managers believed that when the company owner chose a pay secrecy policy, it signaled that pay was unfair. Using data from only the *Pay Secrecy* condition, participants' responses to this question (*Signal*) significantly predict *Misreporting* ($F_{(6, 154)} = 4.467$, $p<0.001$).[11] This result is consistent with project managers misreporting more when the company owner chose a pay secrecy policy because they viewed the company owner's choice of a secrecy policy as a signal that pay was unfair.

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[11] This analysis was conducted using a one-way ANOVA with *Signal* as the independent variable and *Misreporting* and the dependent variable.

4.3.5 Tests of H3

As depicted in Figure 2, H3 predicts that project managers who are paid less will misreport more than project managers who are paid equally in both the *Pay Transparency* and *Pay Secrecy – Leak* conditions, but that this difference between those who are paid less and those who are paid equally will be larger in the *Pay Secrecy – Leak* condition than in the *Pay Transparency* condition. This specific predicted interaction differs from the standard disordinal interaction assumed in a basic ANOVA. Therefore, as for H2, I use a planned contrast analysis with custom contrast weights to test H3 and follow the three-part approach recommended by Guggenmos et al (2018).

4.3.5.1 Descriptive Results

Descriptive data for H3 are reported in Table 3, and Figure 7 depicts the pattern of those results. The pattern of my results for H3 appears quite similar to the predicted pattern in Figure 2. As expected, the project managers who are paid less misreport more than the project managers who are paid equally in corresponding *Pay Policy* conditions, but the difference is larger in the *Pay Secrecy – Leak* condition (4,313 – 2,844 = 1,468 lira difference) than in the *Pay Transparency* condition (3,745 – 2,922 = 843 lira difference). Further, for project managers who are paid equally, there appears to be little difference in misreporting between participants in the *Pay Transparency* condition (2,922 lira) and those in the *Pay Secrecy – Leak* condition (2,844 lira). In contrast, for project managers who are paid less, misreporting is higher in the *Pay Secrecy – Leak* condition (4,313 lira) than in the Pay *Transparency* condition (3,745 lira). This overall pattern of results is consistent with H3.

Figure 7 Actual Pattern of Results for H3
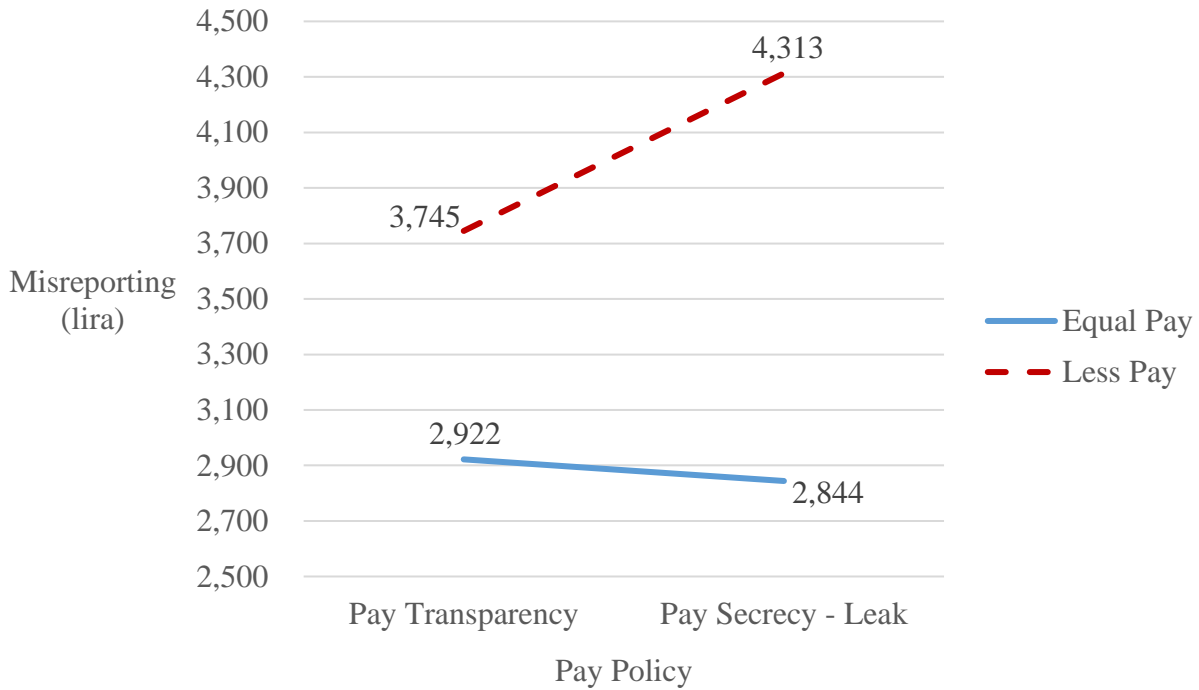
4.3.5.2 Analysis of Variance with planned contrast weights

Consistent with the predicted pattern of results and the underlying theory, I use contrast weights of [-2, -2, +1, +3] for *Equal Pay/Pay Transparency*, *Equal Pay/Pay Secrecy – Leak*, *Less Pay/Pay Transparency*, and *Less Pay/Pay Secrecy – Leak*, respectively, in my statistical analysis.[12] As shown in Table 5, Panel B, I find a statistically significant interaction of the form predicted by H3 ($F_{(1, 296)}$=15.446; p<0.001). In addition, the result of a semi-omnibus F-test of the between-cells residual variance is not statistically significant ($F_{(2, 296)} = 0.014$; p = 0.99), indicating there is no significant remaining unexplained between-cells effect. Further, analysis of the simple effects

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[12] Specifically, I predict that employees in the *Less Pay* condition will have higher *Misreporting* than employees in the *Equal Pay* condition. I predict that *Misreporting* among lower-paid employees will be higher in the *Pay Secrecy – Leak* condition than in the *Pay Transparency* condition, which is reflected in the larger weight applied to *Pay Secrecy – Leak*. Lastly, I predict that *Misreporting* will not differ by *Pay Policy* condition for equally paid employees, which is reflected by the equal weights applied to those cells.

(Table 5, Panel C) finds no significant effect of *Pay Policy* in the *Equal Pay* condition ($t=0.187$; $p=0.852$), but a marginally significant effect of *Pay Policy* in the *Less Pay* condition ($p=0.107$, one-tailed). Finally, $q^2=0.001$, indicating that less than 1% of the between-cells variance is *not* explained by the [-2, -2, +1, +3] contrast weights used in my analysis. Taken together, these results provide strong support for H3.

Table 5 (Pay Secrecy – Leak vs. Pay Transparency; Equal Pay vs. Less Pay)

Panel A: Analysis of Variance of *Misreporting*

Source of Variation	df	F	p
Pay Policy	1	0.630	0.428
Project Manager Pay	1	13.871	<0.001
Pay Policy * Project Manager Pay	1	1.097	0.296
Error	296		

Panel B: Contrast and Residual Between-Cells Variance Test of *Misreporting*

Source of Variation	df	F	p
Model Contrast	1	15.446	<0.001
Residual Between-Cells Variance	2	0.014	0.99
Error	296		

Contrast Variance Residual, $q^2 = 0.001$

Panel C: Simple Effects of *Misreporting*

Effect of *Pay Policy*:	df	t	p
within *Equal Pay*	153	0.187	0.852
within *Less Pay*	143	-1.251	0.107*

Effect of *Project Manager Pay*:			
within *Pay Secrecy – Leak*	148	-3.411	<0.001*
within *Pay Transparency*	148	-1.872	0.032*

* One-tailed p-value consistent with the directional prediction.

4.3.6 Additional Analysis of Misreporting

In my earlier tests of H2 and H3, I analyzed *Pay Secrecy* versus *Pay Transparency* and *Pay Secrecy – Leak* versus *Pay Transparency*, respectively. I now analyze *Pay Secrecy* versus *Pay Secrecy – Leak* because this analysis holds constant the *Pay Secrecy* policy choice and manipulates the available pay information. As expected and confirmed by the ANOVA and related simple effects reported in Table 6, Panels A and B, I find a significant interaction ($F_{(1, 307)}=.003$) between *Pay Policy* and *Project Manager Pay*. Within the *Equal Pay* condition, *Misreporting* is significantly higher (p=0.002) in the *Pay Secrecy* condition (4,006 lira) than in the *Pay Secrecy – Leak* condition (2,844 lira) because in the *Pay Secrecy* condition participants assume that pay is unequal, whereas in the *Pay Secrecy – Leak* condition participants can see that pay is actually equal. In contrast, within the *Less Pay* condition, *Misreporting* is marginally significantly higher (p=0.088) in the *Pay Secrecy – Leak* condition (4,312 lira) than in the *Pay Secrecy* condition (3,734 lira) because the leaked pay information confirmed employees' suspicion that their company owner was trying to hide the fact that they were paid less by choosing a pay secrecy policy. This latter result is consistent with an incremental increase in misreporting due to leakage of unequal pay information beyond the already negative reaction to the company owner's choice of a pay secrecy policy.

Table 6 Additional Analysis of Misreporting (Pay Secrecy vs. Pay Secrecy – Leak; Equal Pay vs. Less Pay)

Panel A: Analysis of Variance of M*isreporting*

Source of Variation	df	F	p
Pay Policy	1	1.007	0.316
Project Manager Pay	1	4.226	0.041
*Pay Policy * Project Manager Pay*	1	8.935	0.003
Error	307		

Panel B: Simple Effects of *Misreporting*

Effect of *Pay Policy*:	df	t	p
within *Equal Pay*	156	2.913	0.002[*]
within *Less Pay*	151	-1.361	0.088[*]

Effect of *Project Manager Pay*:			
within *Pay Secrecy*	159	0.690	0.491
within *Pay Secrecy – Leak*	148	-3.411	<0.001[*]

[*] One-tailed p-value consistent with the directional prediction.
Other p-values reflect a two-tailed test.

4.3.7 Tests of Trust as a mediator of the effect of Leakage on Misreporting

The development of H3 posits that the effect of pay information leakage on misreporting is mediated by trust in management and moderated by whether the project manager was paid less or equally. Project managers are expected to perceive a violation of trust when the leaked pay information confirms they are paid less, but not perceive a violation of trust when the leaked information later showed they are paid equally. That is, the effect of leakage on trust is conditional on the favorability of the leaked information. Accordingly, I predicted that the effect of leakage on trust would differ across the *Less Pay* and *Equal Pay* conditions. I test this prediction using the simultaneous regression-based approach developed by Hayes (2018). Specifically, I use a

moderated mediation model (Model 7 in the Hayes 2018 PROCESS macro) to test the indirect effect of *Pay Policy* on *Misreporting* through *Trust*, and whether this indirect effect is moderated by *Project Manager Pay*. I measured *Trust* using an adapted version of the inventory developed and validated in Robinson (1996). Participants rated their level of agreement with three statements in the PEQ on a seven-point scale with endpoints of "Strongly disagree" (1) and "Strongly agree" (7) and a midpoint of 4. The three statements are: "Employees at JB Enterprises should trust the company owner to treat them fairly," "I believe JB Enterprises is open and upfront with its employees," and "I'm not sure I fully trust the owner of JB Enterprises" (reverse coded).

The results of my moderated mediation analysis are reported in Table 7 and presented in Figure 8. I find that the interactive effect of *Pay Policy* and *Project Manager Pay* significantly predicts *Trust* ($p < 0.001$) and that *Trust*, in turn, is a significant predictor of *Misreporting* ($p < 0.001$). Further, *Trust* significantly mediates the effect of *Pay Policy* on *Misreporting* in both *Project Manager Pay* conditions (95% confidence intervals for *Equal Pay* [179.82, 766.16] and *Less Pay* [498.95, 1299.17]). Finally, I find that the strength of the mediating effect differs significantly between the *Project Manager Pay* conditions (index of moderated mediation 95% confidence interval: [122.38, 819.21]). Specifically, the indirect effect of *Pay Policy* on *Misreporting* through *Trust* is stronger in the *Less Pay* condition than in the *Equal Pay* condition. This result is consistent with the assumption in the theoretical development of H3 that leaked information that an employee is paid less causes a larger decrease in trust and corresponding increase in misreporting than leaked information that pay is equal.

Table 7 Experiment 2 Moderated Mediation Regression Analysis of Misreporting

(*Pay Secrecy – Leak* vs. *Pay Transparency*; *Equal Pay* vs. *Less Pay*)

Outcome Variable: *Trust*

	β	SE	t	p
Pay Policy	-2.22	0.55	-4.03	<0.001
Project Manager Pay	-0.42	1.26	-0.33	0.740
Pay Policy * Project Manager Pay	-2.23	0.79	-2.81	0.005

Outcome Variable: *Misreporting*

	β	SE	t	p
Pay Policy	-418.64	326.70	-1.28	0.201
Trust	-196.50	38.27	-5.13	<0.001

			Confidence Interval	
Indirect Effect of *Pay Policy* on *Misreporting* through *Trust* for each level of *Project Manager Pay*	β	SE	Lower	Upper
Equal Pay	437.46	151.04	179.82	766.16
Less Pay	876.06	204.04	498.95	1299.17

Index of moderated mediation	Index	SE	Lower	Upper
Project Manager Pay	438.60	177.04	122.38	819.21

I test a moderated mediation model (Model 7 of the PROCESS macro in Hayes, 2018) using *Pay Policy* as the independent variable, *Misreporting* as the dependent variable, *Trust* as the mediator of this relationship, and *Project Manager Pay* as a moderator of the indirect effect. All confidence intervals are calculated at the 95% level with 5,000 bootstrap samples. *Trust* measures the trust participants have in the company owner using a scale adapted from and validated in Robinson (1996). The factor is created using the sum of three PEQ items captured on a seven-point scale from "Strongly disagree" (coded as 1) to "Strongly Agree" (coded as 7). The PEQ items are as follows: "Employees at JB Enterprises should trust the company owner to treat them fairly," "I believe JB Enterprises is open and upfront with its employees," and "I'm not sure I fully trust the owner of JB Enterprises" (reverse coded). A principal component analysis, evaluation of a scree plot, and calculation of Cronbach's alpha (α = 0.800) indicate that these items load onto one factor.

Figure 8 Moderated Mediation Model of Misreporting

Project Manager Pay
(*Equal Pay vs. Less Pay*)

Trust

β= -2.23, p=0.005

β= -196.50, p<0.001

β= -2.22, p<0.001

Pay Policy
(*Pay Transparency vs. Pay Secrecy – Leak)*

β= -418.64, p=0.201

Misreporting
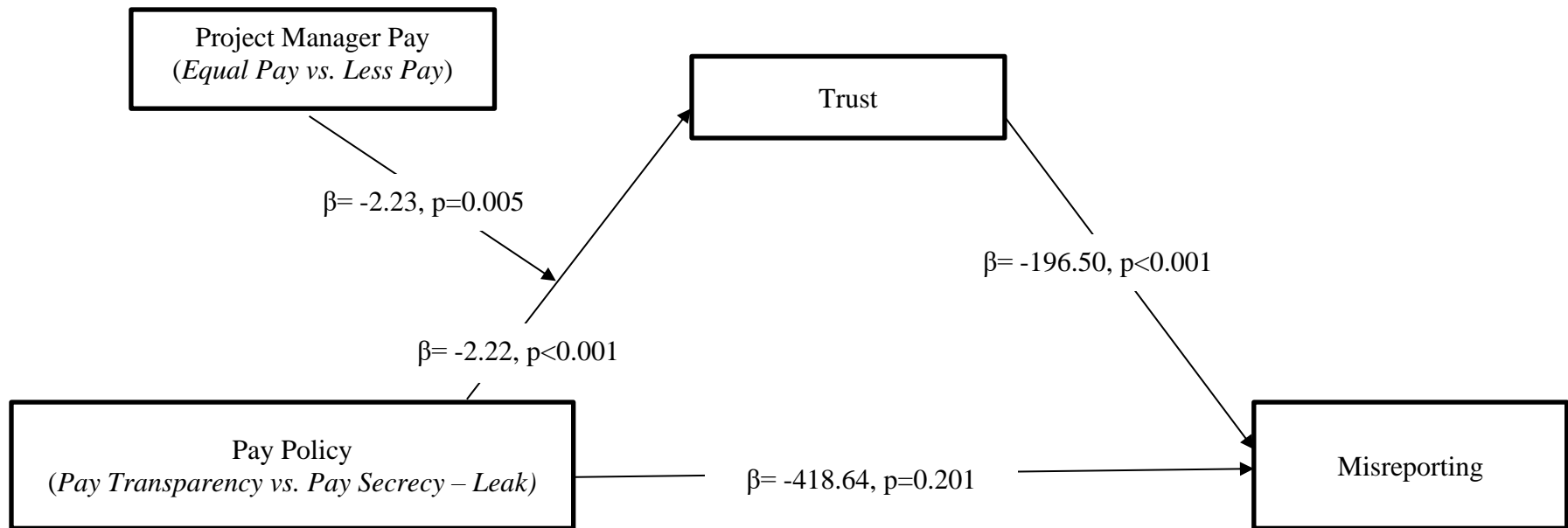
One related question is whether the perceived fairness of pay offers an alternative explanation for the results reported above for trust. To address this issue, I conduct the same analyses reported above using perceived pay fairness (*Fairness*) as the mediator rather than *Trust*. I measured *Fairness* using participants' PEQ responses to the following question on the same seven-point scale used for my *Trust* measures: "My salary for the work I do for JB Enterprises is fair." In untabulated results, I find that, in contrast to *Trust,* there is no interactive effect of *Pay Policy* and *Project Manager Pay* on *Fairness* ($p=0.634$). However, as might be expected, *Fairness* does significantly predict *Misreporting* ($p<0.001$). These results are consistent with leakage of information decreasing trust in the company owner, which, in turn, increases misreporting, but are inconsistent with the alternative explanation that the effect of leakage on misreporting operates through a decrease in perceived pay fairness.

4.3.8 Supplemental Analysis of Higher Paid Employees

As explained earlier, as a byproduct of my design, I have some limited data for higher-paid employees in the *More Pay* condition. However, as also explained earlier, these data are not relevant for the tests of my hypotheses. Further, the design choices needed to collect the data that allowed me to cleanly test my hypotheses meant that the project managers' salary in the *More Pay* condition could not be held constant with the project managers' salary in the *Less Pay* and *Equal Pay* conditions. As such, the data from the *More Pay* condition were never intended to be used as data in my analysis. Nevertheless, some supplementary analysis of the *More Pay* data offers some post hoc insight that helps expand the interpretation and implications of the previously reported results based on the data collected to test my hypotheses. Specifically, I test for differences in misreporting across the three pay policy levels (*Pay Secrecy*, *Pay Transparency*, and *Pay Secrecy*

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– *Leak*) within the *More Pay* condition only. There is no confound of different employee salaries in this analysis because salary is held constant at 10,000 lira within the *More Pay* condition. I find no significant difference in *Misreporting* across the three levels of *Pay Policy* ($F_{(2, 238)} = 0.180$; p = 0.835; see Table 8). Thus, I do not find evidence of an effect of choice of policy or leakage on misreporting by higher-paid employees. This result is consistent with prior research on pay fairness indicating that employees may not respond positively to advantageous inequity (Fehr and Schmidt 1999; Gächter and Thöni 2010; Nosenzo 2013; Loewenstein, Thompson, and Bazerman 1989; Grasser, Newman, and Xiong 2020).

Table 8 Misreporting by Project Managers receiving More Pay

Analysis of Variance of *Misreporting* across *Pay Policy*, within *More Pay*

Source of Variation	df	F	p
Pay Policy	2	0.180	0.835
Error	238		

I conduct an analysis of variance of *Misreporting* across all three levels of *Pay Policy* (i.e., *Pay Secrecy*, *Pay Transparency*, and *Pay Secrecy – Leak*), using results from only the *More Pay* level of *Project Manager Pay*.

5.0 Conclusion

Changing regulation, third-party sources of salary information, and an ongoing shift in workforce preferences make it increasingly difficult for firms to credibly maintain pay secrecy and suggests that firms may need to modify their pay communication policies accordingly. Thus, research on pay communication policies is timely and has considerable importance for practice. In this study, I provide evidence of the strategy used by management when choosing a pay communication policy, reactions to that strategy by employees, and the hidden cost of leakage of pay information in firms that adopt pay secrecy policies.

The results of my study provide evidence that firm management acts strategically, relying on pay secrecy to try to avoid employees' adverse reaction to inequitable pay. Moreover, I find that this strategy is ineffective. When employee pay is unequal, adopting a pay secrecy policy does not result in less employee misreporting than adopting a pay transparency policy. Worse yet, when employee pay is equal, adopting a pay secrecy policy results in more misreporting than adopting a pay transparency policy. Both results occur because employees interpret a pay secrecy policy as a signal that their pay is inequitable. Further, I provide evidence that leakage of pay information after a firm has adopted a pay secrecy policy results in an incremental increase in misreporting by lower-paid employees relative to firms that adopt a pay transparency policy.

I expect that the theory and results of this study are likely to generalize to other employee behaviors that are detrimental to firms, such as reduced effort, turnover, or decreased organizational citizenship. However, I examined the effect on misreporting because pay communication policies are especially relevant for misreporting given how pay policies and misreporting relate to information disclosure, truthfulness, and trust. In addition, by examining

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employee misreporting, I can cleanly separate employee behavior (measured by misreporting) from employee performance. Because employee performance often affects employee pay, measuring employee behavior with performance would introduce endogeneity between the independent and dependent constructs of interest.

My study is designed to focus on the of lower-paid and equally paid employees. Therefore, I cannot offer any definitive insights about how higher-paid workers would respond to company managers' choice of pay policy or to unequal pay. Nor can I offer any definitive insights about the net effect of behavior of both higher-paid and lower-paid employees. However, because prior research suggests that negative reactions to disadvantageous inequity are typically stronger than any potential positive reaction to advantageous inequity, it is likely that in many cases there is an overall net negative effect of adopting a pay secrecy policy. Future research could examine these question directly. The scope of my study is a setting of inequitable and unequal pay. Future research could examine the effects of other forms of inequity, such as equal pay despite differences in employee performance.

Bibliography

Akerlof, G. A., & Yellen, J. L. (1990). The fair wage-effort hypothesis and unemployment. *The Quarterly Journal of Economics*, *105*(2), 255-283.

Bamberger, P., & Belogolovsky, E. (2010). The impact of pay secrecy on individual task performance. *Personnel Psychology*, *63*(4), 965-996.

Belogolovsky, E., & Bamberger, P. A. (2014). Signaling in secret: Pay for performance and the incentive and sorting effects of pay secrecy. *Academy of Management Journal*, *57*(6), 1706-1733.

Bloom, M. (1999). The performance effects of pay dispersion on individuals and organizations. *Academy of Management Journal*, *42*(1), 25-40.

Brandts, J., & Holt, C. A. (1993). Adjustment patterns and equilibrium selection in experimental signaling games. *International Journal of Game Theory*, 22(3), 279-302.

Brickley, J., Smith, C., & Zimmerman, J. (2015). *Managerial economics and organizational architecture*. McGraw-Hill Education.

Brown, C., Evans J. H., Moser, D., & Presslee C.A. (2022). Performance-Measurement Induced Pay Dispersion and Its Effect on Employee Effort. *Journal of Management Accounting Research.*

Buchheit, S., Doxey, M. M., Pollard, T., & Stinson, S. R. (2018). A technical guide to using Amazon's Mechanical Turk in behavioral accounting research. *Behavioral Research in Accounting*, *30*(1), 111-122.

Buckless, F. A., & Ravenscroft, S. P. (1990). Contrast coding: A refinement of ANOVA in behavioral analysis. *The Accounting Review*, 933-945.

Cain, D. M., Loewenstein, G., & Moore, D. A. (2005). The dirt on coming clean: Perverse effects of disclosing conflicts of interest. *The Journal of Legal Studies*, *34*(1), 1-25.

Camerer, C. F. (2011). Behavioral game theory: Experiments in strategic interaction. Princeton University Press.

Cardinaels, E., & Yin, H. (2015). Think twice before going for incentives: Social norms and the principal's decision on compensation contracts. *Journal of Accounting Research*, *53*(5), 985-1015.

Christ, M. H. (2013). An experimental investigation of the interactions among intentions, reciprocity, and control. *Journal of Management Accounting Research*, *25*(1), 169-197.

Christ, M. H., Sedatole, K. L., & Towry, K. L. (2012). Sticks and carrots: The effect of contract frame on effort in incomplete contracts. *The Accounting Review*, *87*(6), 1913-1938.

Cooney, S. (2018). Should You Share Your Salary with Co-Workers? Here's What Experts Say. *Time Magazine.* Retrieved from https://time.com/5353848/salary-pay-transparency-work/#:~:text=Companies%20like%20Whole%20Foods%20and,salaries%20publicly%20on%20their%20website. Accessed November 23, 2020.

Downes, P. E., & Choi, D. (2014). Employee reactions to pay dispersion: A typology of existing research. *Human Resource Management Review*, *24*(1), 53-66.

Evans III, J. H., Hannan, R. L., Krishnan, R., & Moser, D. V. (2001). Honesty in managerial reporting. *The Accounting Review*, *76*(4), 537-559.

Falk, A., & Fischbacher, U. (2006). A theory of reciprocity. *Games and economic behavior*, 54(2), 293-315.

Farrell, A. M., Grenier, J. H., & Leiby, J. (2017). Scoundrels or stars? Theory and evidence on the quality of workers in online labor markets. *The Accounting Review*, *92*(1), 93-114.

Fehr, E., & Schmidt, K. M. (1999). A theory of fairness, competition, and cooperation. *The quarterly journal of economics*, *114*(3), 817-868.

Gächter, S., & Thöni, C. (2010). Social comparison and performance: Experimental evidence on the fair wage–effort hypothesis. *Journal of Economic Behavior & Organization*, 76(3), 531-543.

Garrett, J. B., Holderness Jr, D. K., & Olsen, K. J. (2020). An experimental investigation of how self-interested organizational norms undermine prosocial motivation and influence employee effort. *Journal of Information Systems*.

Goldstein, M., & McGrogan, M. (2022, December 2). Bracing for the effects of new wage transparency laws across the country. Reuters. https://www.reuters.com/legal/legalindustry/bracing-effects-new-wage-transparency-laws-across-country-2022-12-02/.

Gooden, E. (2013). Does Forthcomingness Matter? The Impact of Investment Horizon on Management's Long-Term Reporting Credibility. *The Impact of Investment Horizon on Management's Long-Term Reporting Credibility* (December 12, 2013).

Grasser, R., Newman A., & Xiong, G. (2020). Does Transparency Help or Hurt? Evidence on Employee Motivation. *Working Paper.*

Greiner, B., Ockenfels, A., & Werner, P. (2011). Wage transparency and performance: A real-effort experiment. *Economics Letters*, *111*(3), 236-238.

Guggenmos, R. D., Piercey, M. D., & Agoglia, C. P. (2018). Custom contrast testing: Current trends and a new approach. *The Accounting Review*, 93(5), 223-244.

Guo, L., Libby, T., Liu, X., & Tian, Y. (2020). Vertical Pay Dispersion, Peer Observability, and Misreporting in a Participative Budgeting Setting. *Contemporary Accounting Research*, 37(1), 575-602.

Hannan, R. L., Rankin, F. W., & Towry, K. L. (2006). The effect of information systems on honesty in managerial reporting: A behavioral perspective. *Contemporary Accounting Research*, 23(4), 885-918.

Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford publications.

Hegewisch, A., Williams, C., & Drago, R. (2017). Pay secrecy and wage discrimination. *Institute for Women's Policy Research*.

Hoorens, V. (1995). Self-favoring biases, self-presentation, and the self-other asymmetry in social comparison. *Journal of Personality*, 63(4), 793-817.

Kepes, S., Delery, J., & Gupta, N. (2009). Contingencies in the effects of pay range on organizational effectiveness. *Personnel Psychology*, 62(3), 497-531.

Kube, S., Maréchal, M. A., & Puppe, C. (2013). Do wage cuts damage work morale? Evidence from a natural field experiment. *Journal of the European Economic Association*, 11(4), 853-870.

Lawler, E. E. (1965). Managers' perceptions of their subordinates' pay and of their superiors' pay. *Personnel Psychology*.

Libby, T., & Lindsay, R. M. (2010). Beyond budgeting or budgeting reconsidered? A survey of North-American budgeting practice. *Management Accounting Research*, 21(1), 56-75.

Loewenstein, G. F., Thompson, L., & Bazerman, M. H. (1989). Social utility and decision making in interpersonal contexts. *Journal of Personality and Social psychology*, 57(3), 426.

Mansour-Cole, D., & Scott, S. (1998). Hearing it through the grapevine: The influence of source of layoff information and leader–member-relations on survivors' justice perceptions. *Personnel Psychology*, 51(1), 25-54.

Marasi, S., & Bennett, R. J. (2016). Pay communication: Where do we go from here?. *Human Resource Management Review*, 26(1), 50-58.

Marasi, S., Wall, A., & Bennett, R. J. (2018). Pay openness movement: Is it merited? Does it influence more desirable employee outcomes than pay secrecy?. *Organization Management Journal*, 15(2), 58-77.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of management review*, 20(3), 709-734.

Mercer, M. (2005). The fleeting effects of disclosure forthcomingness on management's reporting credibility. *The Accounting Review*, *80*(2), 723-744.

Nosenzo, D. (2013). Pay secrecy and effort provision. *Economic Inquiry*, *51*(3), 1779-1794.

Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on amazon mechanical turk. *Judgment and Decision making*, *5*(5), 411-419.

Perez, T. (2017, December 11). Most people (still) have no idea whether they're paid fairly. PayScale. Retrieved from https://www.payscale.com/data/pay-perception.

Perry, R. W., & Mankin, L. D. (2007). Organizational trust, trust in the chief executive and work satisfaction. *Public Personnel Management*, 36(2), 165-179.

Robinson, S. L. (1996). Trust and breach of the psychological contract. *Administrative Science Quarterly*, 574-599.

Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). An integrative model of organizational trust: Past, present, and future. *Academy of Management Review*, 32(2).

Shields, J. F., & Shields, M. D. (1998). Antecedents of participative budgeting. *Accounting, organizations and society*, *23*(1), 49-76.

Smit, B. W., & Montag-Smit, T. (2019). The pay transparency dilemma: Development and validation of the Pay Information Exchange Preferences Scale. *Journal of Applied Psychology*, *104*(4), 537.

Stahl, D. O., & Wilson, P. W. (1995). On players′ models of other players: Theory and experimental evidence. *Games and Economic Behavior*, 10(1), 218-254.

Thompson, P., & Pronsky, J. (1975). Secrecy or disclosure in management compensation?. *Business Horizons*, *18*(3), 67-74.

Trevor, C. O., Reilly, G., & Gerhart, B. (2012). Reconsidering pay dispersion's effect on the performance of interdependent work: Reconciling sorting and pay inequality. *Academy of Management Journal*, *55*(3), 585-610.