Do as I say, not as I do? Supervisory behavioral integrity, shared financial interests, and subordinate honesty in budget reporting

Zhen Zhang
Georgia State University

Follow this and additional works at: https://scholarworks.gsu.edu/accountancy_diss

Recommended Citation
Zhang, Zhen, "Do as I say, not as I do? Supervisory behavioral integrity, shared financial interests, and subordinate honesty in budget reporting." Dissertation, Georgia State University, 2015.
doi: https://doi.org/10.57709/7909926

This Dissertation is brought to you for free and open access by the School of Accountancy at ScholarWorks @ Georgia State University. It has been accepted for inclusion in Accountancy Dissertations by an authorized administrator of ScholarWorks @ Georgia State University. For more information, please contact scholarworks@gsu.edu.
Do as I say, not as I do? Supervisory behavioral integrity, shared financial interests, and subordinate honesty in budget reporting

BY

ZHEN ZHANG

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree Of

Doctor of Philosophy

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY
ROBINSON COLLEGE OF BUSINESS
2015
PERMISSION TO BORROW

In presenting this dissertation as a partial fulfillment of the requirements for an advanced degree from Georgia State University, I agree that the Library of the University shall make it available for inspection and circulation in accordance with its regulations governing materials of this type. I agree that permission to quote from, to copy from, or publish this dissertation may be granted by the author or, in his/her absence, the professor under whose direction it was written or, in his absence, by the Dean of the Robinson College of Business. Such quoting, copying, or publishing must be solely for the scholarly purposes and does not involve potential financial gain. It is understood that any copying from or publication of this dissertation which involves potential gain will not be allowed without written permission of the author.

Zhen Zhang
NOTICE TO BORROWERS

All dissertations deposited in the Georgia State University Library must be used only in accordance with the stipulations prescribed by the author in the preceding statement.

The author of this dissertation is:

Zhen Zhang
School of Accountancy
J. Mack Robinson College of Business
Georgia State University
35 Broad Street NW Atlanta, GA 30303

The directors of this dissertation are:

Associate Professor Douglas E. Stevens and Associate Professor Ivo D. Tafkov
School of Accountancy
J. Mack Robinson College of Business
Georgia State University
35 Broad Street NW Atlanta, GA 30303
ACCEPTANCE

This dissertation was prepared under the direction of the Zhen Zhang’s Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

Richard Phillips, Dean

DISSEPTION COMMITTEE

Dr. Ivo D. Tafkov (Co-Chair)
Dr. Douglas E. Stevens (Co-Chair)
Dr. R. Lynn Hannan
Dr. Hailan Zhou
ACKNOWLEDGEMENT

I am grateful for the guidance and support of my dissertation committee: Douglas Stevens (co-chair), Ivo Tafkov (co-chair), Lynn Hannan and Flora Zhou. I gratefully acknowledge the financial support provided by the Institute of Management Accountants Research Foundation.
Table of Contents

ABSTRACT .................................................................................................................................................. viii

I. Introduction ........................................................................................................................................... 1

II. Literature Review and Hypothesis Development ........................................................................... 9

   2.1 Background ................................................................................................................................... 9

   2.2 Supervisory Behavioral integrity ................................................................................................. 10

   2.3 The presence of shared financial interests ................................................................................... 12

      2.3.1 The presence of shared financial interests and psychological distance ......................... 13

      2.3.2 The psychological distance and vicarious learning .......................................................... 13

   2.4 Supervisory behavioral integrity versus Supervisory behavioral honesty .................................. 15

III. Method ............................................................................................................................................... 17

   3.1 Experimental setting ..................................................................................................................... 17

      3.1.1 Supervisory behavioral integrity ......................................................................................... 19

      3.1.2 The presence of shared financial interests ......................................................................... 19

      3.1.3 Supervisory behavioral honesty .......................................................................................... 20

   3.2 Procedures .................................................................................................................................... 21

   3.3 Dependent Measures ..................................................................................................................... 24

IV. Results ............................................................................................................................................... 24

   4.1 Hypothesis test ............................................................................................................................... 25

      4.1.1 Test of H1 ............................................................................................................................... 25

      4.1.2 Test of H2 ............................................................................................................................... 26

      4.1.3 Test of H3 ............................................................................................................................... 28

   4.2 Supplemental analysis ..................................................................................................................... 29

      4.2.1 Moderated mediation model for H2 ...................................................................................... 29

      4.2.2 Path analysis for H3 .............................................................................................................. 32

      4.2.3 Analysis on the negative effect of supervisory behavioral honesty on subordinate honesty 33

V. Discussion and conclusion .................................................................................................................. 37

References ............................................................................................................................................... 41

Appendix A – Post-experimental questionnaire .................................................................................. 47

Figures ...................................................................................................................................................... 49

   Figure 1: Timeline of experimental tasks ........................................................................................ 49

   Figure 2: Hypothesized causal model for H2 ................................................................................. 50

   Figure 3: H1 and H2 – Structural equation-based factual analysis ............................................... 51
Figure 4: H2 – Repeated measures ANOVA results ................................................................. 52
Figure 5: Test of H3 ........................................................................................................ 53
Figure 6: Moderated Mediation Analysis for H2 ............................................................... 54
Figure 7: Path analysis for H3 ...................................................................................... 56
Figure 8: Supplemental analysis – vicarious moral licensing effect ............................... 58
Tables ................................................................................................................................ 60
Table 1: Descriptive Statistics ....................................................................................... 60
Table 2: ANOVA results: H1 and H2 ............................................................................. 62
Table 3: ANOVA results: H3 .......................................................................................... 63
Table 4: Psychological distance ..................................................................................... 64
Table 5: Moderated mediation for H2 – Total effects, direct effects and indirect effects 65
Table 6: Test on the size of the pie effect ....................................................................... 66
ABSTRACT

Do as I say, not as I do? Supervisory behavioral integrity, shared financial interests, and subordinate honesty in budget reporting

BY

ZHEN ZHANG

November 30, 2015

Committee Chairs: Dr. Douglas E. Stevens (Co-Chair)
Dr. Ivo D. Tafkov (Co-Chair)

Major Academic Unit: Accounting

Participative budgeting plays an important role for information communication among hierarchies in organizations. In this study, I use a lab experiment to examine three research questions and investigate the role of supervisors in influencing subordinate honesty. First, I predict and find support that supervisory behavioral integrity, i.e. the alignment between a superior’s communication of a value of honesty and the superior’s behavioral honesty, is an effective informal control mechanism to influence employee honesty. However, the effectiveness of supervisory behavioral integrity in influencing employee honesty depends on the presence of shared financial interests between the superior and the subordinates, such that high supervisory behavioral integrity may promote employee honesty only in the presence of shared financial interests. In the absence of shared financial interests, supervisory behavioral integrity is no longer effective in influencing employee honesty. Finally, I investigate whether supervisory behavioral integrity, compared to supervisory behavioral honesty, has incremental effect on subordinate honesty. The results suggest that, compared to supervisory behavioral honesty, supervisory behavioral integrity has a stronger influence on subordinate honesty. Furthermore, high supervisory behavioral honesty is shown to have a demotion effect on subordinate honesty, i.e. subordinate honesty is lower when superior’s honesty is high than when it is low. Supplemental analysis provides potential explanations for the demotion effect. The implications of the findings for management accounting research and practice are discussed.
I. Introduction

Participative budgeting plays an important role in organizations for information communication among hierarchies. Typically, lower-level managers and employees have private information regarding their local environments, such as their resource usage and productive capabilities (Covaleski et al. 2003). In the process of participative budgeting, upper managers obtain such information from the subordinates and use the information to make decisions related to planning, resource allocation, performance evaluation and compensation (Evans et al. 2001; Church et al. 2012). However, since the budget may determine resource allocations or performance targets, the subordinates may behave opportunistically and strategically misrepresent their private information to serve their own interests.

To regulate employee behavior, management accounting researchers have traditionally focused on the use of formal controls. They have explored effective budgetary control mechanisms such as contract designs (Evans et al. 2001, Chow et al. 1988, Chow et al. 1991), budget auditing and monitoring (Webb 2002), information asymmetry controls (Fisher et al. 2002; Stevens 2002; Hannan et al. 2006), etc. However, formal control mechanisms are often costly for the firms (Baker et al. 1988). They sometimes increase employee stress and dissatisfaction (Kramer 1999) and reduce their trust in the employer and their willingness to cooperate (McAllister 1995; Malhotra and Murnighan 2002). Recently, a growing body of management accounting literature examines the role of informal control mechanisms in affecting employee behavior (Kachelmeier et al. 1994; Rankin et al. 2008; Zhang 2008; Matuszewski 2010; Krishnan et al. 2012; Church et al. 2012; Newman 2014). Informal controls direct employee behavior through implicit factors such as social norms or values (Cardinal et al. 2004; Sitkin et al. 2010). In an organization, employees usually view their supervisors as bearers of the
organization’s values (Arnett and Fritz 2003), and supervisors may become the social models to influence employees’ behavioral (Wimbush 1999; Simons 2002). In this study, I examine three research questions to investigate how supervisors may influence subordinate honesty in budget reporting in an organization.

First, I investigate whether a supervisor’s behavioral integrity may promote subordinate honesty in budget reporting. Supervisory behavioral integrity refers to the alignment between espoused values, i.e. the values expressed by a superior’s words\(^1\), and enacted values expressed by the superior’s deeds in an organization (Simons 2002; Palanski and Yammarino 2009; Tang and Liu 2012 etc.). Managers are usually responsible to communicate the ethical norms of the organization to their employees (Wimbush 1999; Dewane 2007); in the meanwhile, their behavior and decisions may not always comply with these ethical norms. The findings from a survey study show that more than 20% of American workers view their senior managers as failing to act in alignment with their words (Bates 2002). Simons’ (2002) concept of behavioral integrity itself does not necessitate the espoused values to be ethical. However, because it is common for managers to espouse ethical and socially accepted values, it lacks practical implications to study unethical espoused values (Fritz et al. 2013; Prottas 2013). Accordingly, in this study, I investigate only the situation where the superior communicates an ethical value to the subordinates. Specifically, I investigate supervisory behavioral integrity as the alignment between a supervisor’s communication of an honesty value and the supervisor’s behavioral honesty. That is, I rely on Bicchieri’s (2006) model of social norm activation to argue that supervisory behavioral integrity provides the environmental cues for subordinates to observe and vicariously learn about the honesty norms in the organization, and influences the degree to which

---

\(^1\) Simons (2002) gives examples of espoused values in an organization, such as mission statements, corporate value statements, descriptions of individual values, priorities, etc.
the subordinates follow such norms. Thus, I predict that the subordinates will be more honest in budget reporting when supervisory behavioral integrity is high than when it is low. The first research question establishes the main effect of supervisory behavioral integrity on subordinate honesty, which serves as the “baseline” to study the other two research questions.

Second, I investigate whether the effect in the first research question may depend on the organizational environments. Specifically, I investigate whether and how the presence of shared financial interests between the superior and the subordinates moderates the effect of supervisory behavioral integrity on subordinate honesty in budget reporting. The construct of shared financial interests refers to the situation where the subordinates are financially impacted by the superior’s behavior. Formal control mechanisms across organizations may determine whether the subordinates share financial interests resulting from the superior’s behavior. For example, under a group-based pay plan\(^2\), a superior’s behavior may impact the outcome of the group, and accordingly, impact the benefits that each employee in the group receives. I argue that the presence of shared financial interests between the subordinates and the superior influence the psychological distance the subordinates feel from the superior, such that the subordinates feel psychologically closer to the superior when they are financially impacted by the superior’s behavior than when they are not impacted. As an individual feels psychologically closer to another person, he or she is more likely to carry over attributes inferred from the other person, and thus to behave in the same way as the other person. Therefore, the effect of supervisory

\(^2\) Organizations are increasingly implementing group-based pay plans, such as profit sharing, gain sharing, and team-based rewards (Cooke 1994; Zenger and Marshall 2000; Hollensbe and Guthrie 2000; Church et al. 2012), and such groups may spread among hierarchies in an organization (Zenger and Marshall 2000). Under group-based pay plans, compensation of each individual employee depends on the profits or other measures of performance of a group of employees (Cooke 1994; Hollensbe and Guthrie 2000).
behavioral integrity on subordinate honesty is predicted to be greater in the presence of shared financial interests than in the absence of shared financial interests.

Third, I investigate how supervisory behavioral integrity differentiates from supervisory behavioral honesty in the effectiveness of promoting subordinate honesty. As stated earlier, in this study, supervisory behavioral integrity refers to whether the supervisor’s behavioral honesty aligns with the value communicated by the superior. Because the superior always communicates an ethical value to the subordinates, it is necessary to investigate whether it is the alignment of the superior’s behavioral honesty with the communicated ethical value or it is the superior’s behavioral honesty itself that impacts subordinate honesty. Drawing on organizational behavioral literature, I argue that, compared to supervisory behavioral honesty, supervisory behavioral integrity has a greater impact on subordinate honesty because it increases the subordinates’ perceptions of the superior’s credibility and trustworthiness (Colquitt et al. 2007, Simons et al. 2007; Palanski and Yammarino 2009; Leroy et al. 2012).

To test my predictions, I use a lab experiment. In the experiment, participants act as a division manager (i.e. the superior) or a department manager in the division (i.e. the subordinate). The superior is responsible for communicating to the subordinate that the company values honesty. The superior also performs a self-reporting task, in which the superior is rewarded based on the reported performance. The subordinates are informed whether the superior reports exactly or reports higher than the actual performance. Then, each subordinate performs a capital budgeting task in which the subordinate makes a budget report to request funding to finance the department’s production costs. The subordinate’s honesty in the budget report is the dependent variable in the study. The timeline of experimental tasks is presented in Figure 1.
To examine the effect of supervisory behavioral integrity on subordinate honesty, I measure supervisory behavioral integrity (low versus high) as whether the superior’s honesty in self-reporting aligns with the communicated value of honesty. I also measure the subordinates’ perception of supervisory behavioral integrity in the post-experimental questionnaire. The results show that both supervisory behavioral integrity and the subordinates’ perceptions of supervisory behavioral integrity positively impact subordinate honesty.

To investigate whether the presence of shared financial interests moderates the effect of supervisory behavioral integrity on subordinate honesty, I manipulate the presence of shared financial interests (no versus yes) by whether the subordinate gets a monetary reward based on the superior’s self-reported performance. Consistent with my prediction, supervisory behavioral integrity has a greater impact on subordinate honesty in the presence of shared financial interests than in the absence of shared financial interests. Specifically, the results suggest that supervisory behavioral integrity impacts subordinate honesty in budget reporting only in the presence of shared financial interests, while it has no impact on subordinate honesty in the absence of shared financial interests. Further, a path analysis provides evidence that psychological distance fully mediates the effect of shared financial interests and interacts with supervisory behavioral integrity to influence subordinate honesty.

Finally, to distinguish between the effects of supervisory behavioral integrity and supervisory behavioral honesty on subordinate honesty, I manipulate whether the subordinates receive the superior’s communication of the honesty value (no vs. yes) before they perform the
capital budgeting tasks. In the No Communication condition, the only factor to influence subordinate honesty in budget reporting is supervisory behavioral honesty, i.e. the superior’s honesty in the self-reporting task. In the Communication condition, it is the alignment between supervisory behavioral honesty and the communicated value of honesty that influences the subordinates’ budgeting honesty. Consistent with my predictions, the results suggest a significant interaction between supervisory behavioral integrity and supervisory behavioral honesty on subordinate honesty, suggesting that supervisory behavioral integrity has a greater impact on subordinate honesty than supervisory behavioral honesty. I further conduct a path analysis to examine the underlying mechanisms for the interaction. The results show that, compared to supervisory behavioral honesty, supervisory behavioral integrity has a greater impact on subordinates’ perceptions of the superior’s credibility and trustworthiness, which, in turn, influence the subordinates’ honesty in budget reporting. Moreover, the results report that supervisory behavioral honesty has a negative simple effect on subordinate honesty, i.e., in the absence of communication of an honesty value, subordinate honesty is lower when the superior is honest in self-reporting than when the superior is dishonest. Supplemental analysis suggests that vicarious moral licensing might explain the negative effect. That is, because the presence of shared financial interests reduces psychological distance between the superior and the subordinates, the subordinates may take moral credentials from the superior and are more willing to express immoral attitudes (Goldstein and Cialdini 2007; Kouchaki 2011) and report dishonestly in the capital budgeting task.

---

3 When examining the effects of supervisory behavioral integrity and supervisory behavioral honesty on subordinate honesty, the study controls for the presence of shared financial interests, such that the subordinates are always financially impacted by the superior’s self-reporting.
The findings of this study have several implications for managerial accounting research and practice. First, superiors in organizations should not “talk the walk” unless they can “walk the talk”. This study shows that low supervisory behavioral integrity has a greater negative impact on subordinate honesty than low supervisory behavioral honesty. In other words, when the superior is unethical, the presence of an ethical espoused value may turn out to have a negative influence on subordinate behavior. Thus, companies need to caution against high level management attempting to communicate ethical values, such as a corporate value or a mission statement, to the employees without exhibiting behavior consistent with the values.

Second, the study identifies the organizational setting where superiors in organizations should not “walk the talk” without “talking the walk”. Specifically, the study shows that, in the organizational setting where the subordinates may feel psychologically close to the superior, superior’s honesty may turn out to have a negative impact on subordinate honesty. The negative impact occurs only in the absence of an espoused value. In other words, in the organizational setting where the subordinates may feel psychologically close to the superior, superior’s ethical behavior may generate unwanted impacts on subordinate behavior if it is not accompanied by an ethical espoused value. This study proposes and examines one such organizational setting where the subordinates may feel psychologically close to the superior, i.e. the presence of shared financial interests. The implication of the findings may extend to other organizational settings that also influence the psychological distance. For example, subordinates tend to feel more psychologically close with the superior when the physical distance between them reduces and/or their interaction frequency increases (Yagil 1998). Power and hierarchical distance are also shown to influence the psychological distance between the superior and the subordinates (Antonakis and Atwater 2002). In a recent study, Choi et al. (2015) provide evidence that
observing others’ positive or negative outcomes in an organization impacts one’s psychological distance with those others. The findings of this study suggests that, in these organizational settings, superior’s ethical behavior may provide the potential moral buffer for the subordinates to self-justify their own immoral behavior, and thus exacerbate subordinate misbehavior. The study also provides insights into how companies may use a “low-cost” control mechanism to mitigate the demotion effect of superior’s ethical behavior on subordinate behavior. Specifically, the demotion effect of superior’s ethical behavior on subordinate behavior may be turned into a promotion effect if the superior also communicates the ethical espoused value to the subordinates.

Further, this study proposes and examines a causal model to explain the interaction between the presence of shared financial interests and supervisory behavioral integrity on subordinate honesty. The interaction effect suggests that organizations may need to take their informal control environment into consideration when designing formal controls. For example, the presence of shared financial interests, such as group-based pay plans, may amplify the effect of supervisory behavioral integrity on employee honesty, thus management needs to fully understand their employees’ perceptions regarding supervisory behavioral integrity, using techniques such as surveys, before implementing such group-based pay plans. Also, the interaction effect identifies the organizational environment in which supervisory behavioral integrity is effective to promote subordinate honesty, i.e. the presence of shared financial interests, and therefore, only in this environment should companies invest in control systems, such as auditing, that may induce high supervisory behavior integrity in this environment.

Finally, this study uses a design that holds a measured independent variable constant across conditions. The design is beneficial for not only for studies that use a measured
independent variable, but also for studies that use a randomly generated environmental factor, such as a risk factor or an effort-performance ratio, across conditions.

The remainder of the paper is organized into four sections. Section II presents the theoretical framework and hypotheses. Section III describes the method. Section IV presents the results from the experiment. Section V concludes the paper.

II. Literature Review and Hypothesis Development

2.1 Background

Several management accounting studies have examined how informal control mechanisms may impact honesty in budget reporting (Kachelmeier et al. 1994; Rankin et al. 2008; Zhang 2008; Matuszewski 2010). In general, informal control mechanisms may influence the ethical behavior of employees either by guiding employees’ implicit understandings of consequences of their behavior or through social influences (Sitkin et al. 2010). In the context of budget reporting, Krishnan et al. (2012) show that subordinates are more honest when the superior fulfills their psychological contracts whereby subordinates expect their superiors to fulfill the promise of participation. Kachelmeier et al. (1994) report that organizational “cheap talk” communication about the degree to which a potential project would be supported reduces employees’ intent to propose an unfavorable project. Other studies focus on the effect of social influence on employees’ budgeting behavior. In this type of informal control system, ethical behavior is induced by the environmental cues antecedent to it (Manz and Sims 1981). In the context of budgeting, studies have provided some examples of such environmental cues in organizations that induce honesty, such as requiring the budgets in the form of a factual assertion to imply a desire for honesty (Rankin et al. 2008), communicating non-contractual targets to the budget proposer (Newman 2014), and sharing budgetary slack with those with high preferences
for honesty (Church et al. 2012). Superior leadership ethics, such as the fairness in setting subordinate wages (Zhang 2008) and the introduction of horizontal equity of salary (Matuszewski 2010), are also shown to be effective control mechanisms to induce honesty in budget reporting.

2.2 Supervisory Behavioral integrity

In this study, I investigate the role of supervisory behavioral integrity to influence subordinate honesty. Supervisory behavioral integrity, i.e. the extent to which managers “talk the walk” and “walk the talk”, is essential in an organization (Simons 2002). It may serve as a social influence mechanism to impact employee behavior. Studies in organizational behavior provide evidence that high supervisory behavioral integrity leads to more organizational citizenship behavior and less deviant behavior (Dineen et al 2006) and results in higher employees’ trust in supervisors (Simons et al. 2007). Supervisory behavioral integrity also positively affects employees’ commitment to the organization (Fritz et al. 2013) and negatively affects their unethical behavior intention (Tang and Liu 2012). Prottas (2013) use data from the 2008 National Study of the Changing Workforce survey and find that supervisory behavioral integrity is positively related to job satisfaction, job engagement, health, and life satisfaction and negatively related to stress, turnover likelihood, and work-to-family conflict.

To develop the prediction on how supervisory behavioral integrity may influence subordinate honesty in budget reporting, I use Bicchieri’s (2006) model of social norm activation. Bicchieri’s model provides an operational definition of a social norm (Davidson and Stevens 2013) and predicts how and when environmental cues activate a social norm that may influence an individual’s behavior (Douthit and Stevens 2015). A social norm is a behavioral rule for an individual to choose in a mixed-motive situation. Bicchieri’s model suggests that an
individual would follow a social norm when environmental cues make the norm salient to the individual and fulfill both empirical and normative expectations to give the individual sufficient reasons to follow the norm (Bicchieri 2006; Bicchieri and Xiao 2009; Davidson and Stevens 2013; Douthit and Stevens 2015). The empirical expectation refers to what they believe others typically do, and the normative expectation concerns what they believe others think they ought to do. In an organization, supervisory behavioral integrity may serve as the environmental cue to activate the norm of honesty in employees.

First, I expect that supervisory behavioral integrity will make the norm of honesty salient to the subordinates. Superiors are usually viewed as standard bearers of the organization’s mission and values (Arnett and Fritz 2003). Dineen et al. (2006, p. 624) state that “supervisors’ actual conduct, in terms of how closely their actions are consistent with their stated principles … makes norms regarding appropriate workplace behaviors salient. That is, employees look for cues to reduce uncertainty and enhance predictability in their environments.” High supervisory behavioral integrity, i.e. the superior’s behavioral adherence to the communicated value of honesty, sends a clear signal to the subordinates that the value is followed and well honored in the organization. Low supervisory behavioral integrity, on the other hand, provides conflicting cues for the subordinates to understand how the company truly values the norm of honesty.

Further, superior behavioral integrity also increases the congruence between subordinates’ empirical expectations and normative expectations to follow the behavioral rules. The superior’s communication of the espoused values, i.e. words, motivates the subordinate’s normative expectations of what others think the subordinate ought to do. When the superior’s behavior follows the espoused value, the subordinate’s empirical expectation is satisfied at the same time. Thus, when the superior’s deeds align with the words, the subordinates’ expectation
regarding what people will do is in line with their expectation regarding what people think they ought to do. “In this case, normative and empirical expectations work in the same direction and motivate the same behavior” (Bicchieri and Xiao 2009). In contrast, when superior’s deeds are inconsistent with their words, the values communicated by words are violated, and thus the subordinate would experience an inconsistency between normative and empirical expectations.

Overall, the discussion above leads to the following hypothesis:

H1: Subordinates will be more honest in budgetary reports when the superiors’ behavioral integrity is high than when it is low.

2.3 The presence of shared financial interests

In this subsection, I develop a causal model to predict how the effect of supervisory behavioral integrity on subordinate honesty is influenced by the presence of shared financial interests between the superior and the subordinates. The model is displayed in Figure 2. Specifically, I argue that the presence of shared financial interests decreases the subordinates’ psychological distance from the superior, and the reduced psychological distance, in turn, makes the subordinates more likely to behave consistent with the superior’s behavior. Overall, I predict that the positive effect of supervisory behavioral integrity becomes stronger in the presence of shared financial interest.

[Insert Figure 2 here]

4 Other theory and models would also provide the same prediction. For example, moral disengagement theory (Bandura 1990, 1999) suggests that once their internalized controls has developed, individuals would regulate their actions by their self-regulatory mechanisms. Actions that violate their moral standards would bring them psychological costs, such as self-condemnation, and thus they tend to refrain from those actions. However, individuals can deactivate and disengage the moral standards through approaches such as moral justifications. In this study, it is easier for the subordinates to morally justify dishonest behavior when supervisory behavioral integrity is low and more difficult to do so when supervisory behavioral integrity is high. So, moral disengagement theory also predicts that subordinate budgeting honesty is higher when supervisory behavioral integrity is high.
2.3.1 The presence of shared financial interests and psychological distance

The model first predicts that the presence of shared financial interests reduces the subordinates’ psychological distance from the superior. Psychological distance refers to the degree to which people perceive that they are related to other people, places, events, or points in time (Liberman et al. 2007b; Trope and Liberman 2010; Choi et al. 2015)\(^5\). People tend to feel psychologically close to others when they share common attributes, such as group memberships (Tajfel 1982), similar names (Miller et al. 1998; Jones et al. 2002), or the same birthday (Jones et al. 2004; Gunia et al 2009). People also feel psychologically close to others when they believe they share the same attitudes, values, or tastes (Brown et al. 1992), or when they have an interdependent mindset with those others (Gunia et al. 2009; Gino and Galinsky 2012). In this study, I argue that, in the presence of shared financial interest, the financial tie is the common attribute shared by the superior and the subordinates. The financial tie instills a stronger connection that the subordinates may perceive towards the superior, and increases the subordinates’ personal relevance with the superior’s behavior. Therefore, the presence of shared financial interest becomes the motivational force that induces the attachment-oriented feelings of the subordinates towards the superior. As a result, the subordinates feel psychologically closer to the superior in the presence of shared financial interests.

2.3.2 The psychological distance and vicarious learning

The reduced psychological distance in turn influences the subordinates’ vicarious learning from the superior (Goldstein and Cialdini 2007; Gunia et al. 2009; Gino and Galinsky

---

\(^5\) Depending on the reference points, the psychological distance has four dimensions: temporal, spatial, social, and hypothetical. In this study, the social dimension is most relevant, i.e. one’s perceived relation between the self and another person or people. I use the terms psychological distance and psychological closeness, instead of social distance and social closeness, throughout the texts. The social psychology literature defines psychological closeness as an individual’s “feelings of attachment and perceived connection toward another person or people” (Gino and Galinsky 2012, p. 16). Napier and Ferris (1993) defines psychological closeness in an organization as “psychological effects of actual and perceived…differences between the supervisor and subordinate” (pp. 328-329).
Social psychological studies suggest that when an individual observes an actor’s behavior and infers the actor’s internal attributes accordingly, he or she would go through self-perception changes to incorporate the inferred internal attributes. However, the self-perception changes occur only if the observer feels psychologically close to the actor. Self-perception changes, in turn, lead the observer to behave consistently with the actor’s behavior.

Experimental social psychology studies have examined the relationship between psychological distance and vicarious learning. Gunia et al. (2009) show that participants are more likely to escalate their commitment to others’ decisions, even in the face of direct financial costs to themselves, when they feel psychologically close to those others. Gino and Galinsky (2012) examine the effect in the context of prosocial behaviors and provide evidence that psychological closeness produces both vicarious generosity and vicarious selfishness. Specifically, when the participants observe an actor’s selfish behavior, they tend to evaluate the behavior to be less shame-worthy and unethical when the psychological closeness to the actor is high than when it is low. As a result, the participants are more likely to behave selfishly themselves. In contrast, the participants are more likely to behave generously when the psychologically close others behaved generously. In cases of both generosity and selfishness, vicarious learning is significantly affected by the manipulated psychological distance.

The subordinates may infer the superior’s internal attributes to be honest (dishonest) when supervisory behavioral integrity is high (low). Because the presence of shared financial interests reduces the psychological distance between the subordinates and the superior, the subordinates are more likely to incorporate the inferred internal attributes into themselves, and therefore more likely to behave consistent with the superior’s behavior. Overall, I predict that,
when supervisory behavioral integrity is high (low), the subordinates would be more (less) honest in budget reporting in the presence of shared financial interests than in the absence of shared financial interests. Formally stated, the hypothesis is:

**H2: The positive effect of supervisory behavioral integrity on subordinate honesty in budget reporting is greater when the subordinates share financial interests in the superior’s behavior than when they do not share financial interests.**

The prediction in H2 may be subject to a counter-argument. In the presence of shared financial interests, the superior’s honesty in self-reporting reduces both the superior’s financial benefits and the subordinates’ financial benefits. The lower financial benefits may motivate the subordinates to report more dishonestly in budget reporting in order to gain a higher payoff. I refer this effect as the “size of the pie” effect. In the absence of shared financial interests, the subordinates share no financial interests in the superior’s behavior and thus are not subject to the “size of the pie” effect. Overall, when supervisory behavioral integrity is high, the “size of the pie” effect may lead the subordinates to be less honest in the presence of shared financial interests while it has no impact on the subordinate in the absence of shared financial interests.

**2.4 Supervisory behavioral integrity versus Supervisory behavioral honesty**

As stated earlier, because it lacks practical implications to study the setting where the superior communicates an unethical value to the subordinates (Fritz et al. 2013; Prottas 2013), this study investigates only the situation where the espoused value is ethical, i.e. the superior always communicates a value of honesty to the subordinates. Thus, a question arises as whether the existence of the ethical espoused value plays a role in influencing the subordinates’ behavior. In other words, whether supervisory behavioral integrity, i.e. the alignment of supervisory
behavioral honesty to the communicated value of honesty, has an incremental impact on subordinate behavior compared to *supervisory behavioral honesty* alone.

The existence of an ethical espoused value improves information clarity in an organization (Fritz et al. 2013). Supervisory behavioral integrity, by definition, send two signals to the subordinates. The superior’s communication of a value of honesty sends a message to the subordinates on the organizational expectations regarding the subordinates’ behavior. The supervisory behavioral honesty provides the cues whether the expectations are followed by the standard bearers of the organization. High supervisory behavioral honesty clearly signals the subordinates that the communicated behavioral rule is expected to be followed. Low supervisory behavioral honesty, on the other hand, delivers the message that the communicated behavioral rule is not highly valued in the organization. In the absence of the communicated value of honesty, the subordinates may infer the internal attributes of the superior from the observed supervisory behavioral honesty. However, it is uncertain the extent to which the subordinates view the supervisory behavioral honesty as the behavioral rules and expectations of the organization.

Further, the supervisor’s adherence to the clearly communicated ethical values indicates that he or she truly and sincerely values the communicated values (Simons 2002), which may impact the subordinates’ perceptions of the supervisor’s credibility and trustworthiness (Colquitt et al. 2007, Simons et al. 2007; Palanski and Yammarino 2009; Leroy et al. 2012). When the superior fails to value his or her own words, the subordinates may perceive the superior’s credibility and trustworthiness to be low. Empirical evidence suggests that when subordinates perceptions of the supervisor’s credibility and trustworthiness are high, they tend to perform better and display greater organizational commitments (Dirks and Ferrin 2002). In the absence of
the communicated value, the superior’s behavioral honesty has no association with whether the superior values or breaks his or her own words, and therefore, the impact of supervisory behavioral honesty on subordinates’ perceptions of superior’s credibility and trustworthiness is weaker. Overall, I predict that high supervisory behavioral integrity has a strong promoting effect on subordinate honesty than high supervisory behavioral honesty, and low supervisory behavioral integrity a stronger demotion effect on subordinate honesty than low supervisory behavioral honesty.

**H3: Controlling for the presence of shared financial interests between the superior and the subordinates, supervisory behavioral integrity has a greater effect on subordinate honesty than supervisory behavioral honesty.**

### III. Method

#### 3.1 Experimental setting

Participants in the experiment assume the role of either a division manager or a department manager in the division. Each division consists of one division manager (the superior, thereafter) and three department managers (the subordinates, thereafter). Each superior is randomly grouped with three subordinates⁶. The superior in all conditions is responsible for communicating to the subordinates that the company values honesty. The superior also performs a self-reporting task. Specifically, the superior first performs a decoding task and receives

---

⁶ In the experiment, the subordinates are not informed of the number of subordinates in each group. Each subordinate only reads that he or she is a department manager in a division and is randomly grouped with a division manager. This design eliminates the potential concerns that the subordinates may have, such as the fairness concerns or potential social comparisons among the subordinates. Also, each subordinate makes decisions independently in the experiment. That is, each subordinate’s decisions are not contingent on or influenced by the decisions of any other subordinates. Each subordinate has no information of any decisions made by any other subordinates. The payoffs of each subordinate are not influenced by the decisions made by any other subordinates as well. Therefore, although there are three subordinates in each group, the experimental task is not a group task, and each subordinate performs the experimental task independently.
accurate performance feedback indicating how many problems the superior decode correctly. Then, the superior is asked to report to a hypothetical corporate headquarters the number of correctly decoded problems. The superior may report either his or her actual performance or a greater number. The corporate headquarters does not have an audit system to verify the superior’s actual performance, so it always provides monetary rewards to the superior based on the reported performance, i.e. each superior receives 100 lira for each problem in the reported performance.

Each subordinate performs and repeats a capital budgeting task for six rounds. The capital budgeting task is similar to the “trust contract” setting in Evans et al. (2001) and Church et al. (2012). In the capital budgeting task, the subordinates, i.e. the department managers, submit a budget report to the hypothetical corporate headquarters to request funds for the production cost of the departments. The subordinate’s private forecasting system reliably determines the actual production cost before the subordinate submits the budget. The corporate headquarters only knows the possible range of the production costs, and never learns the actual cost; so, it provides funds equal to the subordinate’ budget as long as the budget is within the possible range. The same range of production costs is maintained over the six rounds of the capital budgeting task, while the actual cost changes among the six rounds. The actual cost for each round is predetermined with a random draw within the range, and the same actual cost is provided to all subordinates in each round. The study uses pre-determined costs for all subordinates in order to control for the equality of economic payoffs available to the subordinates and to ensure comparability across all subordinates. At the end of the experiment,

---

7 The budget report is in the format of a factual assertion, i.e. after the subordinates learn the actual cost in each round, they submit a budget report that states “[T]he actual cost in my department is ______.” This format of budget report disentangles the subordinates’ honesty preferences from other preferences such as equity preferences in budget reporting (Rankin et al. 2008).
one round is randomly selected to determine the payment period. The subordinates keep any differences between the budget and the actual cost in the selected round. As discussed in Church et al. (2012), this setting “allows the researcher to investigate the effect of behavioral factors when participants have strong economic incentives to act opportunistically” (p. 158).

3.1.1 Supervisory behavioral integrity

To test the hypotheses, I use a 2×2+2 mixed factorial design. Specifically, the 2×2 design is to examine H1 and H2. The first independent variable, supervisory behavioral integrity (high versus low), is measured as whether the superior’s behavior is consistent with the communicated honesty norm. This measurement is according to Simons’ (2002) definition of behavioral integrity, i.e. whether the superior’s honesty in the self-reporting task aligns with the communicated value on honesty. Since the superior communicates to the subordinates that the company values honesty, supervisory behavioral integrity is considered high if the superior is honest in the self-reporting task and low if the superior is dishonest. In order to avoid superior’s actual performance influencing the subordinates’ behavior, the superior’s actual performance is not disclosed to the subordinates. Instead, the subordinates are informed only whether the superior reports exactly or reports higher than his or her actual performance.

3.1.2 The presence of shared financial interests

The other independent variable, the presence of shared financial interests (no vs. yes), is manipulated as whether the subordinates get monetary rewards based on the superior’s reported performance. In each experimental session, one third of the subordinates are randomly assigned into the Shared Interest (SI condition thereafter) and one third of them are assigned into the No
Shared Interest condition (NSI condition thereafter). The remaining one third of the subordinates are assigned into the Behavioral Honesty condition (BH condition thereafter), which will be discussed later. Each subordinate in the SI condition and in the BH condition gets 80 lira for each problem that the superior reported as decoded correctly. Each subordinate in the NSI condition gets no monetary rewards from the superior. To keep the economic incentives for the subordinate constant across conditions, I vary the lira-to-dollar conversion rates for the subordinates across the two conditions so that the average payoffs in dollars are equal.

3.1.3 Supervisory behavioral honesty

In addition to the four cells from the 2×2 design discussed above, I also include two cells to test the effect of supervisory behavioral honesty on subordinate honesty, i.e. to examine H3. In these two cells, the subordinates receive no communication from the superior that the company values honesty before the capital budgeting task. Therefore, the only factor to impact the subordinate honesty in budget reporting is the supervisory behavioral honesty, i.e. whether the superior reports honestly in the self-reporting task.

In the experiment, I use the design that assigns the three subordinates in each division into the three experimental conditions, i.e. among the three subordinates, one subordinate is in the SI condition, one subordinate is in the NSI condition, and one subordinate is in the BH condition. This design ensures that the sample sizes across the three conditions are equal. Further, this design holds constant any environmental factors across conditions. The three subordinates across the three experimental conditions are interacting with the same superior, and therefore, the honesty level of the superior holds constant across conditions.
3.2 Procedures

The computerized experiment is programmed with z-tree (Fischbacher 2007). The participants interact anonymously in the same room during the experiment. Participants are assigned to computer terminals upon arrival. Once all participants are seated, the general instructions of the study are distributed and read aloud. The instructions inform them that they will be acting either as a division manager or a department manager in the division. When reading the general instructions, I explicitly explain to them that the division manager is the superior and the department manager is the subordinate in the study. The instructions also described that the double-blind payment system keeps their decisions private from other participants and the researcher. After the general instructions, the computerized experiments begin, which consists of three parts: (1) role assignment and introduction of tasks, (2) task performance, and (3) post-experimental questionnaire and payment. A detailed description of the procedures is provided below.

(1) Role assignment and introduction of tasks

At the beginning of the computerized experiment, participants are first randomly assigned into the roles of superiors and subordinates. The subordinates are further randomly assigned into the SI, NSI and BH conditions. After learning their roles, participants get information about their tasks in the experiment. The superiors read details of the decoding task, and that their reporting behavior in the self-reporting task will be disclosed to the subordinates. The subordinates learn that they have two tasks in the study. In the first task, they play a passive role and receive the report whether the superior reports exactly or reports higher than the actual performance. The second task is a capital budgeting task, and the task details are introduced to them.
The participants also learn how their compensation will be affected by their own decisions and the decisions of other participants. The superiors have a salary of 1,200 lira, and they will also get 100 lira from the corporate headquarters for each problem that they report as decoded correctly. Each subordinate has a salary of 1,000 lira. Further, each subordinate in the SI or BH conditions gets 80 lira from the corporate headquarters for each problem that the superior reports as decoded correctly. The subordinates in the NSI condition gets no monetary payoffs from the superior’s decoding task. In the budgeting task, the subordinates in all conditions keep the differences between the budget and the actual cost in the randomly selected round. Before continuing to their tasks, all participants have to correctly answer all questions in a comprehension test to ensure their understanding of the tasks and the payoff calculations.

(2) Task performance

After all participants pass the quiz, they proceed to the tasks. The division managers perform a decoding task for exactly three minutes. The decoding task consists of 10 problems in which they decode a series of numbers into letters. At the end of the 3 minutes, they are privately informed how many problems they decode correctly. Then, they have two tasks. One task is to communicate to the subordinates that the company values honesty. They read that “[A]s the division manager, it is your responsibility to communication to the department managers that the company values honesty”, and each superior is asked to send a message that “our company values honesty” to the subordinates in the division. The other task is to report to the corporate headquarters how many questions they decode correctly. There are two options for them to

---

8 The subjects in the study only learn how their own payoffs are determined. They do not know the payoff schemes for any other subjects.

9 The information provided to the superior would make the superior perceive that the message is sent to all subordinates in the division. To be consistent with this perception, subordinates in all experimental conditions receive the message. However, I vary the timing that the subordinates receive the message. The subordinates in the SI and NSI conditions receive the message before the capital budgeting task. The subordinates in the BH condition receive the message after they complete the capital budgeting task and the post-experimental questionnaire.
report, either to report at the actual performance or to report at the maximum number possible, i.e. 10. The superiors are aware that all subordinates in the division will receive a report whether the superior reports exactly or reports higher than the actual performance.

When the superior completes the decoding task, the subordinates receive a report whether the superior reports exactly or reports higher than the actual performance. Before getting the report, the subordinates in the SI and NSI conditions first receive a message from the superior stating that the company values honesty, while the subordinates in the BH condition do not receive this message. Then, the subordinates perform the capital budgeting tasks for six rounds in the experiment. In each round, the subordinates, i.e. department managers, submit a budget to the hypothetical corporate headquarters to finance production in the department. The production costs are equally distributed in the range of 4,000 lira to 6,000 lira. The corporate headquarters only knows the distribution of the productions costs. The subordinate knows for certain what the actual cost would be before submitting the budget in each round. The subordinates decide whether to submit a budget equal to or higher than the actual cost. The subordinate may submit any number between the actual cost and 6,000 lira. Headquarters provides the funds equal to the budget and never learns the actual cost.

(3) Post-experimental questionnaire

Once all participants complete their tasks, they finish a questionnaire that helps the researcher to understand their decisions. The questionnaire for the superior is to understand their decisions of whether to over-report in the self-reporting task. More importantly, the questionnaire for the subordinates measures their psychological distance with the superior, their

---

10 A budget lower than the actual cost is not accepted because it is irrational for the subordinates to pursue negative earnings. A budget higher than 6,000 lira is also not allowed because, in practice, a budget over the distribution range would be rejected by the corporate headquarters for certain.
perceptions of the superior’s behavioral integrity, the potential size of the pie effect, and their perceptions of the trustworthiness and credibility of the superior (see Appendix A). The reliability of the measures will be reported in Section IV.

3.3 Dependent Measures

The dependent variable in the study is the subordinates’ honesty in the capital budgeting task. Following Evans et al. (2001) and other studies on budget reporting, honesty is measured as a percentage. Specifically,

\[
Honesty = 1 - \frac{Budgeted\ cost - Actual\ cost}{6,000 - Actual\ cost}.
\]

This equation measures honesty as the extent to which the subordinates are honest rather than purely self-interested. The measure takes the range from 0 to 1, with 0 representing the lowest honesty, i.e. purely self-interested behavior, and 1 representing the highest honesty, i.e. purely honest behavior.

IV. Results

172 students from a large public university in the U.S. participated in the experiment. Forty-nine percent of the participants were male, and the average age of the participants was 22. The experiment was conducted in the experimental economics laboratory and took an average of 50 minutes to complete. Among the 172 participants, 43 played the role of superiors. As discussed in Section III, the independent variable, supervisory behavioral integrity, is measured as whether the superior’s honesty in the self-reporting task is consistent with the communicated honesty norm. Among the 43 superiors, 23 showed high behavioral integrity and 20 exhibited low behavioral integrity. The remaining 129 were assigned as the subordinates and were
randomly assigned into the SI, NSI and BH conditions. Table 1 presents the descriptive statistics of the dependent variable, subordinates’ honesty in budget reporting, across conditions\textsuperscript{11}. Among the six conditions, average subordinate honesty is highest when supervisory behavioral integrity is high in the presence of shared financial interests, and it is lowest when supervisory behavioral integrity is low in the presence of shared financial interests.

[Insert Table 1]

4.1 Hypothesis test

4.1.1 Test of H1

Hypothesis 1 predicts that supervisory behavioral honesty has a positive impact on subordinate honesty in budget reporting. To test the H1, I conduct a repeated measures ANOVA between column (a) and column (b) in Table 1. The dependent variable is the subordinates’ honesty in budget reporting, which is a within-subject variable repeatedly measured over the six budgeting rounds. Table 2, Panel A, reports the ANOVA results. There is a significant main effect of supervisory behavioral integrity on subordinate honesty in budget reporting. Specifically, the subordinates’ honesty is significantly higher when the supervisory behavioral integrity is high than when supervisory behavioral integrity is low ($F_{1,82} = 21.12, p < 0.001$), which is consistent with H1.

[Insert Table 2 here]

In addition to measure supervisory behavioral integrity (low versus high) based on the superior’s self-reporting behavior, this study also uses three items in the post-experimental

\textsuperscript{11} The post-experimental questionnaire included two attention-check questions to verify whether the participants could correctly recall the superior’s behavioral integrity. The first question asked the subordinates in the SI and NSI conditions to recall the content of the message received from the superior, and all responses were correct. The second question asked the subordinates in all conditions whether the superior reported exactly or reported higher than the actual performance. Three participants failed this question. Results are inferentially identical if the three participants are excluded.
questionnaire to measure the subordinates’ perceptions of supervisory behavioral integrity. The three items are adapted from Simons et al. (2007). Each item has a 1-11 scale (see Appendix A). Larger numbers on the scale reflect higher perceptions of supervisory behavioral integrity. The reliability analysis shows a high internal consistency across the three questions. The Cronbach’s alpha for the three questions is 0.95, and the intraclass correlation coefficient (0.95) is statistically different from zero ($F_{85} = 20.457, p < 0.001$). Further, the subordinates’ perceptions of the superior’s behavioral integrity are consistent with the superior’s measured behavioral integrity. The results of one-way ANOVA suggests that the subordinates’ perceptions of the supervisory behavioral integrity is significantly higher when the measured supervisory behavioral integrity is high ($mean = 9.32$) than when it is low ($mean = 3.26$), ($F = 205.79, p < 0.001$, two-tailed, not tabulated).

To examine the impact of the subordinates’ perception of supervisory behavioral on subordinate honesty, I employ a structural equation-based factorial analysis. The analysis uses the three items in the post-experimental questionnaire as reflective measures for the independent variable, perceptions of supervisory behavioral integrity. Figure 3 depicts the results of analysis. The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 0.985, p = 0.505$). Subordinates’ perceptions of supervisory behavioral integrity has a positive, significant effect on subordinate honesty (standardized coefficient = 0.429, $p < 0.001$, two-tailed).

[Insert Figure 3 here]

4.1.2 Test of H2

Hypothesis 2 predicts an interaction effect. Specifically, it predicts that the positive effect of supervisory behavioral integrity on subordinate honesty is greater in the presence of shared financial interests than in the absence of shared financial interests. The test of H2 is among the
four cells in column (a) and column (b) in Table 1. Table 2, Panel A, reports the repeated measures ANOVA results. The interaction effect is significant ($F_{1,82} = 23.385, p < 0.001$), suggesting that supervisory behavioral integrity is more effective in promoting subordinate honesty in budget reporting in the presence of shared financial interests than in the absence of shared financial interests. Figure 4 illustrates the interaction effect. Further, Table 2, Panel B reports the simple effects of supervisory behavioral integrity on subordinate honesty. In the presence of shared financial interests, supervisory behavioral integrity has a positive, significant effect on subordinate honesty in budgeting reporting ($F_{1,41} = 57.734, p < .001$). However, the effect is no longer significant in the absence of shared financial interests ($F_{1,41} = 123, p = .728$).

[Insert Figure 4 here]

The results from the structural equation-based factorial analysis using the subordinates’ perception of supervisory behavioral integrity as the independent variable also support H2. As depicted in Figure 3, the interaction between perceptions of supervisory behavioral integrity and the presence of shared financial interests has a significant effect on subordinate honesty (standardized coefficient = 0.464, $p < 0.001$, two-tailed). Furthermore, in the presence of shared financial interest, perception of supervisory behavioral integrity has a positive, significant effect on subordinate honesty (standardized coefficient = 0.930, $p < 0.001$, two-tailed, not tabulated)$^{12}$, whereas in the absence of shared financial interests, it has no significant effect on subordinate honesty (standardized coefficient = 0.025, $p = 0.780$, two-tailed, not tabulated)$^{13}$.

Overall, the results suggest that the impact of supervisory behavioral integrity on subordinate honesty depends on the presence of shared financial interests between the superior

$^{12}$ The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 1.157, p = 0.267$), GFI (0.881), CFI (0.991) and RMSEA (0.061).

$^{13}$ The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 1.173, p = 0.250$), GFI (0.881), CFI (0.982) and RMSEA (0.064).
and the subordinates. Supervisory behavioral integrity may promote subordinate honesty only in the presence of shared financial interests. In the absence of shared financial interests, supervisory behavioral integrity is not effective in influencing the subordinates’ honesty.

4.1.3 Test of H3

H3 predicts that supervisory behavioral integrity has a greater effect on subordinate honesty than supervisory behavioral honesty. As noted earlier, the subordinates in the Behavioral Honesty condition in the experiment always share financial interests in the superior’s decoding task, i.e. they receive rewards based on the superior’s reported performance. Thus, to distinguish between the effects of supervisory behavioral integrity and supervisory behavioral honesty, the comparison is between the SI and the BH conditions. I will term the SI condition as the behavioral integrity condition, abbreviated as BI condition, to ease the discussion of the results for this subsection. Accordingly, the results are presented as a comparison between BI, i.e. behavioral integrity, and BH, i.e. behavioral honesty, conditions. BI condition refers to column (b) in Table 1, and BH condition refers to column (c) in Table 1. Further, because the difference between BI and BH is whether the superior communicates the value of honesty to the subordinates before the subordinates’ capital budgeting task, I term the independent variable as communication, which equals 0 for the BH condition where the subordinates receive no communication about the honesty value and equals 1 for the BI condition where the subordinates receive the communication. Further, when the superior is honest, both supervisory behavioral integrity and supervisory behavioral honesty are high, and vice versa. Therefore, the other independent variable, for the test of H3, is termed as superior honesty (0 = low and 1 = high).
Accordingly, the interaction effect predicted in H3 is translated as the positive effect of superior honesty on subordinate honesty is greater when communication equals 1 than when it equals 0.

I conduct a repeated measures-ANOVA to examine the interaction effect between superior honesty and communication on subordinate honesty. Table 3 reports the results. There is an significant interaction effect ($F_{1,82} = 48.273, p < 0.001$), suggesting that the effect of superior’s honesty on subordinate honesty is greater in the BI condition than in the BH condition. Figure 5 illustrates the interaction effect. As superior honesty increases, supervisory behavioral integrity has a positive effect on subordinate honesty while supervisory behavioral honesty has a negative effect on subordinate honesty. Table 3, Panel B reports the simple effects of supervisory behavioral integrity on subordinate honesty. Both the positive effect of supervisory behavioral integrity on subordinate honesty ($F_{1,41} = 57.734, p < .001$) and the negative effect of supervisory behavioral honesty on subordinate honesty ($F_{1,41} = 5.038, p = .03$) are significant.

[Insert Table 3 here]

[Insert Figure 5 here]

**4.2 Supplemental analysis**

**4.2.1 Moderated mediation model for H2**

To examine the mechanisms underlying the interaction effect in H2, I conduct a more comprehensive analysis of the moderated mediation model that is depicted in Figure 2. The model suggests that the presence of shared financial interests reduces the psychological distance between the superior and the subordinates, and the reduced psychological distance, in turn, moderates the influence of supervisory behavioral integrity on subordinate honesty.
When examining the moderated mediation model, I only report the analysis that uses the measured *supervisory behavioral integrity*, i.e. whether the superior’s behavior is consistent with the communicated honesty norm. Results are inferentially identical from the analysis using the subordinates’ perceptions of supervisory behavioral integrity as the independent variable.

To measure the mediator in the model, i.e. subordinates’ psychological distance from the superior, I use a questionnaire with five items adapted from Doosje et al. (1995) and Choi et al. (2015). Each item has 1-11 scale (see Appendix A). Table 4 reports the descriptive statistics of the subordinates’ responses to each of the five questions by the presence of shared financial interests. In the experimental instrument, the items measure how psychologically close the subordinates feel to the superior, and thus greater values reported in Table 4 represent smaller psychological distance and vice versa. The reliability analysis shows a high internal consistency across the five questions. The *Cronbach’s alpha* for the five questions is 0.87, and the *intraclass correlation coefficient* (0.87) is statistically different from zero ($F = 7.676, p < 0.001$).

[Insert Table 4 here]

In order to be consistent with the construct of psychological distance and improve interpretability, I reverse the measured scale of psychological distance in the data analysis, such that greater values reflect larger psychological distance. Thus, given the coding of the presence of shared financial interests (NSI = 0 and SI = 1), I expect a negative effect of the presence of shared financial interests on psychological distance. Further, as discussed earlier, as the psychological distance reduces, subordinates are more likely to be influenced by the superior’s behavior. Therefore, I predict a negative interaction effect of supervisory behavioral integrity and psychological distance on subordinate honesty.
I employ structural equations-based path analysis to examine the moderated mediation model. The results of the path analysis are depicted in Figure 6. The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 1.096, p = 0.210$), GFI (0.855), CFI (0.990) and RMSEA (0.034). The results shown in Figure 6 are consistent with my expectations. Specifically, the presence of shared financial interests has a negative, statistically significant effect on psychological distance (standardized coefficient = -0.663, $p < 0.001$, two-tailed).

Further, the positive interaction effect between supervisory behavioral integrity and the presence of shared financial interests on subordinate honesty tested in H2 may be divided into two paths. First, the interaction between supervisory behavioral integrity and the presence of shared financial interests has a negative association with the interaction between supervisory behavioral integrity and psychological distance (standardized coefficient = -0.821, $p < 0.001$, two-tailed). Mathematically, the negative association is driven by the negative relation between psychological distance and the presence of shared financial interests. Second, psychological distance moderates the effect of supervisory behavioral integrity on subordinate honesty (standardized coefficient = -0.486, $p < 0.001$, two-tailed). The negative coefficient suggests that supervisory behavioral integrity has a stronger positive effect on subordinate honesty as psychological distance between the subordinates and the superior becomes smaller. Moreover, the path analysis reports the total effect, direct effect and indirect effect of (1) the presence of shared financial interests and (2) interaction between supervisory behavioral integrity and shared financial interest on subordinate honesty. As shown in Table 5, neither (1) nor (2) has a direct effect on subordinate honesty, suggesting that psychological distance fully mediates the effect of the presence of shared financial interests on subordinate honesty, and also the interaction between supervisory behavioral integrity and psychological distance fully mediates the
interaction effect of supervisory behavioral integrity and the presence of shared financial interests on subordinate honesty. Collectively, the results of the moderated mediation analysis are consistent with the model in Figure 2 explaining the mechanisms underlying the interaction effect in H2.

[Insert Table 5 here]

[Insert Figure 6 here]

4.2.2 Path analysis for H3

The test of H3 shows that supervisory behavioral integrity has a greater effect on subordinate honesty than supervisory behavioral honesty. As discussed earlier, I argue that the greater effect may be explained by the impact on the subordinates’ perceptions of the superior’s credibility and trustworthiness. In this subsection, I conduct a structural equations-based path analysis to test the predicted effects.

To measure the subordinates’ perceptions of the superior’s trustworthiness, the questionnaire uses two questions adapted from Mayer and Davis (1999). Both questions have a 1-11 scale (see Appendix A), and a larger number on the scale represents that the subordinates perceive the superior to be more trustworthy. The reliability analysis shows a high internal consistency. The Cronbach’s alpha for the two questions is 0.86, and the intraclass correlation coefficient (0.86) is statistically different from zero ($F = 7.022, p < 0.001$). Also, the measures for the subordinates’ perceptions of the credibility of the superior are four items adapted from McCroskey’s (1966) credibility scale. The four items use a scale of 1-11 to measure the subordinates’ perceptions of the extent to which the superior is friendly, caring, reliable, and honest. The reliability analysis shows a high internal consistency among the four items. The
Cronbach’s alpha is 0.90, and the intraclass correlation coefficient (0.90) is statistically different from zero ($F = 9.654, p < 0.001$).

Figure 7 depicts the results of structural equations-based path analysis\textsuperscript{14}. The path analysis shows that superior honesty and communication interactively impact the subordinates’ perception of the superior’s trustworthiness (standardized coefficient = 0.190, $p = 0.016$, two-tailed) and credibility (standardized coefficient = 0.357, $p < 0.050$, two-tailed). Also, the subordinates’ perception of the superior’s trustworthiness positively affect subordinates’ honesty, and the subordinates’ perceptions of the superior’s credibility marginally impact subordinates’ honesty (standardized coefficient = 0.357, $p < 0.127$, two-tailed, not tabulated). Overall, the results of the path analysis suggest that, compared to supervisory behavioral honesty, supervisory behavioral integrity has a greater effect on subordinate honesty because it has a greater impact on the subordinates’ perceptions of the superior’s credibility and trustworthiness.

4.2.3 Analysis on the negative effect of supervisory behavioral honesty on subordinate honesty

There are two alternative explanations for the negative, significant effect of supervisory behavioral honesty on subordinate honesty. The first explanation is the “size of the pie” effect. Because the subordinates in the supervisory behavioral honesty condition share financial interests in the superior’s decoding task, they may be subject to the “size of the pie” effect. That is, the superior’s honest reporting in the decoding task reduces the subordinates’ payoffs, which may motivate the subordinates to submit a higher budget. In the presence of the communicated value of honesty, the subordinates may perceive the superior’s honest reporting is following the

\textsuperscript{14} The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 1.031, p = 0.398$), GFI (0.892), CFI (0.998) and RMSEA (0.019).
communicated honesty value, and therefore, the “size of the pie” effect is weaker compared to the absence of the communicated honesty value condition.

In the post-experimental questionnaire, one question asks whether the subordinates prefer the superior to report exactly his or her actual performance, to report higher than his or her actual performance, or the subordinates are indifference between the two options. The “size of the pie” effect would predict that, as superior honesty increases, the likelihood that the subordinates prefer the superior to over-report should increase more in the absence of the communicated value of honesty than in the presence of the communication. However, Table 6, Panel A, reports that there is a negative, significant interaction effect of superior honesty and communication on the probability of the subordinates preferring the superior to over-report (\(Wald = 5.243, p = 0.022\), two-tailed), suggesting that as superior honesty increases, the reduction in the likelihood of the subordinates’ preferring the superior to over-report is greater when communication equals 1 than when it equals 0. The results on simple effects, Table 6, Panel B, further show inconsistency with the size of the pie explanation. The simple effects show that when superior honesty increases, subordinates are less likely to prefer the superior to over-report when communication equals 1 (\(Wald = 4.797, p = 0.029\), two-tailed). When communication equals 0, however, superior honesty has no significant effect on the likelihood that the subordinate prefer the superior to over-report (\(Wald = 1.009, p = 0.315\), two-tailed). Recall that communication equals 1 represents the supervisory behavioral integrity condition, and that communication equals 0 refers to the supervisory behavioral honesty condition. Thus, the results suggest that the subordinates are less likely to prefer the superior to over-report as supervisory behavioral integrity increases, while the likelihood has no change when supervisory behavioral honesty increase. Overall, the “size of the
pie” effect is not a valid explanation for the negative effect of supervisory behavioral honesty on subordinate honesty.

The other explanation is the vicarious moral licensing effect. The vicarious moral licensing effect argues that when people feel psychologically close with others, they may take moral credentials from others’ prior moral behavior, which in turn make them more likely to do potentially immoral things without worrying about feeling immoral (Monin and Miller, 2001; Sachdeva et al. 2009; Monin and Jordan 2009; Goldstein and Cialdini 2007; Kouchaki 2011). In this study, the subordinates feel psychologically close to the superior in both the BI and BH conditions due to the presence of shared financial interests in both conditions. According to social psychology literature, when the psychological distance is small, the subordinates may vicariously take moral credentials from the superior’s moral behavior, such as honest self-reporting. In the absence of the communicated value of honesty, take moral credential from the superior’s behavior may make the subordinates more likely to report dishonestly without feeling immoral. However, in the presence of the communicated value of honesty, it is against the communicated value of honesty to report dishonestly in budget reporting, and therefore, the subordinates may feel immoral be report dishonestly no matter whether they have taken moral credentials from the superior’s behavior. Thus, I predict that supervisory behavioral honesty leads to a vicarious moral licensing effect on subordinates, while the effect is weaker or insignificant for supervisory behavioral integrity.

In the post-experimental questionnaire, I use three items to measure how the subordinates evaluate the importance of the characteristic of honesty after observing the superior’s behavior. The three items are adapted from Aquino and Reed’s (2002) and Kouchaki (2011), and each item uses a 1-11 scale. A larger value on the scale reflects that the subordinates evaluate the
characteristic of honesty is more important to him or her. The three items show a high internal consistency. The Cronbach’s alpha for the three questions is 0.78, and the intraclass correlation coefficient (0.78) is statistically different from zero ($F_{129} = 4.521, p < 0.001$). The vicarious moral licensing explanation predicts that supervisory behavioral honesty negatively impacts the subordinates’ evaluations of the importance of the characteristic of honesty, while supervisory behavioral integrity has a smaller negative effect or no significant effect. Figure 8 depicts the results of structural equations-based path analysis. As shown in the figure, superior honesty and communication interactively impact the subordinate’s evaluation of the importance of the characteristic of honesty (standardized coefficient = 0.221, $p < 0.001$, two-tailed). The subordinates’ evaluation of the importance of the characteristic of honesty further influences subordinate honesty in budget reporting (standardized coefficient = 0.455, $p = 0.015$, two-tailed). A further examination on the simple effects, also depicted in Figure 8, reports that supervisory behavioral integrity has no significant effect on the subordinate’s evaluation of the importance of the characteristic of honesty. Supervisory behavioral honesty, however, has a negative, significant effect on the subordinate’s evaluation of the importance of the characteristic of honesty (standardized coefficient = 0.237, $p = 0.011$, two-tailed), and the subordinate’s evaluation of the importance of the characteristic of honesty has a positive, significant effect on subordinate honesty in budget reporting (standardized coefficient = 0.796, $p = 0.008$, two-tailed). The analysis on the total effect, direct effect and indirect effect reports that the subordinate’s evaluation of the importance of the characteristic of honesty fully mediates the

---

15 The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 1.166$, $p = 0.205$), GFI (0.903), CFI (0.987), and RMSEA (0.044).

16 The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 1.158$, $p = 0.25$), GFI (0.859), CFI (0.986), and RMSEA (0.061).

17 The model provides a good fit for the data, as indicated by a traditional $\chi^2$ test ($\chi^2 = 0.915$, $p = 0.61$), GFI (0.869), CFI (1.000), and RMSEA (0.000).
negative effect of supervisory behavioral honesty on subordinate honesty (total effect = -0.319, direct effect = 0, and indirect effect = -0.319, not tabulated). Overall, the results from the structural equations-based path analysis suggest that the vicarious moral licensing effect might explain the negative effect of supervisory behavioral honesty on subordinate honesty.

V. Discussion and conclusion

In this study, I conduct an experiment to investigate the role of supervisors in influencing subordinate honesty in budget reporting in an organization. I find that supervisory behavioral integrity, i.e. the alignment between the superior’s words and deeds, is an effective informal control mechanism to influence employee honesty. However, the effectiveness of supervisory behavioral integrity depends on the presence of shared financial interests between the superior and the subordinates, such that high supervisory behavioral integrity may promote employee honesty only in the presence of shared financial interests. In the absence of shared financial interests, supervisory behavioral integrity is no longer effective in influencing employee honesty. Further, I develop and find support for a causal model that explains the interaction effect. The model explains that the presence of shared financial interests reduces psychological distance the subordinates feel from the superior, and the reduced psychological distance leads the subordinates to more likely behave consistent with the superior’ behavioral ethics. Moreover, I distinguish between supervisory behavioral integrity and supervisory behavioral honesty on their impacts on subordinate honesty. Consistent with my prediction, the results suggest that, in the presence of shared financial interests, compared to supervisory behavioral honesty, supervisory behavioral integrity has a stronger influence on subordinate honesty because it impacts the subordinates’ perceptions of the superior’s credibility and trustworthiness. Furthermore, in the
presence of shared financial interests, high supervisory behavioral integrity promotes subordinate honesty, while high supervisory behavioral honesty turns out to demote subordinate honesty. The supplemental analysis shows that the demotion effect of supervisory behavioral honesty on subordinate honesty might be explained by the vicarious moral licensing effect, i.e. due to the reduced psychological distance between the superior and the subordinates, the subordinates may take moral credentials from the superior’s ethical behavior and are more willing to express immoral attitudes.

This study provides insight on the role of supervisors and senior managers in an organization may play in influencing the behavioral ethics of the employees, establishing the theoretical explanation of how employees may vicariously learn from the superior’s behavioral integrity. Further, the superiors’ influence varies across the organizational environments when the organizational environments impact the psychological distance between the supervisors and the employees. The findings are important for practice because it identifies that the organizational settings where the subordinates feel a low psychological distance from the superiors are most beneficial for companies to invest their limited resources to audit or monitor the behavioral integrity of supervisors or senior managers. On the other hand, in the organizational settings where the subordinates feel a high psychological distance from the superior, investing in such a costly system to induce high supervisory behavioral integrity brings no significant benefits to the companies because supervisory behavioral integrity has no significant impact on subordinate honesty in these organizational settings.

Further, this study contributes to the understanding of why managers should both “walk the talk” and “talk the walk”, especially in the organizational setting where the subordinates may feel a low psychological distance from the superior. The study suggests that managers’
communication of organizational values to the subordinates without exhibiting behavior consistent with the values demotes employee honesty more than managers’ unethical behavior alone. The findings are of particular importance to the accounting literature in light of Sarbanes-Oxley Act, Section 406, requirements of the organizations to disclose the adoption of a corporate code of ethics or otherwise to justify the absence of such a code of ethics. This study suggests that senior managers’ unethical behavior, such as misreporting, may result in more unwanted behaviors from the employees and higher costs for the companies in the presence of the corporate code of ethics than in the absence of such a code. Thus, following the code of ethics, i.e. “walking the talk”, not only benefits the outside stakeholders of the organization such as investors and creditors, but also benefits the business itself by reducing unwanted employee behavior and promoting wanted employee behavior.

In the meanwhile, this study provides evidence that, in the organizational environment where the psychological distance between the superior and the subordinates are low, superior’s ethical behavior may have a demotion effect on employee behavior. The demotion effect occurs only in the absence of a communicated ethical value, and a possible explanation for the demotion effect is that subordinates may take moral credentials from the superior’s behavior in the absence of such a communicated value. When the superior communicates the ethical value, superior’s ethical behavior effectively promotes employee behavior. Thus, managers’ “talking the walk” also play an important role in influencing the behavior of employees.

As with prior experimental studies of employee honesty, this study tests relevant theory in a controlled environment to maintain internal validity. The experimental setting abstracts the decision environments in practice. Therefore, the generalizability of the theory in this study may be subject to the influence of other factors. For example, the subordinates expect the superior’s
behavioral integrity by observing the superior’s behavior in one self-reporting task in this study. Future research may provide insights to investigate how repeated interactions between the superior and the subordinates may influence the subordinates’ perception regarding the consistency of the superior’s behavioral integrity, and how consistency in the superior’s behavioral integrity may influence the subordinates’ ethical behavior. Also, this study provides the theoretical basis to explain how supervisory behavioral integrity may promote desirable behavior of subordinate in organizations. Although this study tests the effect in a budgeting setting, the mechanisms through which supervisory behavioral integrity impacts subordinate behavior may generalize to other settings in organizations. Future studies may examine the effect of supervisory behavioral integrity on subordinate behavior in other organizational settings, and explore whether this effect may be moderated by different informal and formal control schemes.

Moreover, this study distinguishes between the effect of supervisory behavioral integrity and supervisory behavioral honesty on subordinate honesty while controlling for presence of shared financial interests. Future studies may examine whether the interaction between supervisory behavioral integrity and supervisory behavioral honesty is significant in a setting of the absence of shared financial interests and whether supervisory behavioral honesty has a promotion or demotion effect on subordinate honesty in that setting. If the results suggest a promotion effect, future studies may seek and test whether vicarious moral licensing effect is the underlying mechanism or there are alternative explanations for moderation between supervisory behavioral honesty and the presence of shared financial interests.
References


Appendix A – Post-experimental questionnaire

Measures for psychological distance

Please provide your opinion on the following questions. Answer these questions as how you feel RIGHT NOW.

1. How familiar are you to the division manager?
   1 (not at all familiar)  11 (very familiar)

2. How close are you to the division manager?
   1 (not at all close)  11 (very close)

3. How likely is it that you would do things in the same way as the division manager?
   1 (not at all likely)  11 (very likely)

4. How likely is it that you would be friends with the division manager?
   1 (not at all likely)  11 (very likely)

5. How strong do you feel the tie between you and the division manager?
   1 (There is not tie at all)  11 (There is a very strong tie)

The following questions are designed to collect information to help the researchers understand your budgeting decision. Please be assured that you cannot be personally identified from your responses. Please be as candid as possible.

Measures for the size of the pie effect

1. Which of the following did you prefer happening?
   a. The division manager reports his or her actual performance.
   b. The division manager reports higher than his or her actual performance.
   c. I was indifferent whether the division manager reports exactly or higher than his or her performance.

Measures for the subordinates’ perceptions of supervisory behavioral integrity

2. There is a match between the division manager’s words and actions.
   1 (strongly disagree)  11 (strongly agree)

3. The division manager conducts himself/herself by the same values he/she talks about.
   1 (strongly disagree)  11 (strongly agree)

4. When the division manager promises something, I can be certain that it will happen.
   1 (strongly disagree)  11 (strongly agree)
Measures for the subordinates’ perceptions of the superior’s trustworthiness

5. Indicate the degree to which you agree with each statement below.

   (1) I would be willing to let the division manager have complete control over my future in the company.
       1 (strongly disagree)  11 (strongly agree)

   (2) I would be comfortable giving the division manager a task or problem which was critical to me, even if I could not monitor his or her actions.
       1 (strongly disagree)  11 (strongly agree)

Measures for the subordinates’ perceptions of the superior’s credibility

6. To what extent, in your opinion, does the division manager possess each of the following characteristics?

   a. Friendly:  1 (not at all friendly)  11 (very friendly)
   b. Caring:     1 (not at all caring)  11 (very caring)
   c. Reliable:  1 (not at all reliable)  11 (very reliable)
   d. Honest:    1 (not at all honest)  11 (very honest)

Measures for the subordinates’ evaluation of the importance of the characteristic of honesty

7. Please provide your opinion on the following questions:

   (1) How would it make you feel to be a person who has the characteristic of honesty?
       1 (extremely bad)  11 (extremely good)

   (2) How important is the characteristic of honesty to be a part of who you are?
       1 (absolutely unimportant)  11 (absolutely important)

   (3) How strongly do you desire to have the characteristic of honesty?
       1 (I don’t desire the characteristic at all)  11 (I desire the characteristic very strongly)
Figure 1: Timeline of experimental tasks

Superior:
- Perform decoding task
- Receive performance feedback
- Communicate to the subordinate of the honesty norm
- Report the number of correctly decoded problems

Subordinate:
"(In the absence or presence of shared financial interests conditions)
- Wait for the superior to finish the decoding task
- Receive the message from the superior about the honesty norm*
- Receive the reports whether the superior reports exactly or over-reports the actual performance
- Perform capital budgeting task

Subordinate: (behavioral honesty condition)
- Wait for the superior to finish the decoding task
- Receive the reports whether the superior reports exactly or over-reports the actual performance
- Perform capital budgeting task

* Subordinates in the behavioral honesty condition receive this message after completing the capital budgeting task and the post-experimental questionnaire.
Figure 2: Hypothesized causal model for H2

\[ a \text{ Supervisory Behavioral Integrity} \text{ refers to the alignment between espoused values, i.e. the values expressed by a superior’s words, and enacted values expressed by the superior’s deeds in an organization. A higher level of supervisory behavioral integrity reflects a higher degree of alignment between the superior’s words and deeds.} \]

\[ b \text{ Subordinate honesty in budget reporting} \text{ refers to the extent to which the subordinates honestly report the production cost in capital budgeting. As over-reporting in capital budgeting increases, subordinate honesty in budget reporting decreases.} \]

\[ c \text{ The presence of shared financial interests} \text{ refers to whether the subordinates are financially impacted by the superior’s behavior.} \]

\[ d \text{ Psychological distance} \text{ refers to the degree to which people perceive that they are related to other people, places, events, or points in time. In this model, psychological distance refers to how the subordinates feel related to the superior. A greater value of psychological distance reflects a larger distance that the subordinates psychologically feel against the superior.} \]
Figure 3: H1 and H2 – Structural equation-based factual analysis

Fit index: $\chi^2 = 0.985 (p = 0.505)$.

Standardized path coefficients are presented.

*** Two-tailed p-value < 0.001

** Two-tailed p-value = 0.003

$^a$ Perceptions of supervisory behavioral integrity measures the subordinates’ perceptions of the superior’s behavioral integrity. It is continuous, with a larger value representing higher supervisory behavioral integrity

$^b$ The presence of Shared financial interests is a manipulated variable. It equals 0 in the absence of shared financial interests condition and equals 1 in the presence of shared financial interests condition.

$^c$ Subordinate honesty is a latent variable reflected by the subordinates’ honesty in the budgeting task for six rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.
Figure 4: H2 – Repeated measures ANOVA results

DV = Subordinate honesty

Supervisory behavioral integrity

Presence of shared financial interests

Absence of shared financial interests
Figure 5: Test of H3

DV = Subordinate honesty

Supervisory behavioral integrity

Supervisory behavioral honesty

Low

High

Superior honesty
Figure 6: Moderated Mediation Analysis for H2

Supervisory behavioral integrity $^a$

Supervisory behavioral integrity $\times$ Presence of shared financial interests

Presence of shared Financial Interests $^b$

Supervisory behavioral integrity $\times$ Psychological distance

Psychological distance $^c$

Subordinate honesty $^d$

Fit indices: $\chi^2 = 1.096$ ($p = 0.210$), $GFI = 0.855$, $CFI = 0.990$, $RMSEA = 0.034$.

Standardized path coefficients are presented.

*** Two-tailed p-value < 0.001

** Two-tailed p-value = 0.002

$^a$ Supervisory behavioral integrity is measured as whether the superior’s honesty in self-reporting is consistent with the honesty value the superior communicated to the subordinates. It equals 0 when supervisory behavioral integrity is low, i.e. the superior is dishonest while communicating the value of honesty. It equals 1 when supervisory behavioral integrity is high, i.e. the superior is honest when communicating the value of honesty.
b The presence of Shared financial interests is a manipulated variable. It equals 0 in the absence of shared financial interests condition and equals 1 in the presence of shared financial interests condition.

c Psychological distance measures the extent to which the subordinates feel related to the superior. It is continuous with a larger value representing greater psychological distance the subordinates’ feel from the superior.

d Subordinate honesty is a latent variable reflected by the subordinates’ honesty in the budgeting task for six rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.
Figure 7: Path analysis for H3

Superior honesty $^a$

Superior honesty × Communication

Communication $^b$

Subordinates’ perception of superior credibility $^d$

Subordinates’ perception of superior trustworthiness $^e$

Subordinate honesty $^f$

Fit indices: $\chi^2 = 1.031 (p = 0.398)$, $GFI = 0.892$, $CFI = 0.998$, $RMSEA = 0.019$.

Standardized path coefficients are presented. Only significant coefficients are not presented.

*** Two-tailed p-value $< 0.001$

** Two-tailed p-value $< 0.01$

* Two-tailed p-value $< 0.05$

$^a$ Superior honesty is dichotomous. It equals 0 when the superior over-reports his or her actual performance in the decoding task and equals 1 when the superior honestly reports his or her actual performance in the decoding task.
Communication is dichotomous. It equals 0 for the supervisory behavioral honesty condition and equals 1 for the supervisory behavioral integrity condition. In the supervisory behavioral integrity condition, the subordinates receive the superior’s communication of the honesty value before the performing the capital budgeting task. In the supervisory behavioral honesty condition, the subordinates receive no communication from the superior about the honesty value before the capital budgeting task.

Subordinates’ social identity with the superior measures the degree to which the subordinates feel socially identified with the superior. It is continuous, with a greater value reflects that the subordinates feel more socially identified with the superior.

Subordinates’ perception of superior credibility measures the degree to which the subordinates perceive the superior to be credible. It is continuous, with a greater value reflects that the subordinates’ perceptions of the superior’s credibility are higher.

Subordinates’ perception of superior trustworthiness measures the degree to which the subordinates perceive the superior to be trustworthy. It is continuous, with a greater value reflects that the subordinates’ perceptions of the superior’s trustworthiness are higher.

Subordinate honesty is a latent variable reflected by the subordinates’ honesty in the budgeting task for six rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.
Figure 8: Supplemental analysis – vicarious moral licensing effect

Fit indices: $\chi^2 = 1.166$ ($p = 0.205$), $GFI (0.903)$, $CFI (0.987)$, and $RMSEA (0.044)$.

**Simple effects:**

*Supervisory behavioral integrity condition (Communication = 1)*

Fit indices: $\chi^2 = 1.158$ ($p = 0.25$), $GFI (0.859)$, $CFI (0.986)$, and $RMSEA (0.061)$.

*Supervisory behavioral honesty condition (Communication = 0)*

Fit indices: $\chi^2 = 0.915$ ($p = 0.61$), $GFI (0.869)$, $CFI (1.000)$, and $RMSEA (0.000)$.

Standardized path coefficients are presented. Only significant coefficients are presented.

** Two-tailed p-value < 0.01
* Two-tailed $p$-value < 0.05

a Superior honesty is dichotomous. It equals 0 when the superior over-reports his or her actual performance in the decoding task and equals 1 when the superior honestly reports his or her actual performance in the decoding task.

b Communication is dichotomous. It equals 0 for the supervisory behavioral honesty condition and equals 1 for the supervisory behavioral integrity condition. In the supervisory behavioral integrity condition, the subordinates receive the superior’s communication of the honesty value before the performing the capital budgeting task. In the supervisory behavioral honesty condition, the subordinates receive no communication from the superior about the honesty value before the capital budgeting task.

c Evaluation of the characteristic of honesty measures the subordinates’ evaluations of the importance of the characteristic of honesty after observing the superior’s behavior. It is continuous, with a greater value reflects that the subordinates evaluate the characteristic of honesty to be more important.

d Subordinate honesty is a latent variable reflected by the subordinates’ honesty in the budgeting task for six rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.
Table 1: Descriptive statistics – Subordinate honesty in budget reporting

<table>
<thead>
<tr>
<th>Supervisory behavioral integrity</th>
<th>N</th>
<th>The presence of shared financial interests</th>
<th>N</th>
<th>Superior behavioral honesty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>20</td>
<td>0.317 (0.295)</td>
<td>0.197 (0.243)</td>
<td>Low</td>
</tr>
<tr>
<td>High</td>
<td>23</td>
<td>0.345 (0.228)</td>
<td>0.745 (0.230)</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N = 20</td>
<td>N = 20</td>
<td>N = 20</td>
</tr>
</tbody>
</table>

Subordinate honesty in budget reporting = the average of the subordinates’ honesty across the six budgeting rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.

Experimental conditions:

(1) Supervisory behavioral integrity is measured as whether the superior’s honesty in self-reporting is consistent with the value of honesty that the superior communicated to the subordinates.

- Supervisory behavioral integrity is low: the superior communicates the value of honesty but is dishonest in self-reporting.
- Supervisory behavioral integrity is high: the superior communicates the value of honesty and is honest in self-reporting.

(2) The presence of shared financial interests is manipulated as whether the subordinates are financially impacted by the superior’s behavior.

- “No” condition: The superior’s self-reporting task has no impact on the subordinate’s payoffs.
- “Yes” condition: The subordinate receives a reward based on the superior’s reported performance in the self-reporting task.

(3) Supervisory behavioral honesty refers to the situation where the subordinates receive no communication from the superior about the value of honesty before the capital budgeting task, and thus, the only factor to influence the subordinates’ honesty in the
supervisory behavioral honesty condition is the superior’s honesty in self-reporting. Also, the presence of shared financial interests is held as “Yes” in the supervisory behavioral honesty condition.

- Supervisory behavioral honesty is low: the superior over-reports his or her actual performance in the decoding task.
- Supervisory behavioral honesty is high: the superior honestly reports his or her actual performance in the decoding task.

* The tests of H1 and H2 are among the four cells in column a and column b. The analysis to disentangle between the effects of supervisory behavioral integrity and supervisory behavioral honesty is among the four cells in column b and column c.
Table 2: ANOVA results

Dependent variable = Subordinate honesty \(^a\)

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-statistic</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: two-way repeated measures ANOVA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrity (^b)</td>
<td>10.655</td>
<td>1</td>
<td>10.655</td>
<td>21.123</td>
<td>.000</td>
</tr>
<tr>
<td>Sharing (^c)</td>
<td>2.514</td>
<td>1</td>
<td>2.514</td>
<td>6.768</td>
<td>.011</td>
</tr>
<tr>
<td>Integrity × Sharing</td>
<td>8.687</td>
<td>1</td>
<td>8.687</td>
<td>23.385</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>30.461</td>
<td>82</td>
<td>.371</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Panel B: one-way repeated measures ANOVA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The absence of shared financial interests condition (Sharing (^c) = 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrity (^b)</td>
<td>.050</td>
<td>1</td>
<td>.050</td>
<td>.123</td>
<td>.728</td>
</tr>
<tr>
<td>Residual</td>
<td>16.761</td>
<td>41</td>
<td>.409</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The presence of shared financial interests condition (Sharing (^c) = 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrity (^b)</td>
<td>19.292</td>
<td>1</td>
<td>19.292</td>
<td>57.734</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>13.700</td>
<td>41</td>
<td>.334</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Subordinate honesty: the subordinates’ honesty in budget reporting repeated measured across the six rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.

\(^b\) Integrity: *supervisory behavioral integrity*. Integrity equals 0 when supervisory behavioral integrity is low and equals 1 when supervisory behavioral integrity is high.

\(^c\) Sharing: *the presence of shared financial interests*. It equals 0 in the absence of shared financial interests condition and equals 1 in the presence of shared financial interests condition.

* \(p\) values are two-tailed.
Table 3: Test of H3

Dependent variable = Subordinate honesty

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: two-way repeated measures ANOVA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superior honesty b</td>
<td>4.742</td>
<td>1</td>
<td>4.742</td>
<td>14.026</td>
<td>.000</td>
</tr>
<tr>
<td>Communication c</td>
<td>1.302</td>
<td>1</td>
<td>1.302</td>
<td>3.851</td>
<td>.053</td>
</tr>
<tr>
<td>Superior honesty × Communication</td>
<td>16.273</td>
<td>1</td>
<td>16.273</td>
<td>48.134</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>27.723</td>
<td>82</td>
<td></td>
<td>.338</td>
<td></td>
</tr>
</tbody>
</table>

**Panel B: one-way repeated measures ANOVA**

| Supervisory behavioral honesty condition (Communication = 0) |      |    |      |             |         |
| Superior honesty                                             | 1.723| 1  | 1.723| 5.038       | .030    |
| Residual                                                     | 14.022| 41 |      | .342        |         |

| Supervisory behavioral integrity condition (Communication = 1) |      |    |      |             |         |
| Superior honesty                                             | 19.292| 1  | 19.292| 57.734      | .000    |
| Residual                                                     | 13.700| 41 |      | .334        |         |

a Subordinate honesty is a latent variable reflected by the subordinates’ honesty in the budgeting task for six rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.

b Superior honesty is dichotomous. It equals 0 when the superior over-reports his or her actual performance in the decoding task and equals 1 when the superior honestly reports his or her actual performance in the decoding task.

c Communication is dichotomous. It equals 0 for the supervisory behavioral honesty condition and equals 1 for the supervisory behavioral integrity condition. In the supervisory behavioral integrity condition, the subordinates receive the superior’s communication of the honesty value before the performing the capital budgeting task. In the supervisory behavioral honesty condition, the subordinates receive no communication from the superior about the honesty value before the capital budgeting task.
## Table 4: Descriptive statistics – Psychological distance

<table>
<thead>
<tr>
<th>Questions</th>
<th>Presence of shared financial interests</th>
<th>Supervisory behavioral honesty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: How familiar are you to the division manager?</td>
<td>2.30 (1.319)</td>
<td>5.58 (1.918)</td>
</tr>
<tr>
<td>Q2: How close are you to the division manager?</td>
<td>2.93 (2.017)</td>
<td>6.88 (2.291)</td>
</tr>
<tr>
<td>Q3: How likely is it that you would do things in the same way as the division manager?</td>
<td>4.07 (2.453)</td>
<td>6.86 (1.922)</td>
</tr>
<tr>
<td>Q4: How likely is it that you would be friends with the division manager?</td>
<td>4.07 (2.165)</td>
<td>6.07 (1.696)</td>
</tr>
<tr>
<td>Q5: How strong do you feel the tie is between you and the division manager?</td>
<td>3.00 (1.690)</td>
<td>6.98 (1.896)</td>
</tr>
</tbody>
</table>

*Each question uses a 1-11 scale to measure the extent to which the subordinates feel related to the superior. For each question, a higher response value indicates that the subordinate feels psychologically closer to the superior, and thus it represents a smaller psychological distance. However, in order to increase interpretability and to be consistent with the construct of psychological distance, a reversed scale is used in data analysis such that a larger value reflects a greater psychological distance.*

*The presence of shared financial interests* is a manipulated variable. It equals 0 in the absence of shared financial interests condition and equals 1 in the presence of shared financial interests condition.

*Supervisory behavioral honesty* refers to the condition where the subordinates receive no communication from the superior about the value of honesty before the capital budgeting task.
Table 5: Moderated mediation for H2 – Total effects, direct effects, and indirect effects $^a$

<table>
<thead>
<tr>
<th>DV = Subordinate honesty $^b$</th>
<th>Total effect</th>
<th>Direct effect</th>
<th>Indirect effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of shared financial interests</td>
<td>0.194</td>
<td>0.000</td>
<td>0.194</td>
</tr>
<tr>
<td>Supervisory behavioral integrity × Presence of shared financial interests</td>
<td>0.489</td>
<td>0.000</td>
<td>0.489</td>
</tr>
</tbody>
</table>

$^a$ This table reports total effects, direct effects and indirect effects for the model depicted in Figure 5. Specifically, this table reports the effects on two paths in the model: (1) the effect of the presence of shared financial interests on subordinate honesty mediated by psychological distance, and (2) the effect of the interaction between supervisory behavioral integrity and the presence of shared financial interests on subordinate honesty mediated by the interaction between supervisory behavioral integrity and psychological distance. The existence of significant mediation effects on both paths together supports the moderated mediation model.

$^b$ Subordinate honesty is a latent variable reflected by the subordinates’ honesty in the budgeting task for six rounds. It is continuous between 0 and 1, with a greater value representing higher subordinate honesty.
### Table 6: Test on the size of the pie effect

*Dependent variable =The likelihood of the subordinate preferring the superior to over-report*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: Logistic regression – Interaction effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superior honesty b</td>
<td>0.629</td>
<td>0.626</td>
<td>0.100</td>
<td>.315</td>
</tr>
<tr>
<td>Communication c</td>
<td>0.201</td>
<td>0.634</td>
<td>0.100</td>
<td>.752</td>
</tr>
<tr>
<td>Superior honesty × Communication</td>
<td>-2.110</td>
<td>0.922</td>
<td>5.243</td>
<td>.022</td>
</tr>
<tr>
<td>Constant</td>
<td>0.000</td>
<td>0.447</td>
<td>0.000</td>
<td>1</td>
</tr>
<tr>
<td><strong>Panel B: Logistic regression – Simple effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superior honesty is high (Superior honesty = 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>-1.910</td>
<td>0.669</td>
<td>8.153</td>
<td>.004</td>
</tr>
<tr>
<td>Residual</td>
<td>0.629</td>
<td>0.438</td>
<td>2.062</td>
<td>.151</td>
</tr>
<tr>
<td>Superior honesty is low (Superior honesty = 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>0.201</td>
<td>0.634</td>
<td>0.100</td>
<td>.752</td>
</tr>
<tr>
<td>Residual</td>
<td>0.000</td>
<td>0.447</td>
<td>0.000</td>
<td>1</td>
</tr>
<tr>
<td>Supervisory behavioral integrity condition (Communication = 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superior honesty</td>
<td>-1.482</td>
<td>0.676</td>
<td>4.797</td>
<td>.029</td>
</tr>
<tr>
<td>Residual</td>
<td>0.201</td>
<td>0.449</td>
<td>0.199</td>
<td>.655</td>
</tr>
<tr>
<td>Supervisory behavioral honesty condition (Communication = 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superior honesty</td>
<td>0.629</td>
<td>0.676</td>
<td>1.009</td>
<td>.315</td>
</tr>
<tr>
<td>Residual</td>
<td>0.000</td>
<td>0.447</td>
<td>0.000</td>
<td>1</td>
</tr>
</tbody>
</table>

*The likelihood of the subordinate preferring the superior to over-report* is measured by the frequency that the subordinates select “b” as the response to the following question in the post-experimental questionnaire: “Which of the following did you prefer happening? a. The division manager reports exactly his or her actual performance. b. The division manager reports higher than his or her actual performance. c. I was indifferent whether the division manager reports exactly or reports higher than his or her actual performance.”

*b* Superior honesty is dichotomous. It equals 0 when the superior over-reports his or her actual performance in the decoding task and equals 1 when the superior honestly reports his or her actual performance in the decoding task.

*c* Communication is dichotomous. It equals 0 for the supervisory behavioral honesty condition and equals 1 for the supervisory behavioral integrity condition. In the supervisory behavioral integrity condition, the subordinates receive the superior’s communication of the honesty value before the performing the capital budgeting task. In the supervisory behavioral honesty
condition, the subordinates receive no communication from the superior about the honesty value before the capital budgeting task.