In Search of Organizational Alignment Using a 360-Degree Assessment System: A Field Experiment in a Retail Chain

Carolyn Deller
The Wharton School
University of Pennsylvania

Susanna Gallani
Harvard Business School

Tatiana Sandino
Harvard Business School

May 2019

Abstract:

We analyze the effects of a field experiment introducing a values-based 360-degree assessment system at an Indian retailer. The retail chain's director intended to encourage store managers, who were rewarded based on high-powered incentives linked to financial results, to not only pursue values related to short-term goals, but also values capturing the organization's long-term goals. On average, the system led to increases in effort, but not necessarily as intended: we find improvements in performance associated with pre-existing short-term monetary incentives, but do not find any significant effects on nonfinancial performance dimensions linked to values related to long-term goals. We integrate into our analysis qualitative information from interviews, which suggested organizational factors that likely influenced the effectiveness of the system. Further tests examining the moderating effects of those factors show that the 360-degree system had more favorable effects for stores with higher promotion opportunities, with greater ability to pursue organizational values (measured based on the store manager's tenure), and receiving greater support (measured based on the store's availability of inventory and the store staff's on-time payments). Our findings highlight important factors for successful implementations of values-based 360-degree systems as complements to explicit incentives. Finally, we share some lessons learned with respect to performing field experiments.

Keywords: 360-degree assessments, values, implicit incentives, field experiment, performance evaluation.
JEL codes: M12, M40
Data availability: The data used in this project was provided to the authors on a proprietary basis and cannot be shared without express consent of the organization's legal representatives.

We thank Markus Arnold, Tony Davila, John Harry Evans, Mario Schabus, and participants at the 2018 AAA Annual Meeting, 2018 Emerging Management Accounting Scholars Symposium, 2018 Global Management Accounting Research Symposium, 2018 Management Accounting Section Midyear Meeting, and the Harvard Business School 2017 Brown Bag Series for their useful comments and suggestions. We thank Kyle Thomas for his excellent assistance at the research site, as well as in the data collection and analyses, Mayuresh Kumar and Gunjan Kapil for their research assistance at the research site, Trang Nguyen for research assistance in the later stages of the project, and Andrew Marder and Xiang Ao for helpful advice on econometric issues. We also thank the mobile phone retail company where we conducted our study for collaborating with us on this field experiment and providing us with access to data. All errors are our own.

1. INTRODUCTION

In this paper, we study the implementation of a *values-based 360-degree performance assessment system*, that is, one designed to communicate and reinforce an organization's values. We do so in a setting in which employees receive high-powered incentives explicitly linked to financial results (hereafter, high-powered explicit incentives). High-powered explicit incentives can motivate employees to behave entrepreneurially, but can also lead to an excessive focus on short-term, individual-wealth-maximizing activities at the expense of values associated with long-term organizational goals (Holmstrom and Milgrom 1991; Baker, Gibbons, and Murphy 1994). Many organizations use performance assessment systems promoting not only short-term results but also long-term organizational values. In a WorldatWork survey including 254 human resource managers from a diverse set of large firms, 72% of the respondents indicated that their company's performance evaluation process reflected organizational values to a significant extent.[1] This percentage was even higher (80%) among respondents indicating that their company's performance evaluations incorporated multiple raters (48% of the survey respondents). We study the efficacy with which a 360-degree system promoting corporate values led to changes in performance and behavior that were both consistent with those values and actionable within a short timeframe. We also examine the conditions under which this system led to better results.

360-degree performance assessment systems are designed to provide a complete evaluation from multiple appraisers: oneself and one's subordinates, supervisors, peers, customers, and so on (London and Smither 1995). 360-degree systems are typically used to evaluate not only

[1] This is the percentage of respondents indicating that the extent to which their company's performance evaluation process reflected guiding principles/corporate values was 5 or greater on a Likert scale ranging from 1 ("not at all") to 7 ("to a large extent"). WorldatWork conducted this survey in collaboration with several researchers cited in the reference list (WorldatWork 2019). The survey included organizations from multiple industries including a large number of employees (on average, between 2,500-5,000 employees).

performance, but also behaviors—leadership, communication, participation, and teamwork—that are otherwise difficult to measure (London and Beatty 1993). In fact, several scholars have emphasized the role of 360-degree systems in shaping organizational culture and introducing or reinforcing its associated values (London and Beatty 1993; London and Smither 1995).

Studies have examined the performance effects of 360-degree systems by comparing initial ratings to subsequent ratings (e.g., Smither, London, and Reilly 2005). Our study contributes to this line of research by: (a) examining the use of a 360-degree system in a common but previously unexamined setting; that is, in an organization with high-powered explicit incentive contracts implementing a 360-degree system not linked to rewards to reinforce organizational values; (b) uncovering and testing conditions under which 360-degree systems are more or less likely to be effective (a gap in the literature identified by scholars such as Smither, London, and Reilly 2005); and (c) examining the effects of a 360-degree system on more objective measures than the *perceptions* of performance captured by the ratings of the 360-degree system.

A values-based 360-degree performance assessment system communicates what behaviors are valued in the organization. This is likely to provide implicit incentives, especially to employees interested in pursuing a career within the organization. For employees naturally aligned with company values, such systems could reinforce intrinsic motivation and encourage collaboration with others in pursuit of the organization's success (van Knippenberg 2000; Akerlof and Kranton 2005). Conversely, in the presence of high-powered explicit incentives, values that are included in a 360-degree system but not linked to pay may be ignored. Studying the effectiveness of a values-based 360-degree system in such a context is important because many organizations provide high-powered explicit incentive contracts—allowing employees to pursue personal financial goals with

significant freedom—but wish to encourage employees to pursue their short-term financial success without compromising the company's values.

For this study, we partnered with a growing retail chain in a major city in India that had traditionally compensated store employees with high-powered explicit incentives based on financial performance. While congruent with some of the firm's overall values—specifically those related to working hard—these incentives had also introduced behaviors (such as deceiving customers and gaming the system) that were detrimental to other firm values aligned with the organization's long–term goals. When the company was sufficiently small, the managing director could personally monitor and shape the behaviors of employees through direct informal communication of her vision and values. However, as the company scaled up, she needed a more formal system to communicate and uphold the company's vision and values.

Management therefore introduced a values-based 360-degree assessment system in tandem with a formalized vision and core values. The 360-degree system was centered on the store manager and was not tied to any new monetary incentives. Appraisals were based on surveys evaluating store managers, completed by the store managers themselves, their staff, and their supervisors, and on a select number of questions from a customer satisfaction survey. The survey questions filled by supervisors and store team members were arranged by the company's core values, capturing the behaviors that senior management wanted. The goal was to communicate those values and provide feedback and coaching to store managers, who were expected to lead by example. Existing monetary incentives were kept.

To test its effectiveness, the 360-degree system (as well as the core values and vision) was introduced in a randomly selected treatment group of half of the chain's stores. We compare the performance of treated stores with that of the control stores on various dimensions before and after

the introduction of the 360-degree system, but *before* any feedback was provided to store managers at treated stores.[4] Thus, rather than documenting the feedback effects of a 360-degree values-based system, we examine its effects on the behavior of employees learning about, and expecting to be evaluated on, the company's core values. We focus our analysis on company–values–related metrics capturing financial results, customer-service, and honesty that could be influenced by the store staff within a short timeframe. We supplement our quantitative analyses with qualitative insights gained from interviews conducted after the implementation.

We find that the 360-degree system positively impacted measures of financial performance rewarded under the existing incentive scheme, relative to a control group; specifically, sales and gross profits were 23% and 30% higher, respectively, in treatment stores. However, we find no significant effects attributable to the intervention on customer service and honesty measures associated with values affecting long-term goals.[5]

Our qualitative interviews helped us to identify conditions that may have made the 360-degree system more or less effective across stores, including (a) heterogeneity in promotion opportunities that may have dampened implicit incentives at some stores; (b) low recall and understanding of the core values and an interpretation of the initiative as an encouragement to work harder; (c) perceived inability to act according to some of the core values; and (d) perceptions by some that they lacked support (some referred to inventory shortages and not being paid on time).

Based on these qualitative insights, we performed supplemental analyses to examine whether the conditions highlighted affected the impact that the 360-degree system had. We find that, in

[4] We provide justification for this design choice in section 3.3.

[5] Note that a favorable effect on sales and gross profits without a deterioration in measures associated with long-term goals and values (measures capturing customer service, honesty, etc.) should be viewed positively. It suggests that the system led to an increase in effort rather than to short-term improvements achieved through cutting corners. In section 4.2.2. we discuss the possibility that the lack of results on some of the measures considered may be partially explained by the power of our analyses.

stores with greater opportunities for promotion or where the employees' ability to implement the core values was higher (proxied by the store manager's tenure), the intervention was associated with an increase in their net promoter score (a proxy for good customer service). We also find that the effectiveness of the system depended on the two dimensions of managerial support uncovered by the interviews: inventory shortages and on-time payments. We find that stores with a greater number of days of sales in inventory (DSI) did a better job bundling products (i.e., providing customized solutions to enhance customer value) compared to stores with lower DSI. We also find that stores where employees were paid later than at other nearby stores reported a decline in net promoter score following the implementation of the 360-degree system (possibly due to their perceiving the company's expectations to behave according to values to be unreasonable). The latter two findings suggest that a values-based 360-degree system is unlikely to motivate employees to incorporate core values in everyday operations, if those employees lack support.

Lastly, we share some lessons that might be helpful to researchers designing their own field experiments. For instance, we reflect on the trade-off between the strength of treatment and the risk of potential contamination, the value of conducting qualitative interviews, and the need to be cognizant of cross-country cultural differences.

We offer several contributions to the literature and to the practice of management accounting. First, as explained earlier, we extend the academic knowledge on 360-degree performance assessment systems. Second, we contribute to the literature on mechanisms to improve performance without explicit monetary incentives. We examine a values-based 360-degree system as a particular mechanism in our setting, finding a positive incremental effect on financial performance in the absence of additional tangible rewards. Prior work has examined other mechanisms unrelated to monetary incentives that may motivate employees to improve

performance, such as transparent performance feedback (Bernstein and Li 2017), relative performance information (Blanes i Vidal and Nossol 2011), and recognition (Bradler, Dur, Neckermann, and Non 2016, Gallani 2019).

Third, we contribute to the literature examining the use of multiple performance measures (e.g., Ittner, Larcker, and Randall 2003; Campbell 2008; Hall 2008), here in the context of a 360-degree assessment system. Our results are consistent with the conjecture that the introduction of new value-based measures and the extensiveness of the 360-degree survey may cause employees to focus on the subset of measures associated with short-term, already rewarded, and well-understood behaviors at the expense of measures associated with values capturing long-term behaviors only indirectly related to financial incentives. We shed light on factors that may be important when holding employees accountable for more: highlighting implicit incentives, providing adequate training, and offering managerial support.

Finally, our paper adds to the accounting literature on field-based research (e.g., Bloomfield, Nelson, and Soltes 2016; Deller 2019). We share various tips for conducting field experiments, expanding upon those originally appearing in List (2011) and reiterated in Floyd and List (2016).

The rest of the paper is organized as follows: Section 2 reviews the literature. Section 3 describes our field setting and field experiment. Section 4 presents our research design, empirical tests, and results. Section 5 contains qualitative insights from interviews and supplementary analyses. Section 6 speaks to lessons learned during this field experiment and Section 7 concludes.

2. LITERATURE REVIEW

Organizations that motivate employees with explicit incentive contracts often use subjective performance assessments to overcome the limitation that objective performance measures (whether financial or non-financial) neither capture nor promote all behaviors needed to create

value (Baker et al. 1994; Gibbs et al. 2004). While these subjective assessments are often performed solely by the supervisor, many organizations use 360-degree performance assessment systems combining closed- and open-ended questions for a more complete view of performance on important dimensions that the supervisor may not be able to observe directly, such as teamwork, honesty, or other behaviors reflecting a company's values (WorldatWork 2019). Moreover, 360-degree systems can increase employee awareness of, and alignment with, corporate values (London and Beatty 1993), and help employees link those values to the diverse aspects of their day-to-day work.

2.1 Effects of 360-degree assessment systems on performance and culture

The management literature has examined the performance effects of 360-degree systems, typically comparing the ratings received by a manager in the initial survey to subsequent ratings (e.g., Avery 2000; Smither, London, and Reilly 2005). Literature reviews have concluded that research has found only modest ratings improvements over time and not among all those appraised (Smither, London, and Reilly 2005; Atwater, Brett, and Charles 2007).[6] A challenge with this approach is that 360-degree ratings are often subject to biases: subordinates typically provide overly lenient ratings of their bosses, fearing retaliation (Smith and Fortunato 2008), and self-ratings tend to be even more lenient and less reliable (e.g., Smither et al. 1995; Atwater et al. 2007). The broader literature on subjective performance evaluations by supervisors typically finds centrality bias (which takes place when supervisors give subordinates similar ratings rather than distinguishing good from bad performers) and leniency bias (Prendergast 1999; Bol 2011). Finding

[6] Smither, London, and Reilly (2005) provide several explanations for the small documented improvements, including the crudeness of looking at average ratings at time 2 versus time 1 (the individual might have focused on improving performance related to only a few items), and raters anchoring on their initial impressions.

improvements in overly lenient ratings can be hard, not only due to low variation but also because ratings are capped at the maximum allowed (ceiling effect).

Another reason for only modest improvements in performance following 360-degree evaluations is that such systems might only work for certain types of individuals or organizations. Differences in personality (such as attitudes towards feedback) and in perceived competence can affect the feedback's effectiveness (e.g., Atwater and Brett 2005; Smither, London, and Richmond 2005). Organizational context could also play a role: in a utility company that implemented 360-degree feedback, employees indicated that they tried harder to improve when they saw greater supervisor and organizational support (Hazucha, Hezlett, and Schneider 1993).

While the empirical literature has paid little attention to the use of 360-degree systems to highlight organizational values, multiple scholars as well as survey reports, have suggested such use is widespread (London and Smither 1995; WorldatWork 2019). London and Beatty (1993, p. 361) state that such a system "can call attention to important performance dimensions heretofore neglected by an organization." Bracken and Rose (2011, p. 188) say that "[a]n organization-wide 360 process that is integrated into its culture can be a powerful tool for communicating and instituting change, rapidly touching all members of the organization when new markets, strategies, values, and structures are introduced into the system."

We build on the research on 360-degree systems by examining the behavioral effects of an implementation (a) designed to state and reinforce organizational values and (b) in a setting with preexisting explicit incentives. We depart from the existing empirical research, which has focused on mid-level managers in traditional hierarchies, whose compensation presumably is largely fixed pay. Furthermore, rather than examining subsequent ratings, as in prior research, we focus on

analyzing the effects of a values-based 360-degree system on changes of more objective performance metrics aligned with company values that are actionable in the short-term.

2.2 Complementing Explicit Incentive Contracts with Subjective Assessments

The accounting and economics literature has long suggested that organizations using explicit rewards tied to financial results could improve goal alignment by adding subjective performance assessments (Baker et al. 1988; Ittner and Larcker 1998; Prendergast 1999). Financial measures have several limitations: they are transaction-oriented, backwards-looking, and unable to capture the value of many intangible assets affecting future outcomes (Kaplan and Norton 1992; Merchant and Sandino 2009). Even absent an explicit link with monetary rewards, subjective assessments are likely to give rise to implicit incentives, since employees will likely anticipate some relation between the assessments and career-related managerial decisions such as job assignment, salary revision, promotion, and firing (Gibbons and Murphy 1992; Prendergast 1999; Campbell 2008). To the extent that a 360-degree system introduces implicit incentives, it could help align employees with corporate values capturing both short-term and longer-term organizational objectives, especially those who are seeking a career within the organization. Additionally, the multi-source nature of the 360-degree system further strengthens the implicit incentive contract by providing top management with comprehensive information for career-related decisions (Prendergast 1999; Loughry and Tosi 2008).

2.3 Effects of 360-degree Values-based Assessments in a Setting with Explicit Incentives

Although a values-based 360-degree assessment system could encourage employees to exert effort with respect to *all* of the company's values, employees may focus only on a subset of values. Individuals tend to allocate more effort toward performance dimensions that are more clearly measured, that yield greater results in the short term, and that are associated with monetary

incentives (Baker, Jensen, and Murphy 1988; Holmstrom and Milgrom 1991). Faced with seemingly incompatible values, they may focus only on the activities they already know how to perform (especially absent appropriate training and supporting systems for actions related to newly emphasized values).

In sum, the effect of a values-based 360-degree system in a setting with preexisting high-powered incentives is unclear ex-ante. We examine the effects on proxies for performance dimensions corresponding to the values communicated by the 360-degree surveys. We distinguish effects on values closely associated with the financial results rewarded by high-powered explicit incentives from effects on values associated with long-term goals unrelated to monetary rewards. We also seek to understand conditions that could enhance the effectiveness of a values-based 360-degree system on improving alignment with organizational values.

3. RESEARCH SETTING AND FIELD EXPERIMENT

Our research site is a mobile phone retail chain in one of India's main cities (hereafter RETAILER). A typical store has a manager,[7] a cashier, and a staff of promoters representing various brands (e.g., Samsung, Nokia, and Vodafone) whose products and/or services are offered. To emulate the entrepreneurial spirit, sense of ownership, and incentives of local mom-and-pop stores—the chain's main competitors—the managers and cashiers are compensated mostly with sales commissions. The promoters are paid by the brands they represent; they are not RETAILER's employees, though they can sometimes participate in some of its sales incentive plans.

RETAILER seeks to differentiate itself from mom-and-pop stores by (a) offering wider selection, (b) bundling products to enhance customers' perceptions of value (i.e., offering custom solutions to fulfill not only the customers' need for smart phones, but also for credit, insurance,

[7] All store managers were male and typically in their 20s.

complementary accessories, promotional items, talk time, etc.), and (c) providing trustworthy service. The managing director communicates this value proposition to the store staff through personal visits to the stores, weekly meetings at headquarters, and communications via email and the company's information system. She also strongly enforces the focus on trustworthy service by penalizing—sometimes firing—employees for unethical behavior such as theft and misleading customers.

While a reliance on the managing director's personal interactions with store teams had helped foster a strong company culture, this was not suited to RETAILER's ambitions for expansion. Furthermore, the managing director sought to encourage store teams, particularly managers, to focus not only on short-term financial performance (already strongly incentivized by the compensation structure), but also on long-term behaviors needed to build a consistent and profitable brand; for example, building long-term customer relations, providing feedback to team members, and not lowering prices just to make a sale. The managing director decided to implement a values-based 360-degree assessment system to promote the values that she hoped would shape desired behaviors.

3.1 Store Managers and the Values-based 360-degree System

At the time of the study, RETAILER's store managers were incentivized to behave as owners of the stores that they managed. They could earn generous sales commissions (at higher commission rates for more profitable items) but were also held fully accountable for missing items and for selling items at a price below the dealer's price. On average, store managers' variable pay was roughly 140% of their salary, and the standard deviation of their pay was as large as their salary.[8]

[8] These calculations are based on data shared by the company relating to store manager payments in July of 2013. The structure of the store managers' compensation at that time was similar to that during our sample period.

As in most retail chains (Arnold, Palmatier, Grewal and Sharma 2009), RETAILER's store managers played many roles and were considered key drivers of store success: they led their store teams, were responsible for forming good, long-term customer relationships, and communicated inventory and staffing needs to headquarters. They were accountable for the ongoing success of their stores and were expected to model behaviors conducive to the chain's success.

A 360-degree system makes it possible to measure performance with respect to all these roles. Since store staff were best placed to observe their manager in day-to-day operations, their assessments could arguably make for a better performance measurement system than one limited to assessments by the manager's supervisor. As London and Beatty (1993, p. 360) note, "Subordinates … may have more complete and accurate information about many leadership behaviors than supervisors have."

By implementing a values-based 360-degree assessment system, RETAILER's management sought not only to formalize core values and their associated behaviors, but also to gain a complete picture (including insights from open-ended questions) of how each store manager was living those values, so as to provide feedback and coaching. The 360-degree surveys were designed to collect information about each store manager from the store's cashier and brand promoters, the manager's supervisor, the customers, and the manager himself.

The system was intended to be developmental and was presented to employees as a tool to help them grow and increase their chances of promotion (thus, it provided implicit incentives). For the brand promoters, a "promotion" meant being hired as a cashier or store manager. Cashiers were often promoted to store manager and store managers could either be reassigned to more profitable stores (where they could earn significantly higher incentives) or be promoted to "store manager coach," to assist nearby stores.

The hope was that with management (a) formally communicating core values, (b) periodically asking store teams and supervisors to consider those values while assessing their store manager's behavior (or, for the store manager, his own), (c) providing feedback to managers, and (d) making it clear that those values would be considered for promotion decisions, the teams would internalize both the values that related to achieving short-term financial results, as well as those associated with behaviors that would contribute to building a positive company brand in the long run. This, in turn, would enable more delegation and less direct monitoring by the managing director (for instance, if store teams could be trusted to behave in the interest of the company's long-term success) and greater work satisfaction and motivation for store teams (Van den Steen 2010).

3.2 Surveys Used as Input to the Values-based 360-degree System

The surveys associated with the 360-degree system asked each respondent (the store manager, store members, and the supervisor) to assess the manager on various behaviors, organized by the four core values of the firm: (a) "We gain control of our own career by working hard every day and reaching out for support"; (b) "We give more value"; (c) "We are honest and ethical"; and (d) "We are caring and respectful." Respondents were also asked where the store manager was doing a good job and where he could do better. The survey instrument is shown in Appendix 1.

One customer per store was randomly selected each day for a telephone survey. They were asked about aspects of the service they received (such as the staff's knowledge and politeness) and how likely they were (on a scale of 0 to 10) to recommend RETAILER to a friend. From this question, a store's *Net Promoter Score* (hereafter NPS) can be calculated as the percentage of "promoters" (respondents giving a 9 or 10) minus the percentage of "detractors" (respondents giving a score of 0 through 6).[9] The NPS is a popular metric for customer experience.

[9] See www.netpromoter.com.

3.3 The Field Experiment

Since the managing director was interested in understanding the effectiveness of a values-based 360-degree assessment system (developed and implemented via extensive consultation with the research team), she readily agreed to introduce it as a field experiment, implementing the system in approximately half the stores.[10] While she was enthusiastic, it was certainly not a forgone conclusion that the system would drive behaviors aligned with values capturing long-term organizational goals. The system wouldn't work, for example, if employees ignored it because it was not directly linked to high-powered explicit incentives, if they did not understand or embrace the organization's values, if biased responses made the feedback to store managers less meaningful, or if managers expected their subordinates to inflate the ratings and therefore saw no reason to change their own behavior.

Store selection was randomized. However, we grouped stores in "blocks" if they were close enough to each other that contamination effects would be a concern if some participated and others did not. If any store in a block was randomly selected, all stores in the block were then selected.[11] Participants in the selected stores were advised that RETAILER was piloting the system only in certain stores and asked not to discuss it outside their store team.

The system was launched with an inspiring presentation and interactive session led by the managing director. The session was held twice, at the end of March 2015 and at the end of April 2015, to include all the selected stores and to help some stores that had difficulties accessing the 360-degree surveys online.[12] The presentation had two parts. The first introduced store teams both

[10] This opportunity to collaborate with RETAILER arose due to a preexisting relationship between members of the research team and the managing director, who had met at a retailing conference.
[11] Results of parallel trends tests in the pre-period for the treatment and control groups suggest the two groups were experiencing similar trends.
[12] In our empirical analyses we drop all weeks between the first session and the time when the surveys related to the second session were completed by all store team members.

to the company's competitive strategy and to its newly formalized vision statement and core values (included in Appendix 2), emphasizing the importance of the role of the store managers and store teams to accomplish these values. During the second part, the managing director explained that a 360-degree system was to be implemented at the stores in attendance in order to gain a comprehensive understanding of the support the store manager provided and his commitment to the core values. Attendees were advised that the aggregated survey responses (confidentiality of individual responses was assured) would be used to provide feedback and coaching to store managers. Attendees were then asked to complete the performance appraisal survey (Appendix 1) in a computer lab that was set up for this purpose.[13]

By the end of the second session, 20 of RETAILER's stores had participated in the launch of the 360-degree system. The feedback sessions were held about three months after the second session. By this time, a couple of treated store managers had moved to control stores (we speak to this further in footnote 16) and a couple of feedback sessions that should have taken place did not, reducing our available sample for the period post the feedback sessions. Further complicating matters, there was some variation in how these feedback sessions were conducted (e.g., whether or not the managing director was present). Hence, we end our post-period right before the feedback sessions.[14] This unintendedly allowed us to examine the motivational effects of the 360-degree system implementation, independent of any feedback effects.

---

[13] As shown in Appendix 1, this survey included 48 items. The number of items on survey instruments for upward feedback (in which subordinates provide feedback to their superior) and 360-degree feedback systems can vary widely. For instance, the survey in Hazucha, Hezlett, and Schneider's (1993) study had 122 items, while the survey in Walker and Smither's (1999) study had 29 items.

[14] The absence of feedback in the post-period that we study may have affected the results that we document, but research suggests this is not a significant issue. Smither, London, Vasilopoulos, Reilly, Millsap and Salvemini (1995) find that managers who received individualized feedback in an upward feedback system were no more likely to improve their performance than managers who did not. (In their setting, managers with fewer than three subordinates received only an aggregate organizational report to protect the subordinates' anonymity.) Using the same managers as in Smither et al. (1995) but studying them longer, Reilly, Smither, and Vasilopoulos (1996) also find that the performance improvements they identify over four administrations of the feedback system (mostly concentrated early

4. RESEARCH DESIGN AND EMPIRICAL TESTS

While prior research has studied the performance effects of 360-degree systems by comparing initial ratings with subsequent ratings, we do not study a change in ratings because 360-degree surveys were completed only once during our sample period. However, studying a change in ratings would likely have been relatively uninformative since the surveys completed by the store managers and the store team members (cashier and promoters) were extremely favorable; store managers rated themselves an average of 4.8 (out of 5) across all survey questions, while team members gave them an average of 4.4. Their direct supervisors, however, gave them an average of 3.8, and their customers rated the stores with an average NPS of 33% (which seemed acceptable, compared to average NPS scores of 27% in India and 49% in the United States (Kelly 2019)).

Our interpretation of the highly favorable ratings awarded by the store teams, partly informed by conversations with the managing director, is that it was due to several factors, including store managers wanting to paint themselves in the most favorable light; the hierarchical nature of Indian society, leading team members to be hesitant to reveal anything negative about their manager; the team members' desire to receive continuous support from their manager; and perhaps influence activities whereby the store managers asked their team members to give them high ratings.[15]

---

in the system) are unrelated to the number of times managers actually received individualized feedback (which varied from zero to three). They conclude: "Our results suggest that the continued administration of an upward feedback program can result in sustained change over a fairly long period of time and actually receiving feedback may be less important than the exposure to the valued behaviors" (p. 599).

[15] Note that despite being Indian herself and spending most of her life in India, it was only in hindsight once the ratings were compiled and summarized that the managing director identified factors that could have contributed to the highly favorable ratings. Before the intervention, the managing director did not expect that the store team members would inflate the ratings so much since (a) the promoters are employed by the supplier brands, hence, they are not direct subordinates of the store managers, (b) team members had an incentive to disclose when their store managers were not supportive, since their compensation and employment depends on the store manager's support (in the words of the managing director, "[Suppliers] are ruthless, if you don't achieve your target in one month, they will sack you." Note that several organizations in India, including Havells, Hindustan Unilever, State Bank of India, Infosys, Mindtree, and the prime minister's office, have disclosed their use of 360-degree systems in recent years (Financial Express Online 2016; Bhattacharya 2018).

We do not study a change in ratings, but instead test the effects of the intervention on performance measures that were readily available (or could be easily constructed) from the organization's existing information system.[16] Our approach allows us to examine the effects of the intervention on measures of performance that are (a) related to the core values introduced with the 360-degree system, (b) responsive to employee actions in the short-term, (c) more objectively measured than those used in prior studies, and (d) less subject to leniency and centrality bias. Furthermore, the availability of a treatment and a control group allows us to better assess causal relations relative to prior studies relying predominantly on initial and subsequent performance assessments under the system itself. Our empirical analyses, described in section 4.1 and 4.2, explore the performance effects of the implementation of a values-based 360-degree system, which included the formalization and communication of the company's vision and values.[17]

4.1 Research Design

We examine how treated stores performed vis-à-vis control stores on three dimensions capturing behaviors related to the core values assessed through the 360-degree system: (1) performance on financial metrics included in the existing explicit incentive system, associated with the first core value of working hard; (2) performance not related to explicit incentives, associated with the second core value of providing value to customers; and (3) performance associated with the third core value of being honest and ethical. (Appendix 2 lists the measures we use to capture these dimensions of performance and their corresponding core values). No suitable objective measures were available to evaluate performance on the fourth core value, "*We are caring and*

[16] All of the measures we examine pertain to information that had historically been recorded with the exception of the customer surveys, which began shortly before the introduction of the 360-degree feedback system and were the result of our collaboration with the company.

[17] In our setting, we cannot disentangle the effects of communicating the company's vision and values from the effect of introducing them through a 360-degree system. We leave this for future research.

respectful." Therefore, we excluded this dimension of performance from our analyses. All measures were discussed with the managing director, who approved them as appropriate proxies for the underlying aspects of performance she intended to emphasize with the 360-degree system.

To capture performance metrics already included in the preexisting monetary incentive system and in line with the core value, "*We gain control of our own career by working hard every day and reaching out for support,"* we define *Ln(Sales)* and *Ln(Gross Profit)* as the natural logarithms of store-level sales and of gross profit, respectively. Metrics aligned with the core value "*We give more value*" and not explicitly rewarded with monetary incentives include the net promoter score (*NPS*) and the percentage of invoices including promotion-related bundles (*% Invoices with Bundles*), both captured at the store-week level. With respect to the core value "*We are honest and ethical,*" the variable *Abnormal Customer Returns* measures the abnormal incidence of customer returns in the first week of every month relative to other weeks in the month (a proxy for gaming behaviors, whereby store teams seeking to increase their monthly commissions sell additional units at the end of the month that are then returned at the beginning of the next month).[18]

Our sample includes weekly observations for 32 stores (16 each in the treatment and control groups) spanning 22 weeks, of which 11 are prior to the intervention (pre-period) and 11 are subsequent to the week when all the store employees completing the 360-degree surveys were

[18] The company also performed periodic random audits of the correspondence between (a) inventory and cash represented in the local ledgers and (b) their physical presence in the store. Store managers were directly responsible for any unfavorable deviation and were penalized with pay deductions equivalent to the value of the missing asset. Stores were audited on average once a month. Due to low power to detect changes in this variable and because a number of stores were audited only in either the pre- or post-period, we did not include this measure in our analyses.

finally done (post-period).[19, 20] We drop any post-period observations subsequent to the departure of a treated store manager if there was no replacement during our sample period and any post-period observations in which a control store is contaminated by a treated store manager being reassigned to it. Our final sample includes 692 store-week observations. We have fewer observations for our NPS measure, since the customer surveys began only three weeks before the 360-degree system was first launched. Also, the metric related to gaming can only be estimated on a monthly basis.

We examine the effect of the intervention using the following difference-in-differences statistical model:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Post_t * Treatment_i + \beta_3 Store\ Manager\ Change_{i,t} + \beta_4 Sales\ Days_{i,t} + \beta_n (Store\ Fixed\ Effects) + \varepsilon \quad (1)$$

where the dependent variable *Performance* is substituted by each of the dependent variables described above; the indicator variable *Post* equals 1 if week (month) *t* is after the implementation of the 360-degree system, and 0 otherwise; the indicator variable *Treatment* equals 1 if the system is implemented in store *i*, and 0 otherwise;[21] the indicator variable *Store Manager Change* equals 1 if the manager of store *i* was different in week (month) *t* than at the time of the intervention, and 0 otherwise; and *Sales Days* is the number of days in the week or month (whichever corresponds

[19] Our initial sample included 39 stores. Of these, seven were dropped. One was eliminated because its manager did not complete a 360-degree survey (presumably because he was temporarily reassigned to a control store in April 2015), making it uncertain whether the store should be classified as part of the treatment sample. Another store was dropped because it opened immediately before the sample period and closed immediately after it. In the case of two stores, the store team participated only in the core values session and not in the 360-degree survey. One control store was contaminated by the reallocation of a treated store manager immediately after the intervention. One store was included in the treatment group, but the store manager did not fill out a survey. One store team identified the cashier as the (acting) store manager, but the cashier himself did not self-identify as store manager in his survey.

[20] Our pre-period includes the 11 weeks preceding the first launch to keep correspondence between the length of the pre-period and the length of the post-period, in line with Charness and Gneezy (2009).

[21] The main effect of *Treatment* does not appear in Equation (1) since it is absorbed by the store fixed effects.

to the dependent variable's unit of analysis) during which that store is open. We also include store fixed effects. All variables included in our statistical analyses are described in Appendix 3.

Table 1 summarizes descriptive statistics for the variables of interest. Sales and profitability measures exhibit significant variation across store-weeks. Despite some instances of a perfect NPS score (100%), NPS is at or below 33% for half of the sample.[22] The percentage of promotion-based bundles (*% Invoices with Bundles*) is below 34% for three-quarters of the sample, suggesting opportunities to offer greater customer value. Dysfunctional behaviors seem pervasive, further justifying the need for the intervention. *Abnormal Customer Returns* is equal to or greater than 50% for a quarter of the observations, indicating that a large number of returns happen in the first week of the month, indicative of gaming behaviors by members of the store staff. Stores operate, on average, 6.5 days per week and 28.2 days per month.[23]

----- Insert Table 1 here -----

4.2 Results of Statistical Tests

4.2.1 Univariate analyses

Table 2 reports the Pearson correlation coefficients calculated across all of our variables of interest. As expected, there is a very high correlation between our two financial measures of performance related to explicit incentives (*Ln(Sales)* and *Ln(Gross Profit)*). These metrics are also positively correlated with cross-selling (*% Invoices with Bundles*). On the contrary, sales, profitability, and customer satisfaction (proxied by NPS) are negatively correlated with *Abnormal Customer Returns,* suggesting that financially healthy stores are less likely to engage in

[22] In the analysis of NPS, we eliminate two stores for which we had only post-period observations. We also calculated alternative versions of the NPS variable in line with Casas-Arce, Lourenço, and Martínez-Jerez (2017) and estimated all statistical models with these alternative measures, obtaining equivalent results.

[23] Variation in the number of sales days for the same time period (week or month) across stores is explained by differences in local market dynamics (busier and wealthier neighborhoods might expect stores to be open on weekends), or demographics (e.g., stores in Muslim neighborhoods are likely to close on Muslim holidays).

dysfunctional behaviors such as gaming. Our overall assessment of the correlations among our predictors is that the risk of collinear relations in the definition of our statistical model is not material.[24]

----- Insert Table 2 here -----

We report the results of our univariate tests in Table 3. We perform paired t-tests comparing mean performance of the pre- and post-periods (reported in the columns of Table 3) and of the treatment and control group stores (reported in the rows). The bottom right corner provides a univariate difference-in-differences analysis (comparing the pre-post differences in values of the dependent variables of the treatment versus the control groups). While we refrain from drawing conclusions as to the effects of the intervention, these results provide some relevant insights.

First, despite our random assignment of stores to the treatment and control conditions, we notice greater pre-intervention sales and profits for the treatment group, likely a result of our small sample size and the need to assign stores located close to one another to the same group (treatment or control). To account for any underlying differences between our treatment and control stores, we include store fixed effects in our regressions. Second, we shed light on several interesting trends with respect to our variables of interest. Univariate tests with respect to changes in dimensions of performance that are not rewarded in the preexisting incentive system yield contrasting results: one of our customer-related variables (*NPS*) improves significantly in the post-period, while the other (*% Invoices with Bundles*) deteriorates. However, we cannot conclude that these changes are necessarily a consequence of the 360-degree system, because we observe similar trends in both treated and control stores. Regarding the intervention's effects on counterproductive

[24] We corroborate our conclusion by running several tests of collinearity in the estimation of the coefficients in our model. For example, VIFs are all below 2.

behaviors, we find a decrease in *Abnormal Customer Returns* for both treated and control stores, but no significant differences between these changes.

----- Insert Table 3 here -----

4.2.2 Multivariate analyses

Table 4 summarizes our multivariate analyses. We perform separate estimations of Model (1) for each of our dependent variables of interest, using OLS regressions. To account for the fact that we observe repeated measures of performance for each store in our sample, all our estimations include store fixed effects (which serve as a control for the store's pre-intervention values of the outcome variables) and standard errors clustered by store.

Since Model (1) is specified using a difference-in-differences approach, our primary coefficient of interest is β_2, which is associated with the interaction term (*Post*Treatment*). β_2 is positive and significant with respect to *Ln(Sales)* (β_2=0.211, p<0.10) and *Ln(Gross Profit)* (β_2=0.260, p<0.10).[25, 26] In terms of economic significance, this suggests that the intervention was associated with 23% higher sales and 30% higher gross profits in treatment stores, relative to control stores.[27] Thus, we conclude that the introduction of the 360-degree system motivated store teams to try to increase financial performance above and beyond the effort induced by the existing incentive plan. This result is consistent with the 360-degree system having a positive effect on

[25] All our p-values are calculated based on two-tailed statistical significance.
[26] We note that the main effect of *Post* is negative and statistically significant, suggesting a general decline in sales and gross profit after April 2015. The placebo tests described in footnote 28 also document a negative main effect of *Post* on *Ln(Sales)*, suggesting that the negative main effect may be the result of seasonality in the firm's annual cycle.
[27] This economic significance may be an upper bound because, as we explain in footnote 28, we found a positive but insignificant interaction for *Post*Treatment* in a placebo test using prior-year data. We cannot completely rule out that the economic magnitude we capture is a result both of seasonal trends that may, for some reason, differentially affect treated stores (perhaps because they sell more than the control stores) and the intervention's effects.

measures of performance previously rewarded with monetary incentives by increasing the salience of "*Working hard every day*" and/or introducing implicit incentives. [28, 29]

Contrary to expectations, we find no significant differences between treated and control stores in the post-implementation period with respect to customer service and honesty measures of performance (*NPS, % Invoices with Bundles,* or *Abnormal Customer Returns*). An objective of the 360-degree system was to foster store managers' effort toward organizational values focused on the firm's long-term sustainability. Our results, however, do not provide evidence of a significant change in that direction. Our findings may be interpreted in line with prior research on multitasking environments, whereby employees might react to the introduction of multiple measures of performance by focusing on those activities that are already well understood, more clearly and precisely measured, more sensitive to effort, and more directly linked to monetary rewards (Baker, Jensen, and Murphy 1988; Holmstrom and Milgrom 1991; Ittner and Larcker 1998; Dikolli and Sedatole 2007; Tayler 2010). Qualitative information obtained from interviews provides additional

[28] Untabulated analyses show that our results are robust to the inclusion in the sample of the store (originally excluded from the dataset) that opened immediately before our sample period and closed immediately after it. Additional untabulated analyses show results that are comparable in size but their significance is reduced when including time fixed effects, most likely due to lack of power: the coefficient on *Post*Treatment* for the sales regressions becomes 0.20 (t=1.63; p = 0.113) when including week dummies and 0.20 (t=1.65; p = 0.109) when including month dummies and, for the gross profit regressions, becomes 0.23 (t=1.66; p=0.108) when including week dummies and 0.23 (t=1.67; p = 0.104) when including month dummies.

[29] To test the robustness of our results, we perform several placebo tests. Because of the high correlation between sales and gross profits, we focus our placebo tests on the estimation of the model predicting *Ln(Sales)*. First, we re-randomize the stores in our sample so that 50% of the stores originally in the treatment (control) group are artificially reclassified into the control (treatment) group. As expected, estimating Model (1) using the re-randomized sample yields a insignificant coefficient associated with the interaction term (t = 0.60; p = 0.553). We also estimate a simplified version of Model (1) (we exclude the store manager change variable) using data for the same sample of stores and for the same weeks in the year prior to the intervention (2014), assuming that the intervention occurred in 2014. The estimation yields a positive but non-significant coefficient associated with the interaction term (t = 1.33; p = 0.193). Running the same simplified regression on our sample (2015 data) continues to yield a significant coefficient (t = 1.73; p = 0.09). We note that the regression estimated with 2014 data yields a negative and significant coefficient associated with the main effect of *Post*, suggesting that sales might be subject to seasonal trends. Finally, we estimate the full Model (1), including lagged sales (i.e., sales corresponding to the same week in 2014) as a predictor. This specification, which includes store and market characteristics (time-invariant in our main tests) and excludes store fixed effects, yields a positive and significant coefficient for the interaction term (t = 2.24; p = 0.03) and we find results equivalent to those of our main estimation.

insights, described in Section 5, into other possible causes of the 360-degree system having no discernible impact or a differential impact across stores on customer service or honesty measures. Additionally, given our small sample size, some of the results may not have been captured by our estimations due to low statistical power. We discuss potential power issues and their impact on our results in Appendix 6.

Taken together, our empirical tests depict a somewhat puzzling result. The intent of a values-based 360-degree assessment system was to promote behaviors conducive to both short-term results and long-term organizational success. The intervention did indeed incentivize greater effort, but not necessarily as intended: it only impacted dimensions of performance that were already rewarded by the incentive system. At the same time, we note how the favorable effect documented with respect to the measures of financial performance did not come *at the expense* of the performance aspects related to long-term sustainability, as we do not find any significant deterioration in the productive measures capturing customer service that may lead to future business and no increase in gaming behaviors.

----- Insert Table 4 here -----

5. INTERVIEWS AND SUPPLEMENTARY ANALYSES

In this section, we discuss follow-up interviews we conducted to better understand our results and supplementary analyses we ran to explore conditions driving the effectiveness of the values-based 360-degree system.

In late May and early June 2015 (that is, a little over a month after the system launch), we asked an assistant in India (identified by the managing director) to conduct follow-up interviews on our behalf to gauge the sentiment of the employees with respect to the 360-degree system. Fourteen store staff members (two store managers, three cashiers, and nine promoters) from five

stores randomly selected from the treated stores were interviewed using a structured interview questionnaire (see Appendix 4).[30]

Descriptive evidence gleaned from interviews indicates that the staff members viewed both the session launching the 360-degree system and the completion of the related surveys positively. They expected the system to yield several beneficial effects including enhancing transparency, motivating employees, improving the store environment and teamwork, facilitating support from senior management, and developing employees. They understood that the system involved obtaining information about the store manager performance and some respondents mentioned that the purpose of the system was to motivate the store manager and/or help him to grow/improve.

Despite the positive perceptions of the system, very few interviewees said that they could recall the core values. Those that said they could recall them provided only partial descriptions of the values:[31] an interviewee recalled one core value correctly, and not the others; another interviewee recalled one core value correctly and recited a second core value that was a blend of two actual ones; and a third interviewee listed four core values, none of which were correct but were related to the core value of working hard. Of the two store managers interviewed, one recalled the core values partially, while the other did not recall them but said that he knew what they meant once the interviewer showed them to him.

[30] One of these treatment stores was excluded from our empirical analysis because the store opened immediately before and closed immediately after our sample period (as explained in Section 4.1). Furthermore, for this particular store, our records indicate that a promoter was in the process of becoming a store manager (we include that employee in the count of store managers above) right around the time of the system launch, which appeared to generate some confusion as to who the survey respondents should be considering as the store manager. Nonetheless, because of our small number of interviews, our findings in this section include the interviews with individuals from that store.

[31] Note that the initial sessions in which the 360-degree system was introduced and the related surveys completed were the only times when store employees were exposed to the new core values. To prevent contamination of the control stores, the core values were not disseminated after the launches. This feature of the rollout, which was necessary for the purposes of the field experiment, likely contributed to the employees' limited recall. Furthermore, the extensiveness of the 360-degree survey may have overwhelmed them. Our findings may also be somewhat impacted by the sample of interviewees: a few had not attended the launch session, but had completed the survey after the system was explained to them later, and only two store managers were interviewed.

Our interviews both with employees and with the managing director revealed three conditions that could have led to better or worse outcomes associated with the 360-degree system: (a) opportunities for career advancement, (b) store team's understanding of, and ability to, execute the core values, and (c) managerial support.

5.1. Condition 1: Opportunities for Career Advancement

Some of the store team members perceived that the 360-degree system could help them improve, develop, and grow within RETAILER. In one of our conversations with the managing director, she highlighted that the brand promoters were especially interested in the first core value, related to gaining control of one's own career, and how they could work towards being promoted to cashier or store manager.

Prior research suggests that individuals that have greater opportunities for advancement are more likely to exert effort on dimensions of performance that are relevant to the company even though they are not linked to monetary rewards. In a fast-food chain where promotion and demotion decisions were informed by nonfinancial metrics, Campbell (2008) finds that managers in locations with higher opportunities for promotion performed better on those nonfinancial metrics than managers in other locations.

We explore whether the effectiveness of the 360-degree system depended on the opportunities for promotion that team members had at their stores. The most attractive jobs for the promoters were the cashier and the store manager jobs (which consisted of two unique positions per store), whereas cashiers and store managers could aspire to become a store manager or a store manager coach for multiple stores, respectively. Furthermore, based on the explicit incentives in place in the organization, store team members could aspire to be transferred to a store offering greater

earnings potential. To examine whether promotion opportunities moderated the effect that the 360-degree system had on the outcomes analyzed, we estimated the following model:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2\ Promotion\ Opportunities_{i,t} + \beta_3 Post_t * Treatment_i + \beta_4 Post_t * Promotion\ Opportunities_{i,t} + \beta_5 Treatment_i * Promotion\ Opportuities_{i,t} + \beta_6 Post_t * Treatment_i * Promotion\ Opportunities_{i,t} + \beta_7 Store\ Manager\ Change_{i,t} + \beta_8 Sales\ Days_{i,t} + \beta_n(Store\ Fixed\ Effects) + \varepsilon \quad (2)$$

where *Promotion Opportunities* was measured for each store as # stores / # employees within a 1-mile radius.

Consistent with expectations, Table 5 shows that the introduction of the 360-degree system was not only associated with more favorable changes in sales and gross profits in stores with greater opportunities for promotion, but also with significant changes in the stores' NPS. We find that a standard deviation (standard deviation=0.186) increase in promotion opportunities is associated with an 18 percentage point incremental shift from detractors to promoters in stores where the 360-degree system was introduced.

----- Insert Table 5 here -----

5.2. Condition 2: Understanding of, and Ability to, Execute the Core Values

Our interviews suggested that many team members, including store managers, did not fully understand the core values. But even if they understood them, some stated that they did not know what to do to pursue those values. In an interview immediately after the launch of the 360-degree system, the managing director noted that the employees were very interested in how to create long-term relationships with their customers (related to the core value "*We give more value*"): "They are asking, 'How do we live it daily? We have too many customers that walk into our stores. So how do we build a relationship with our customers? How would you do it?'"

We explore whether the store team's understanding of, and ability to execute the core values, proxied by the store manager's tenure, moderates the effects of introducing a values-based 360-

degree assessment system. On the one hand, store managers who had been with the organization for a longer time may had had greater exposure to the company's values by working side-by-side with the managing director (especially at earlier times when the retail chain was smaller and the director could spend more time at each store). Therefore, compared to more recent hires, they may had exhibited a muted reaction to the introduction of a system geared towards raising awareness about those values. On the other hand, store managers with longer tenure might have had greater expertise in executing work according to those values, expertise which they could transfer to their sales teams. For instance, Griffith and Neely (2009), studying a large distribution firm that was introducing a Balanced Scorecard, find that only experienced managers could interpret the measures and improve performance. Similarly, in a study of a convenience store chain, Campbell et al. (2015) find that when faced with additional tasks, low-skilled employees were unable to perform. In the specific context of a 360-degree system, Atwater and Brett (2005) document better results when the workers considered themselves to be more competent.

To examine whether store manager tenure moderates the relation between the introduction of a 360-degree system and performance, we estimate the following model:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Post_t * Treatment_i + \beta_3 Post_t * Tenure_i + \beta_4 Post_t * Treatment_i * Tenure_i + \beta_5 Store\ Manager\ Change_{i,t} + \beta_6 Sales\ Days_{i,t} + \beta_n (Store\ Fixed\ Effects) + \varepsilon \quad (3)$$

where *Tenure* is the number of years of employment recorded for the store manager, computed at the time of the introduction of the 360-degree system. A positive and significant estimation of β_4 would indicate that the introduction of a values-based 360-degree assessment system does more to improve performance the longer the store manager has worked with the organization.

The estimation results are reported in Table 6. While we find no evidence of a moderating effect of tenure with respect to financial metrics already rewarded, we find that tenure moderates

the performance effects with respect to *NPS* (β_4=0.026, p<0.05). This suggests that for every year a store manager was with the company, the effect of the 360-degree system was associated with a shift of 2.6 percentage points from % of detractors to % of promoters.

----- Insert Table 6 here -----

5.3 Condition 3: Managerial Support

During the interviews, several staff members complained that they were lacking managerial support: 29% complained about salaries not being paid on time and 29% complained that they lacked support on their jobs.[33] For example, one mentioned that inventory wasn't always provided as needed. We conjecture that store managers feeling that the organization did not support them might have perceived management's request to take on additional responsibilities related to the RETAILER's core values to be unreasonable or unfair.

We examine the role that managerial support could have played on the effects of the 360-degree system. Margins for mobile phone sales are generally small and procurement of inventory requires significant investments in working capital; the devices are largely pre-paid by the retailer and risk obsolescence and damage if kept in-store too long. Management faced a constant trade-off between minimizing the stock on hand and risking that the stores may not always have what the customer wanted or enough items to sell bundled solutions. Also, occasionally, management retained cash payments related to store employees' compensation for a few days, as it tried to resolve issues such as stock missing from those particular stores.[34] We explore whether managerial support moderates the performance effects of the 360-degree system using the following model:

[33] During the interviews, however, staff team members highlighted that their concerns about lack of support did not extend to the managing director, who was generally considered to be supportive.

[34] RETAILER had a policy by which staff members were held accountable for any missing items from the inventory, as well as any cash discrepancy in the store. Payment of wages were delayed while management acted to reconcile any differences and investigated possible causes.

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Post_t * Treatment_i + \beta_3 Post_t * Managerial\ Support_i + \beta_4\ Post_t * Treatment_i * Managerial\ Support_i + \beta_5\ Store\ Manager\ Change_{i,t} + \beta_6\ Sales\ Days_{i,t} + \beta_n(Store\ Fixed\ Effects) + \varepsilon \quad (4)$$

where *Managerial Support* represents one of two indicators: *Highest DSI* or *Late Payment*. *Highest DSI* is a measure capturing the provision of inventory support, equal to 1 if the store was in the highest quartile of the distribution based on days of sales in inventory (DSI) in the pre-period, and 0 otherwise. We proxy for the availability of inventory on hand using DSI, which is calculated as the ratio of average inventory balance and the average cost of goods sold per day; it represents the number of days required to convert the stock on hand into sales in a given period. A higher DSI indicates greater availability of inventory on hand. We measure average DSI for each store along the weeks included in the pre-period.[35] We then partition the distribution of pre-period average DSI into four quartiles. Our assumption is that inventory availability might not influence store performance in a continuous manner; rather, there might be discontinuities in the relation. Since the company placed more inventory in certain stores, to use them as hubs, we assumed that those stores would be better equipped than others to improve their performance in response to the system. We identify those stores as those with the highest DSI (at the 75th percentile of the distribution).[36] Table 7 reports the estimation results when we measure managerial support based on the *Highest DSI* indicator. We find that stores with the most inventory performed better with respect to bundling products: the 360-degree system was associated with an incremental 13 percentage points in the number of invoices including bundles in treatment stores compared to control stores. We found no moderating effect on other dependent variables.

----- Insert Tables 7 and 8 here -----

[35] Our choice is informed by the possibility that changes in sales performance subsequent to the implementation of the 360-degree system might impact the DSI measure even in the absence of changes in inventory management policy.
[36] In untabulated analyses, we adopted a discontinuity at the median value of the distribution of DSI and found no significant moderating effects.

We use *Late Payment* as an additional variable capturing managerial support. This is an indicator variable equal to 1 if the team leader of the store was paid after half of the team leaders working in close stores (i.e., stores within a 1-mile radius) at least one time during the pre-period, and zero otherwise. Table 8 shows that stores where the store manager was paid late in the pre-period reacted negatively to the introduction of the values-based 360-degree system, reporting 39% lower sales, 44% lower profits and a decrease of 43 percentage points in the NPS relative to changes in other treatment stores. Unexpectedly, following the 360-degree system these stores also reported a decline in abnormal customer returns, possibly explained by disengagement even with gaming behaviors.

The results of this study were informative to the managing director, who then took steps to further promote and clarify the company's values and to improve employee support, including paying salaries on time and increasing support to store managers through coaching and systems.

6. LESSONS LEARNED

Despite the promise of field experiments as a way to achieve both randomization and realism and as a complement to laboratory studies and archival research, their use in accounting has been limited (Floyd and List 2016).[37] Field experiments are more common in economics and, drawing on his experiences conducting such studies, List (2011) offers 14 tips for executing them, presented in Appendix 5. His tips resonate with us. The commitment of the managing director to the 360-degree system, her investment in it, and her interest in understanding its effects certainly contributed to our ability to work with her to implement it as a field experiment and to obtain data and access to personnel. Although the organization's relatively small scale meant that we had low power to detect effects in some of our dependent variables (see Appendix 6), we felt that this was

[37] Recent examples include Casas-Arce, Lourenco, and Martinez-Jerez (2017) and Li and Sandino (2018).

outweighed by the potential upsides: positive change in the organization and an opportunity to document it, a stronger relationship with the organization that may pave the way for future field experiments (especially once the organization reaches a larger scale), and the opportunity to learn more about how to effectively conduct field experiments.

In the spirit of disseminating best practices and lessons learned in conducting field experiments, we build on List's (2011) tips and offer the following additional suggestions stemming from our experience, which may be especially applicable to experiments within a single organization.

A. Be mindful of the possible trade-off between the strength of the treatment and the risk of contamination.

Since all of the stores involved in our field experiment are located in one city in India, we were concerned about contamination of the control stores. One measure we took to mitigate this risk, as described in Section 5, was to prevent the dissemination of core values after the participants were exposed to them and completed the survey during the launch session (they were neither able to take a printed copy of the core values or to view the survey after completing it). The treatment stores were advised that the system was being piloted and were asked not to discuss it beyond their store. While these steps likely helped to reduce contamination, they also weakened our treatment. Were it not for concerns of contamination, the organization could have disseminated the core values and reinforced them and the 360-degree system at the weekly meetings at headquarters, through the information system, through store displays, and in other ways. Not all field experiments will involve such a trade-off, but we urge researchers to (a) consider whether contamination can occur and, if so, through what avenues (such concerns are likely to become even more pronounced with the increasing use of social media) and (b) balance this as well as possible with the strength of the experimental treatment.

B. When the underlying mechanism(s) are hard to identify or tease out empirically, consider gaining insights through interviews.

Results of field experiments sometimes raise follow-up questions. Interviews with participants in the treatment group can be helpful in revealing possible explanations for the empirical results, which could spur additional analyses (such as those using moderating factors) and/or future research designed to test propositions that arise from the interviews. Be sure to consider which participants make the most sense to interview. For our experiment, we sought a mix of perspectives by interviewing store managers, cashiers, and promoters. On reflection, however, since it was ultimately store managers who were directly treated and would drive store results, we could have concentrated our efforts on them. We only interviewed two store managers, which made it difficult to extrapolate insights to the total population of treated managers.

C. Be on the lookout for cross-country cultural differences.

We believe there is much to be gained from studying the effects of management control systems both within and outside the United States. Since the opportunity to conduct a field experiment in an organizational setting often stems from an existing relationship between a researcher and an organization, the researcher has to be willing to accept that cultural aspects of the country in which the organization operates may play a role in the effects of the experiment. While we don't see a problem with this, we do believe it is worthwhile for researchers to point out factors that they believe may have played a role. For instance, the hierarchical nature of Indian society is likely to have contributed to the lenient ratings on the 360-degree surveys. Pilot testing the surveys also revealed some ideas that got "lost in translation" into Hindi and which we subsequently corrected. Researchers who do not master the language used for some instruments in the experiment should be careful to translate back and forth using multiple high-quality translators (a practice that we found especially useful in this study).

D. Consider creating a contract of sorts with the research site.

While we discussed the purpose and benefits of a field experiment with the research site at length, we now believe that a nonbinding contract would have potentially helped avoid some of the pitfalls we encountered. Such a document could explain in detail the design features needed for a field experiment to work properly and what the research site and the researchers need to do to fulfill their ends of the bargain. Both the research site and the researchers should sign off on this document. As we noted earlier, our feedback sessions were not held until a few months after the launch of the 360-degree system. This lag was not intended, but arose due to the considerable time the organization took to compile the survey responses, prepare for the feedback sessions, and so on. Getting the organization to commit to a timeline and plan for the resources involved at each stage would likely have allowed us to examine the effects of the feedback sessions and to limit concerns associated with the system potentially "losing steam" with the employees due to the absence of timely feedback. Furthermore, reassignments of treated store managers to control stores in the post-period forced us to drop certain store-months from our sample. Such issues are more likely to arise in fast-moving, dynamic organizations like the one we studied, but having an upfront detailed agreement could have helped us preempt this type of contingency.

E. Check the covariate balance between the treatment and control group prior to running the experiment, especially in small samples.

Random assignment of the unit of analysis to treatment and control groups is designed to take care of any unobservables and should also result in covariate balance between observable variables. In smaller samples, there is a greater risk that randomization will not completely accomplish this, as we discovered when comparing differences in pre-period outcome variables between our treatment and control groups. While we don't believe this is a significant concern, having included store fixed effects in our empirical analyses, we would recommend checking the

covariate balance at the time of randomization and re-randomizing if necessary, or alternatively using a stratified randomization strategy to ensure covariate balance for key variables.

7. CONCLUSIONS

This study documents the results of a field experiment done in collaboration with a mobile phone retailer in India. The study explores the effectiveness of a values-based 360-degree performance assessment system, introduced in tandem with a formalized vision and core values in half of the retail chain's stores, as a means to improve alignment in an organization already motivating its employees via incentives tied to financial performance. The system was designed to motivate employees to balance short-term results with long-term organizational objectives through communicating organizational values. However, such a system would not work if, for instance, employees ignored it because it was not linked to high-powered explicit incentives or if they did not embrace or receive enough support to pursue the long-term goals.

We examine the effects of the introduction of the system, before any feedback was provided, on outcomes that were immediately actionable and largely controllable by employees in their day-to-day work. The intervention yielded somewhat unexpected results. On the one hand, introducing the values-based 360-degree assessment system had a positive effect on effort allocated to the pursuit of values associated with achieving greater short-term financial results. Despite an unaltered reward system, sales and profitability improved in the stores that were exposed to the 360-degree system. On the other hand, on average, the system did not fully accomplish its purpose of motivating employees to pursue not only short-term financial results but also other performance dimensions related to values associated with long-term organizational goals. Insights obtained from store teams suggest that the system's effectiveness depended on store conditions. The system was more effective in stores where teams had higher opportunities for advancement and where

store managers had greater ability to understand and act on the core values, and less effective in stores receiving inadequate support (i.e., less inventory and late employee payments).

Our findings contribute to the literature on 360-degree performance appraisal systems by highlighting both their benefits as drivers of performance absent additional monetary incentives and potential side effects that might weaken their effectiveness and result in suboptimal allocation of effort on some of the dimensions they promote. We contribute to the study of mechanisms used to motivate performance via implicit incentives. Finally, we contribute to the accounting literature examining the use of multiple measures on performance evaluations.

Our results are generalizable to companies considering a 360-degree system in a setting with preexisting high-powered incentives (though being focused on a single organization, our study is subject to the usual concerns regarding generalizability). We acknowledge that low-powered tests and potentially imperfect proxies for our core values (the impact of which we discuss in Section 4) may have hampered our ability to find significant results for *some* (though not all) outcome variables (e.g., abnormal customer returns) related to values associated with long-term organizational goals. However, our proxies allowed us to use more objective measures than the ratings traditionally used to test the effects of performance assessments interventions and to capture both potential causal effects and moderated effects of the values-based 360-degree system. Additionally, our study offers reflections on issues that should be considered by researchers conducting field experiments in collaboration with organizations.

Future research may address follow-up questions, such as exploring how much communication and reinforcement of core values is necessary for a company's values to resonate with—and be remembered by—employees and what are the best ways to do so. We look forward to future research in this area.

Appendix 1: Performance Appraisal Instrument

Core Value #1: **We Gain Control of Our Own Career By Working Hard Every Day and Reaching Out for Support**
We work hard every day to grow and succeed in life, and to make RETAILER successful. We know that by working hard and honestly, we can earn more and we have the chance to be promoted. We reach out to other stores, head office, brands, managers, and the distribution center (DC), to get stock, to get numbers activated, and to get repair and dead on arrival (DOA) cases resolved. By reaching out we achieve higher sales, make more money and have happier customers who will recommend our stores.
Select a number between 1 and 5 for every question where 1 means Never, 2 means Rarely, 3 means Sometimes, 4 means Very often, and 5 means Always.
1.1 Do you explain to all promoters and the cashier their targets and the reward program?
1.2 Do you give all promoters and the cashier their daily target every morning?
1.3 Do you ask all promoters and the cashier every day about their target achievement till date?
1.4 Do you remain positive about targets even if there have been some bad days?
1.5 Do you try to increase sales by reaching out to customers outside the store (for example, by distributing leaflets, making posters of special offers, or telling promoters to stand at the canopy outside the store)?
1.6 Do you work hard to help everyone achieve targets even if popular models are out of stock?
1.7 Do you tell all promoters and the cashier to sell old and stuck models?
1.8 Do you sell to the customer when the brand's promoter is not present?
1.9 Do you make sure any problems in the store (PC, printer, AC, lights, sign board problems, etc.) get fixed?
1.10 Do you stay late if a customer walks into the store at the time of store closing?
1.11 Do you make efforts to get a new promoter if a current promoter resigns or is absent for a long time?
1.12 Do you help get stock from other stores when needed?
1.13 Do you make all the promoters and the cashier believe that they can have a successful career at RETAILER?
1.13b. Do you believe that you can have a successful career at RETAILER?

Appendix 1: Performance Appraisal Instrument (Continuation)

Core Value #2: We Give More Value
We give the best combo offers to our customers. For example, our handset plus headphone offer and our handset plus insurance offer are the best value in the market. We constantly try to learn about the products and services we sell so that we can know what options to offer to our customers and answer their questions better. We help customers with their problems in any way we can. We work to build long-term relationships with our customers so that they will visit RETAILER again.
Select a number between 1 and 5 for every question where 1 means Never, 2 means Rarely, 3 means Sometimes, 4 means Very often, and 5 means Always
2.1 Do you know all the DPs, schemes and offers from the different brands (example, Bajaj Finance, EMI scheme, Cash back, PayTM Scheme, etc.)?
2.2 Do you make sure that the price list, posters, and banners in the store are up-to-date?
2.3 Do you know the local market prices?
2.4 Do you teach less experienced team members how to sell profitable bundles to the customer (for example, by giving free gifts, free apps, insurance, unlimited calling, etc. to close sales at a higher price)?
2.5 Do you try hard to close sales against competitors without lowering the price?
2.6 Do you contact the store's customers when the out of stock products become available in the store?
2.7 Do you contact previous customers to tell them about new products?
2.8 Do you make long-term relationships with customers?
2.9 Do you ask all promoters and the cashier to make long-term relationships with customers?
2.10 Do you make accurate commitments to the customer? (For example, you do not promise that a number will be activated in 3 days, or promise that a handset will be repaired within a certain amount of time if you do not know when it will be repaired) In this question, NEVER means you make promises you do not know RETAILER can fulfill, such as those in the examples, to all of your customers SOMETIMES means you make promises you do not know RETAILER can fulfill, such as those in the examples, to about half of your customers ALWAYS means you never make promises you do not know RETAILER can fulfill, such as those in the examples, to any of your customers
2.11 Do you instruct all promoters and the cashier to make only accurate commitments to the customer?
2.12 Do you help customers that have problems? (Some examples of helping are giving your mobile number to the customer, solving activation problems, showing the customer the way to the service center, or even personally going to the service center with the customer, or sending some person from the store to the service center with the customer) In this question, NEVER means you never take any action to help the store's customers that have problems SOMETIMES means you take one or more actions, such as those described in the examples, to help about half of the store's customers that have problems ALWAYS means you take one or more actions, such as those described in the examples, to help all of the store's customers that have problems
2.13 Do you tell everyone in the store to help customers with problems?
2.14 Do you tell everyone in the store to give the same respect to all customers regardless of their purchase amount? (For example, to be equally respectful to a customer wanting a small Rs. 10 recharge and a customer buying an apple phone)
2.15 Do you tell everyone in the store to be respectful to irritated customers?

Appendix 1: Performance Appraisal Instrument (Continuation)

Core Value #3: We are Honest and Ethical
We are always honest and ethical and we do the right thing at the store every day. We believe that this is the only way to make our store and RETAILER successful.
Select a number between 1 and 5 for every question where 1 means Never, 2 means Rarely, 3 means Sometimes, 4 means Very often, and 5 means Always.
3.1 Are you trustworthy to customers? (Examples of NOT being trustworthy are telling lies about what is being sold to the customer, selling fake products, changing the original batteries of the handset for cheaper batteries, taking the customers' money based on false promises) In this question, NEVER means you take at least one action that is "not trustworthy," such as those described in the examples, with all of the customers you serve SOMETIMES means you take at least one action that is "not trustworthy", such as those described in the examples, with about half of the customers you serve ALWAYS means you never take an action that is "not trustworthy" with any of the customers you serve
3.2 Do you tell all promoters and the cashier to be trustworthy to customers?
3.3 Do you stop wrong activity against the company? (Examples of wrong activities are: stealing, lying, giving unauthorized discounts to friends or family, selling products that are not coming from HO at the store, people making profits for themselves when serving a customer, borrowing store cash or allowing someone to borrow store cash) In this question, NEVER means you never stop wrong activities SOMETIMES means you stop about half of the wrong activities that you notice, such as those described in the examples ALWAYS means you stop all of the wrong activities that you notice, such as those described in the examples
3.4 Do you report wrong activity against the company to HO? Please select "Cannot Answer" if there hasn't been any wrong activity.
3.5 Are you honest at the store? (Being honest means not doing any wrong activity) In this question, NEVER means you do at least one wrong activity, such as those described in the examples, one or more times a day SOMETIMES means you do at least one wrong activity, such as those described in the examples, about once a week ALWAYS means you never do any wrong activity
3.6 Do you tell the cashier and the promoters to be always honest in the store?
3.7 Do you transfer promoters out of your store for personal issues?

Appendix 1: Performance Appraisal Instrument (Continuation)

Core Value #4: We are Caring and Respectful
We care about and respect each other and our customers. We help each other to grow and be more successful. This is who we are.
Select a number between 1 and 5 for every question where 1 means Never, 2 means Rarely, 3 means Sometimes, 4 means Very often, and 5 means Always.
4.1 Do you give the same respect to customers regardless of caste, religion, gender, or economic status?
4.2 Do you give the same respect to the promoters and the cashier regardless of caste, religion or gender?
4.3 Do you earn the trust of the promoters and the cashier?
4.4 Do you tell all promoters and the cashier when they've done a good job (using words such as Well Done, Good job, Keep it up)?
4.5 Do you tell people at the store to work as a team?
4.6 Do you help solve any fights among the promoters or between the cashier and the promoters at the store?
4.7 Do you understand the personal problems of the cashier and the promoters?
4.8 Do you ask for help from HO when a promoter or the cashier needs it?
4.9 Do you care about the promoters' and the cashier's personal development?
4.10 Do you make efforts to learn about new products and services?
4.11 Do you make efforts to learn from the most experienced promoters?
4.12 Do you make efforts to learn from the WhatsApp group?
4.13 Do you try to learn new things?

Appendix 2: Organizational Goals and Values at RETAILER

Vision: To build <u>together</u> the largest and most successful mobile phone retailer in India, providing our people with maximum opportunities for growth	
Core values	**Performance metrics used by researchers as proxies of the core values**
We Gain Control of Our Own Career By Working Hard Every Day and Reaching Out for Support	Sales, Gross Profit
We Give More Value	NPS, % Invoices with Bundles
We are Honest and Ethical	Abnormal Customer Returns
We are Caring and Respectful	N/A

Appendix 3: Definition of Variables Used in This Study

Variable	Definition
Dependent Variables	
Ln(Sales)	Natural logarithm of weekly net sales for store *i* in week *t*
Ln(Gross Profit)	Natural logarithm of gross profit for store *i* in week *t*
% Invoices with Bundles	Percentage of invoices with bundles of products for store *i* in week *t*
NPS	Net promoter score for store *i* in week *t* This variable is constructed based on a question asking customers how likely they are (on a 0 to 10 scale) to recommend RETAILER to a friend. From this question, we calculate the Net Promoter Score as the percentage of "promoters" (respondents giving a 9 or 10) minus the percentage of "detractors" (respondents giving a score of 0 through 6).
Abnormal Customer Returns	Measure of abnormal returns in the first week of the month, calculated as the difference between the average daily returns in the first week of the month and the average daily returns in the rest of the month, scaled by the average daily returns in the rest of the month.
Explanatory Variables	
Post	Indicator variable assuming the value of 1 if the week/month is after the introduction of the 360-degree survey instrument, and zero otherwise
Treatment	Indicator variable assuming the value of 1 if store *i* is in the treatment group, and zero otherwise
Store Manager Change	Indicator variable assuming the value of 1 if store *i* experienced a change in store manager after the introduction of the 360-degree system at time t or earlier.
Sales Days	Number of days the store was open in the week/month (depending on whether the dependent variable is measured at the weekly or monthly level).

Appendix 4: Follow-up interview questionnaire

Question Number	Question
Q1	When did you start working at RETAILER?
Q2.a	Is there anything you like about working at RETAILER? If so, what?
Q2.b	Would you recommend a friend or family member to work at RETAILER?
Q3	Is there anything you don't like about working at RETAILER? If so, what?
Q4	What are your career plans for the future?
Q5	Can you tell me what RETAILER's core values are?
Q6	Do you know what each of these core values mean?
Q7.a	What did you like about the session introducing RETAILER's vision?
Q7.b	Do you have any concerns about the session?
Q8	What do you think is the purpose of the new 360-degree feedback system?
Q9	What is your understanding about who will complete the surveys?
Q10	What is your understanding about who will receive feedback?
Q11	How did you feel about completing a survey about your store manager/yourself for the new 360-degree feedback system?
Q12	What impact, if any, do you think the new 360-degree feedback system will have?
Q13	Has the store manager/Have you discussed the new 360-degree feedback system with your store team?
Q14	(Question for store managers only): How did you feel about others completing a survey about you for the new 360-degree feedback system?
Q15	(Question for store managers only): How do you feel about the upcoming feedback sessions where you will see the results of the surveys and discuss the results with your supervisor?

Appendix 5: John List's 14 tips for pulling off a successful field experiment

1. Use economic theory to guide your design and as a lens to interpret your findings.
2. Be an expert about the market you are studying.
3. Have a proper control group.
4. Obtain sufficient sample sizes.
5. Have a champion within the organization – the higher up the better.
6. Understand organizational dynamics.
7. Organizations that have "skin in the game" are more likely to execute your design and use your results to further organizational objectives.
8. Run the field experiment yesterday rather than tomorrow.
9. Change the nature of the discussion of the cost of the experiment.
10. Make clear that you do not have all the answers.
11. Be open to running experiments that might not provide high-powered research findings in the short run.
12. Don't be captured by the organization.
13. Understand fairness concerns.
14. Always obtain IRB approval.

Appendix 6- Power of the Proposed Tests

We examined the power of our main tests (i.e., those presented in Table 4) to estimate how large the effects of the 360-degree system needed to be, to be detected with 80% power using our data and model specification. We ran power analysis simulations controlling for store fixed effects and clustering standard errors by store, following the methodology described in Bellemare, Bissonnette, and Kroger (2014) and applying this methodology in a similar way as in Li and Sandino (2018). Our simulations assumed the following simplified version of the model used in Table 4:

$$Performance_{it} = \alpha_i + \beta_1 Post_t + \beta_2 Treatment_i * Post_t + \epsilon_{it} \quad (6\text{-}1)$$

where $Performance_{it}$ is the dependent variable (*Ln(Sales), Ln(Gross Profit), NPS, % Invoices with Bundles, Abnormal Customer Returns*) for store i at time t, α_i is a representation for store fixed effects, $Post_t$ is an indicator variable for whether time t is in the post-treatment period, $Treatment_i$ is an indicator variable for whether store i is a treatment store, and β_2 is the treatment effect analyzed.

We used our sample data to estimate how much of the variance of the performance outcomes would be explained by store fixed effects ($var(\alpha_i)$) and how much would remain unexplained ($var(\epsilon_{it})$). As described under "Simulation Details," these inputs were used to obtain each of the points in the power graphs in Figure 6-1, defined based on the following two coordinates:

- β_2 levels (horizontal axis): For each performance outcome variable, we pre-defined different levels of β_2 within a range where the power to detect β_2 increased dramatically. For each β_2 level that we pre-defined, we simulated 100 samples to generate each point in the power graph.
- $Power$ levels (vertical axis): We estimated the power to reject the null $\beta_2 = 0$ at each pre-defined β_2 level following two steps: (a) we ran regressions (using Equation 6-1) for each of the 100 samples simulated for each pre-defined $\beta_2$level, and then (b) we estimated the power to detect that β_2 level based on the fraction of times when the null was rejected at a significance level of 10% and assuming two-sided tests.

Panels A to E of Figure 6-1 show that, with 80% power, we would be able to identify effects of the 360-degree system of at least the following sizes for each performance variable:

Performance Variable	Minimum Detectable Effect Size
Ln(Sales) (the natural logarithm of weekly net sales at the store-week level)	17% change in Sales
Ln(Gross Profit) (the natural logarithm of gross profit at the store-week level)	22% change in Gross Profit
NPS (Net Promoter Score: the percentage of "promoters" less the percentage of "detractors")	20 percentage point change in Net Promoter Score
% Invoices with Bundles (the percentage of invoices including bundles of products)	3 percentage point change in % of invoices with bundled products
bnormal Customer Returns (the abnormal customer daily returns in the first week of every month, scaled by the average daily returns in the rest of the month)	150 percentage point change in abnormal customer returns

According to our analysis, we would be able to identify a change in net sales due to the 360-degree system of 17% or more relative to the control group and a change in gross profit of 22% or more. We would be able to identify a change in Net Promoter Score due to the 360-degree system of 20 percentage points or more (e.g., a shift where 10% of the detractors would become promoters), a change in the incidence of bundled invoices of 3 percentage points or more, and a change in abnormal customer returns of 150 percentage points or more.

Simulation Details

In our simulation, we generated data as follows:

- $Performance_{it} = \alpha_i + \beta_2 Treatment_i * Post_t + \epsilon_{it}$
- β_2 level was pre-specified
- $Post_t$ was set to one for the second half of the sample period.
- $\alpha_i \sim N(0, var(\alpha_i))$
- $\epsilon_{it} \sim N\big(0, var(\epsilon_{it})\big)$

- 16 of the 32 stores are randomly assigned to the treatment condition, $Treatment_i = 1$ (β_2 is set to the pre-specified level for those stores), the other half is assigned to the control condition, $Treatment_i = 0$.

The following inputs were used to run the simulation:[38]

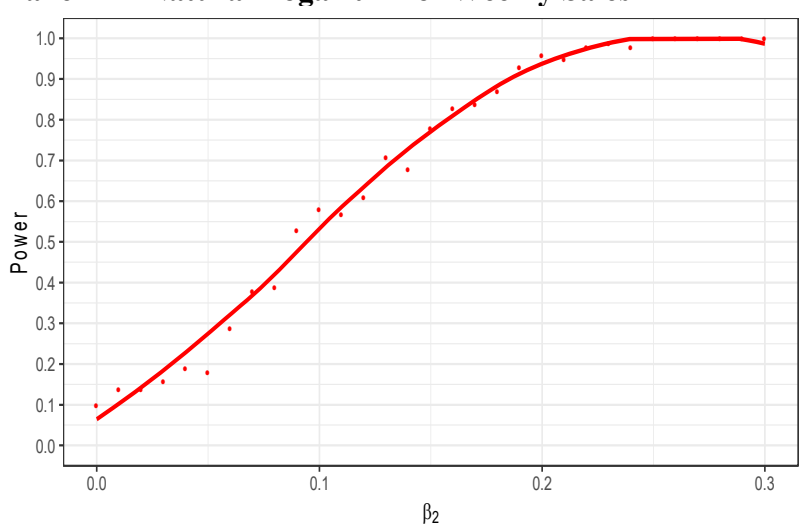
Performance Outcome	# Stores	# Time Periods	# Observations	$var(\alpha_i)$	$var(\epsilon_{it})$
Ln(Sales)	32	22	692	1.77	0.16
Ln(Gross Profit)	32	22	688	1.76	0.25
Net Promoter Score	32	22	377	0.04	0.14
% Invoices with Bundles	32	22	692	0.01	0.01
Abnormal Customer Returns	32	6	181	1.21	3.39

For each performance outcome variable and pre-specified level of β_2 used in the data generation process, we generated 100 samples, ran 100 regressions (one per sample), and estimated the power value as the proportion of times when the estimated coefficient $\hat{\beta}_2$ was significantly different from zero. Each point in Figure 6-1 reports the power value for each pre-defined β_2.

Figure 6-1 Power Analysis Graphs

Power to detect an effect size of β_2 on the performance outcomes specified in each panel, accounting to equation (1).

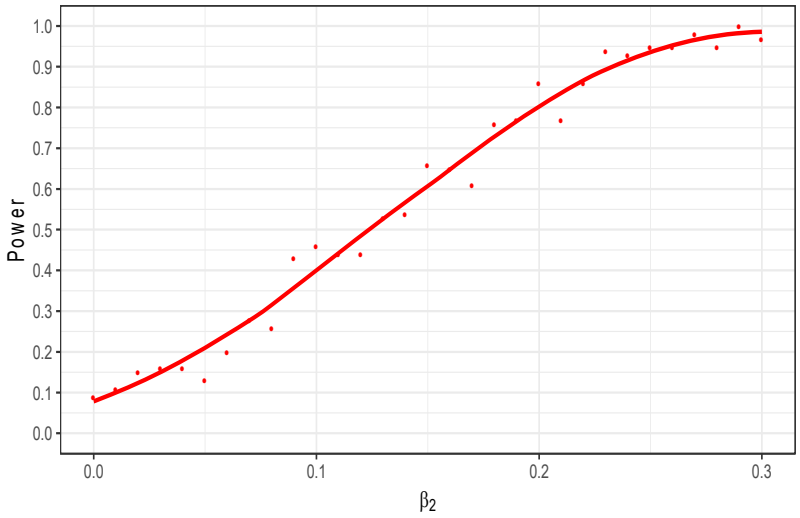
Panel A – Natural Logarithm of Weekly Sales



[38] We used a fixed effects regression model including all the explanatory variables that appear in Table 4 to estimate the amount of variance attributed to store fixed effects (var(α_i)) and residual noise (var(ϵ_{it})). Also there are only 6 time periods for the Abnormal Customer Returns variable since it is collected monthly.

Figure 6-1 Power Analysis Graphs (Continuation)

Panel B – Natural Logarithm of Gross Profit



Panel C – Net Promoter Score (the percentage of "promoters" less the percentage of "detractors")

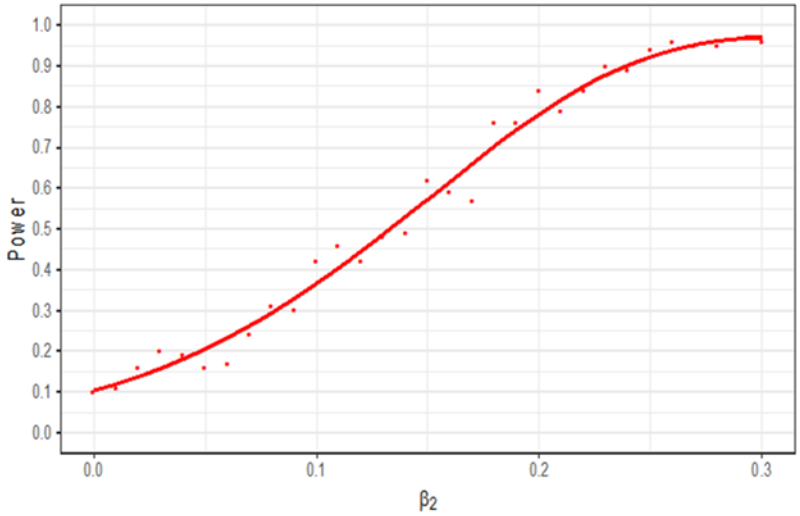
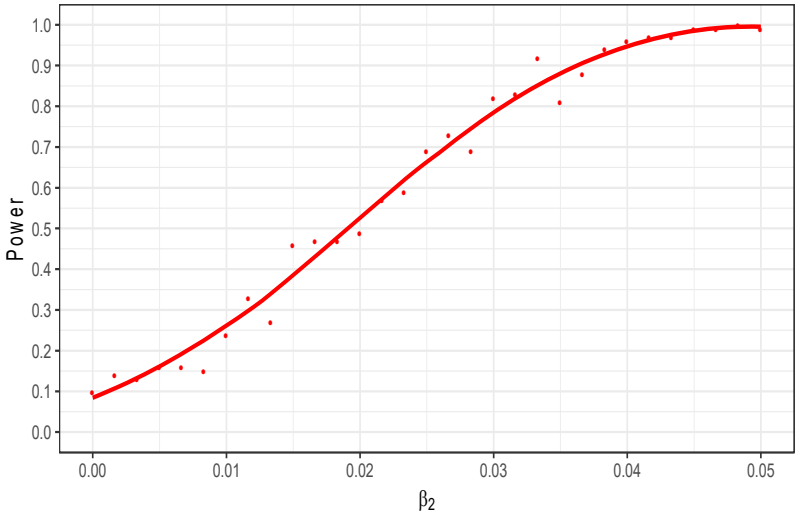
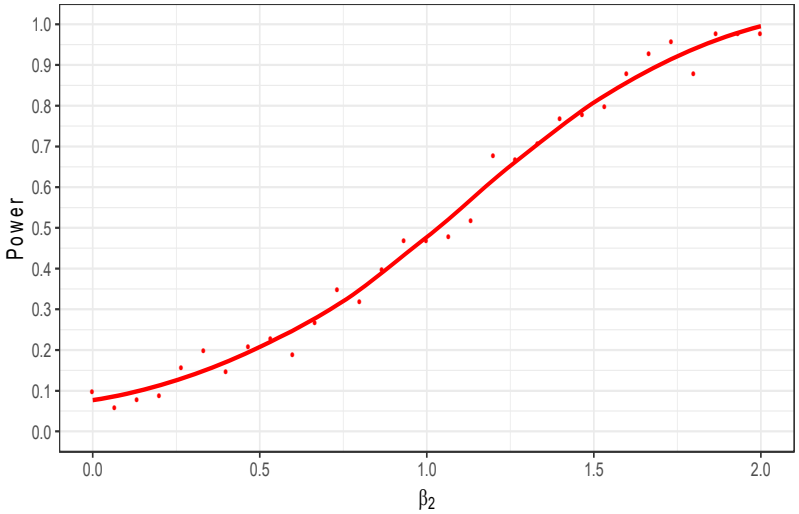


Figure 6-1 Power Analysis Graphs (Continuation)

Panel D – % Invoices with Bundles (the percentage of invoices including promotion-related bundles)



Panel E – Abnormal Customer Returns (the abnormal quantity of customer returns in the first week of every month relative to the normal quantity of customer returns in the other weeks of the month)



References:

Akerlof, G. A., and R. E. Kranton. 2005. Identity and the Economics of Organizations. *Journal of Economic Perspectives* 19(1): 9-32.

Akerlof, G. A., and R. E. Kranton. 2000. Economics and Identity. *The Quarterly Journal of Economics* 115(3): 715-753.

Arnold, T. J., R. W. Palmatier, D. Grewal, and A. Sharma. 2009. Understanding Retail Managers' Role in the Sales of Products and Services. *Journal of Retailing* 85(2): 129-144.

Atwater, L.E., J. F. Brett, and A. C. Charles. 2007. Multisource Feedback: Lessons Learned and Implications for Practice. *Human Resource Management* 46(2): 285-307.

Atwater, L.E. and J.F. Brett. 2005. Antecedents and Consequences of Reactions to Developmental 360° Feedback. *Journal of Vocational Behavior* 66(3): 532-548.

Avery, K. 2000. The Effects of 360 Degree Feedback over Time. *ProQuest Dissertations and Theses.*

Baker, G. P., R. Gibbons, and K. J. Murphy. 1994. Subjective Performance Measures in Optimal Incentive Contracts. *The Quarterly Journal of Economics* 109 (4):1125-1156.

Baker, G. P., M. C. Jensen, and K. J. Murphy. 1988. Compensation and Incentives: Practice vs. Theory. *Journal of Finance* 43(3): 593-616.

Banker, R. D., and S. Datar. 1989. Sensitivity, Precision, and Linear Aggregation of Signals for Performance Evaluation. *Journal of Accounting Research* 27(1): 21-39.

Banker, R. D., G. Potter, and D. Srinivasan. 2000. An Empirical Investigation of an Incentive Plan that Includes Nonfinancial Performance Measures. *The Accounting Review* 75(1): 65-92.

Bernstein, E. S. and S. Li. 2017. Seeing Where you Stand: From Performance Feedback to Performance Transparency. *Academy of Management Proceedings*.

Bhattacharya, A. Infosys is crowdsourcing employee feedback to improve its managers. *Quartz India*, November 13, 2018, https://qz.com/india/1407994/infosys-bets-on-crowdsourcing-platform-maq-to-improve-managers/, accessed March 3, 2019.

Blanes i Vidal, J., and M. Nossol. 2011.Tournaments Without Prizes: Evidence from Personnel Records. *Management Science* 57(10): 1721-1736.

Bloomfield, R., M. W. Nelson, and E. Soltes. 2016. Gathering Data for Archival, Field, Survey, and Experimental Accounting Research. *Journal of Accounting Research* 54(2): 341-395.

Bol, J. 2011. The Determinants and Performance Effects of Managers' Performance Evaluation Biases. *Accounting Review* 86(5): 1549-1575.

Bracken, D., and W. Rose. 2011. When Does 360-Degree Feedback Create Behavior Change? And How Would We Know It When It Does? *Journal of Business and Psychology* 26(2): 183-192.

Bradler, C. R. Dur, S. Neckermann, and A. Non. 2016. Employee Recognition and Performance: A Field Experiment. *Management Science* 62(11): 3085-3099.

Campbell, D., S. M. Datar, S. L. Kulp, and V. G. Narayanan. 2015. Testing Strategy with Multiple Performance Measures: Evidence from a Balanced Scorecard at Store24. *Journal of Management Accounting Research* 27(2): 39-65.

Campbell, D. 2008. Nonfinancial Performance Measures and Promotion-based Incentives. *Journal of Accounting Research* 46(2): 297-332.

Casas-Arce, P., S. Lourenco, and F. A. Martinez-Jerez. 2017. The Performance Effect of Feedback Frequency and Detail: Evidence from a Field Experiment in Customer Satisfaction. *Journal of Accounting Research* 55(5): 1051-1088.

Charness, G., and U. Gneezy. 2009. Incentives to Exercise. *Econometrica* 77(3): 909-931.

Deller, C. 2018. Reflections on Obtaining Archival Data from the Field. *Journal of Financial Reporting*, Forthcoming.

Dikolli, S. S., and K. L. Sedatole. 2007. Improvements in the Information Content of Nonfinancial Forward-Looking Performance Measures: a Taxonomy and Empirical Application. *Journal of Management Accounting Research* 19(1): 71-104.

Floyd, E., and J. A. List. 2016. Using Field Experiments in Accounting and Finance. *Journal of Accounting Research* 54(2): 437-475.

Gallani, S. 2019. Temporary Incentives and Behavior Persistence: Evidence from the Field. Harvard Business School Working Paper.

Gibbons, R., and K. J. Murphy. 1992. Optimal Incentive Contracts in the Presence of Career Concerns: Theory and Evidence. *Journal of Political Economy* 100(3): 468-505.

Gibbs, M., K. A. Merchant, W. A. Van der Stede, and M. E. Vargus. 2004. Determinants and Effects of Subjectivity in Incentives. *The Accounting Review* 79(2): 409-436.

Griffith, R., and A. Neely. 2009. Performance Pay and Managerial Experience in Multitask Teams: Evidence from Within a Firm. *Journal of Labor Economics* 27(1): 49-82.

Hall, M. 2008. The Effect of Comprehensive Performance Measurement Systems on Role Clarity, Psychological Empowerment and Managerial Performance. *Accounting, Organizations and Society* 33(2-3): 141-163.

Hazucha, J. F., S. A. Hezlett, and R. J. Schneider. 1993. The Impact of 360-degree Feedback on Management Skills Development. *Human Resource Management* 32(2-3): 325.

Holmstrom, B., and P. Milgrom. 1991. Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design. *Journal of Law Economics & Organization* 7(Special Issue): 24-52.

Ittner, C. D., and D. F. Larcker. 1998. Innovations in Performance Measurement: Trends and Research Implications. *Journal of Management Accounting Research* 10: 205-238.

Ittner, C. D., D.F. Larcker, and T. Randall. 2003. Performance Implications of Strategic Performance Measurement in Financial Services Firms. *Accounting, Organizations and Society* 28(7-8): 715-741.

Financial Express Online. 360-degree Feedback Mechanism: PMO will use this tool to rate the babus, June 29, 2016, https://www.financialexpress.com/india-news/360-degree-feedback-mechanism-pmo-will-use-this-tool-to-rate-the-babus/300347/,accessed March 28, 2019.

Kaplan, R. S., and D. P. Norton. 1992. The Balanced Scorecard - Measures that Drive Performance. *Harvard Business Review*: 71-79.

Kelly, N. 2019. Lessons Learned from Measuring International Customer Satisfaction. HubSpot Research. Online article published on February 18, 2019: https://blog.hubspot.com/news-trends/international-nps-research.

Li, S. X., and T. Sandino. 2018. Effects of an Information Sharing System on Employee Creativity, Engagement, and Performance. *Journal of Accounting Research* 56(2): 713-747.

List, J. A., 2011. Why Economists Should Conduct Field Experiments and 14 Tips for Pulling One Off. *Journal of Economic Perspectives* 25(3): 3-16.

London, M., and R. W. Beatty. 1993. 360-Degree Feedback as a Competitive Advantage. *Human Resource Management* 32(2-3): 353-372.

London, M., and J. Smither. 1995. Can Multi-Source Feedback Change Perceptions of Goal Accomplishment Self-Evaluations, and Performance-Related Outcomes? Theory-Based Applications and Directions for Research. *Personnel Psychology* 48(4): 803-839.

Loughry, M. L., and H. L. Tosi. 2008. Performance Implications of Peer Monitoring. *Organization Science* 19(6): 876-890.

Mael, F., and B. E. Ashforth. 1992. Alumni and their Alma Mater: A Partial Test of the Reformulated Model of Organizational Identification. *Journal of Organizational Behavior* 13(2): 103-123.

Merchant, K. and T. Sandino. 2009. Four Options for Measuring Value Creation. *Journal of Accountancy*. August Issue: 34-37.

Prendergast, C. 1999. The Provision of Incentives in Firms. *Journal of Economic Literature* 37(1): 7-63.

Reilly, R., J. W. Smither, and N. L.Vasilopoulos. 1996. A Longitudinal Study Of Upward Feedback. *Personnel Psychology* 49(3): 599-612.

Sawyer, J. E. 1992. Goal and Process Clarity: Specification of Multiple Constructs of Role Ambiguity and a Structural Equation Model of their Antecedents and Consequences. *Journal of Applied Psychology* 77(2): 130-142.

Smith, A. F. R. and Fortunato, V. J. 2008. Factors Influencing Employee Intentions to Provide Honest Upward Feedback Ratings. *Journal of Business and Psychology* 22(3): 191-207.

Smither, J. W., M. London, N. Vasilopoulos, R. R. Reilly, R. E. Millsap, and N. 1995. An Examination of the Effects of an Upward Feedback Program Over Time. *Personnel Psychology* 48(1): 1-34.

Smither, J. W., M. London, and R. R. Reilly. 2005. Does Performance Improve Following Multisource Feedback? A Theoretical Model, Meta-analysis, and Review of Empirical Findings. *Personnel Psychology* 58(1): 33-66.

Smither, J. W., M. London, and K. R. Richmond. 2005. The Relationship Between Leaders' Personality and Their Recations to and Use of Multisource Feedback. *Group & Organization Management* 30(2): 181-210.

Tayler, W. B. 2010. The Balanced Scorecard as a Strategy-Evaluation Tool: The Effects of Implementation Involvement and a Causal-Chain Focus. *The Accounting Review* 85(3): 1095-1117.

Van den Steen, E. 2010. Culture Clash: The Costs and Benefits of Homogeneity. *Management Science* 56(10): 1718-1738.

van Knippenberg, D. 2000. Work Motivation and Performance: A Social Identity Perspective. *Applied Psychology: An International Review* 49(3): 357-371.

Walker, A. G., and J. W. Smither. 1999. A Five-Year Study of Upward Feedback: What Managers Do with Their Results Matters. *Personnel Psychology* 52(2): 393-423.

WorldatWork in collaboration with J. Bol, I. Grabner, R. Grasser, S. Loftus, T. Sandino, and K. Sedatole. 2019. Contemporary Performance Evaluation Practices.

Table 1: Descriptive Statistics

Variable	N	mean	sd	p25	p50	p75	min	max
Ln(Sales)	692	11.897	1.586	11.046	12.085	13.001	6.040	14.856
Ln(Gross Profit)	688	9.452	1.589	8.698	9.755	10.562	2.565	12.276
NPS	368	0.334	0.394	0.000	0.333	0.553	-1.000	1.000
% Invoices with Bundles	693	0.257	0.129	0.162	0.246	0.345	0.000	0.714
Abnormal Customer Returns	181	0.387	1.925	-0.473	-0.014	0.500	-1.000	16.143
Store Manager Change	693	0.039	0.194	0.000	0.000	0.000	0.000	1.000
Sales Days (weekly)	692	6.522	1.062	7.000	7.000	7.000	1.000	7.000
Sales Days (monthly)	190	28.321	4.251	28.000	30.000	31.000	12.000	31.000

Notes: In order to have a consistent length in the pre- and post- periods we have restricted the sample to include 11 weeks in the pre-period and 11 weeks in the post-period. Our sample includes store-week level observations for all variables except for *Abnormal Customer Returns*, and *Sales Days (monthly)* which are measured at a monthly level. Observations for the net promoter score (*NPS*) were not available for the entire pre-period, as these metrics were introduced only three weeks before the intervention. All variables are defined in Appendix 3.

Table 2: Correlation Table

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Ln(Sales)	1.000						
(2) Ln(Gross Profit)	0.951***	1.000					
(3) NPS	-0.055	-0.059	1.000				
(4) % Invoices with Bundles	0.272***	0.226***	0.030	1.000			
(5) Abnormal Customer Returns	-0.059	-0.081	0.021	0.126**	1.000		
(6) Store Manager Change	-0.001	-0.003	-0.084	-0.146**	-0.038	1.000	
(7) Sales Days (weekly)	0.345***	0.395***	-0.050	0.087	-0.247***	0.061	1.000
(8) Sales Days (monthly)	0.384***	0.455***	-0.043	0.167***	-0.225***	0.062	0.645***

Notes: Table 2 reports the pairwise Pearson correlation coefficients across all variables of interest in this study. Two-tailed statistical significance is indicated, respectively, with: * = (p<0.10); ** = (p<0.05); *** = (p<0.01). All variables are defined in Appendix 3.

Table 3: Univariate Analyses

		Control			Treatment			Difference (Treatment - Control)		
		Obs	**Mean**		**Obs**	**Mean**		**Obs**	**Mean**	
Pre	*Ln(Sales)*	176	11.583		176	12.312		352	0.729	***
	Ln(Gross Profit)	175	9.124		176	9.835		351	0.712	***
	NPS	40	0.127		43	0.176		83	0.049	
	% Invoices with Bundles	176	0.293		176	0.274		352	-0.019	
	Abnormal Customer Returns	47	1.058		46	0.445		93	-0.614	
Post	*Ln(Sales)*	164	11.362		176	12.292		340	0.929	***
	Ln(Gross Profit)	162	8.932		175	9.874		337	0.943	***
	NPS	131	0.380		154	0.394		285	0.014	
	% Invoices with Bundles	165	0.233		176	0.225		341	-0.008	
	Abnormal Customer Returns	42	-0.016		46	0.010		88	0.026	
Difference (Post - Pre)	*Ln(Sales)*	340	-0.221		352	-0.021		692	0.200	
	Ln(Gross Profit)	337	-0.192		351	0.039		688	0.231	
	NPS	171	0.252	**	197	0.218	***	368	-0.034	
	% Invoices with Bundles	341	-0.060	***	352	-0.049	***	693	0.011	
	Abnormal Customer Returns	89	-1.074	**	92	-0.434	*	181	0.640	

Notes: Table 3 reports the results of paired t-tests allowing for unequal variances across groups. Rows report comparisons between treatment stores and control stores, while columns report comparisons between pre- and post-periods. We test differences in performance dimensions included in the 360-degree intervention relative to each of the firm's organizational values. The null hypothesis is that mean(control)=mean(treatment) in the rows, and that mean(pre)=mean(post) in the columns. The results of tests for the alternative hypothesis mean(control)≠mean(treatment) are reported in the rightmost column, and those for the tests of the alternative hypothesis mean(pre)≠mean(post) are reported in the bottom row. The bottom right corner reports the results of paired t-tests relative to the combination of pre/post and treatment/control. Two-tailed statistical significance is indicated, respectively, with: * = ($p<0.10$); ** = ($p<0.05$); *** = ($p<0.01$). All variables are defined in Appendix 3.

Table 4: Effects of the Introduction of the Values-Based 360° Assessment System on Performance

This table reports results from running the following regression:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Post_t * Treatment_i + \beta_3 Store\ Manager\ Change_{i,t} + \beta_4 Sales\ Days_{i,t} + \beta_n (Store\ Fixed\ Effects) + \varepsilon$$

Core Values	*We Gain Control of our Career by Working Hard*		*We Give More Value*		*We are Honest and Ethical*
Outcomes	*Ln(Sales)*	*Ln(Gross Profit)*	*NPS*	*% Invoices with Bundles*	*Abnormal Customer Returns*
Post	-0.259**	-0.264**	0.246**	-0.062***	-0.930*
	(-2.50)	(-2.52)	(2.63)	(-3.09)	(-1.83)
*Post*Treatment*	0.211*	0.260*	-0.043	0.013	0.418
	(1.75)	(1.84)	(-0.35)	(0.48)	(0.74)
Store Manager Change	0.072	0.013	-0.053	-0.021	-0.071
	(0.49)	(0.08)	(-0.63)	(-0.62)	(-0.12)
Sales Days	0.295***	0.279***	0.101*	-0.003	0.087
	(4.78)	(3.48)	(1.53)	(-0.42)	(0.78)
Intercept	10.040***	7.693***	-0.516	0.302***	-1.758
	(25.38)	(15.00)	(-1.17)	(7.33)	(-0.55)
Store FE?	YES	YES	YES	YES	YES
N	692	688	368	692	181
adj. R^2	0.208	0.126	0.067	0.121	0.030
adj. R^2 (alt. est.)	0.938	0.899	0.077	0.633	0.090

Notes: We use a difference-in-differences specification and estimate regression coefficients using OLS with standard errors clustered by store. In all cases, t-statistics are reported in parentheses underneath the corresponding estimated coefficient. Two-tailed statistical significance is indicated, respectively, with: * = (p<0.10); ** = (p<0.05); *** = (p<0.01). Our estimations are performed using the Stata procedure *xtreg*, with fixed effects and standard errors clustered at the store level. While this procedure yields appropriate standard errors, the R^2 is generally underestimated. In the last row we report the R^2 relative to the estimation of the same model using the Stata procedure *areg*, which fits a linear regression absorbing the categorical factor *Store*, which yields a more realistic R^2 in settings where the number of clusters is large. Because the assignment of a store to the treatment versus control group is time-invariant, the inclusion of store fixed effects causes the coefficient relative to the variable *Treatment* not to be estimated, hence we are not reporting a row for this variable. All variables are defined in Appendix 3.

Table 5: Supplemental Analyses: Moderation Effect of Promotion Opportunities on the Performance Effects of the Introduction of the Values-Based 360° Assessment System

This table reports results from running the following regression:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Promotion\ Opportunities_{i,t} + \beta_3 Post_t * Treatment_i + \beta_4 Post_t * Promotion\ Opportunities_{i,t} + \beta_5 Treatment_i * Promotion\ Opportunities_{i,t} + \beta_6 Post_t * Treatment_i * Promotion\ Opportunities_{i,t} + \beta_7 Store\ Manager\ Change_{i,t} + \beta_8 Sales\ Days_{i,t} + \beta_n (Store\ Fixed\ Effects) + \varepsilon$$

Core Values	*We Gain Control of our Career by Working Hard*		*We Give More Value*		*We are Honest and Ethical*
Outcomes	*Ln(Sales)*	*Ln(Gross Profit)*	*NPS*	*% Invoices with Bundles*	*Abnormal Customer Returns*
Post	-0.306***	-0.283***	0.192**	-0.055**	-0.409
	(-4.27)	(-3.95)	(2.09)	(-2.68)	(-1.12)
Promotion Opportunities	-0.020	-0.492**	-0.575	-0.064*	-6.629
	(-0.07)	(-2.70)	(-1.41)	(-1.94)	(-0.73)
*Post*Treatment*	0.283***	0.327***	0.043	0.009	-0.056
	(3.37)	(3.45)	(0.38)	(0.33)	(-0.12)
*Post*Promotion Opportunities*	-1.756***	-2.214***	0.145	-0.180	4.660
	(-4.17)	(-3.10)	(0.21)	(-1.64)	(0.52)
*Treatment*Promotion Opportunities*	-1.113***	-1.411***	-0.354**	-0.059	-3.301
	(-8.98)	(-7.58)	(-2.12)	(-1.24)	(-1.18)
*Post*Treatment*Promotion Opportunities*	2.071***	3.295***	0.969*	0.190	3.970
	(8.03)	(7.09)	(1.95)	(1.00)	(1.24)
Store Manager Change	0.080	0.006	-0.031	-0.027	-0.515
	(0.66)	(0.06)	(-0.34)	(-0.74)	(-1.16)
Sales Days	0.245***	0.206***	0.058	-0.005	0.061
	(4.64)	(3.17)	(0.80)	(-0.85)	(1.15)
Intercept	10.393***	8.167***	-0.219	0.312***	-1.253
	(30.33)	(19.36)	(-0.46)	(7.61)	(-0.78)
Store FE?	YES	YES	YES	YES	YES
N	670	666	356	670	175
adj. R^2	0.303	0.252	0.056	0.134	0.188
adj. R^2 (alt. est.)	0.947	0.915	0.057	0.642	0.282

Notes: We use a difference-in-differences specification and estimate regression coefficients using OLS with standard errors clustered by store. In all cases, t-statistics are reported in parentheses underneath the corresponding estimated coefficient. Two-tailed statistical significance is indicated, respectively, with: * = (p<0.10); ** = (p<0.05); *** = (p<0.01). Our estimations are performed using the Stata procedure *xtreg*, with fixed effects and standard errors clustered at the store level. While this procedure yields appropriate standard errors, the R^2 is generally underestimated. In the last row we report the R^2 relative to the estimation of the same model using the Stata procedure *areg*, which fits a linear regression absorbing the categorical factor *Store*, which yields a more realistic R^2 in settings where the number of clusters is large. The variable *Promotion Opportunities* is calculated as #stores/#employees within a 1-mile radius. Because the assignment of a store to the treatment versus control group is time-invariant, the inclusion of store fixed effects causes the coefficient relative to the variable *Treatment* not to be estimated, hence we are not reporting a row for this variable. All variables not defined here, are defined in Appendix 3.

Table 6: Supplemental Analyses: Moderation Effect of Store Manager Tenure on the Performance Effects of the Introduction of the Values-Based 360° Assessment System

This table reports results from running the following regression:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Post_t * Treatment_i + \beta_3 Post_t * Tenure_i + \beta_4 Post_t * Treatment_i * Tenure_i + \beta_5 StoreManagerChange_{i,t} + \beta_6 SalesDays_{i,t} + \beta_n (Store\ Fixed\ Effects) + \varepsilon$$

Core Values	*We Gain Control of our Career by Working Hard*		*We Give More Value*		*We are Honest and Ethical*
Outcomes	*Ln(Sales)*	*Ln(Gross Profit)*	*NPS*	*% Invoices with Bundles*	*Abnormal Customer Returns*
Post	-0.143*	-0.252**	0.424***	-0.058*	-0.591
	(-1.79)	(-2.64)	(3.96)	(-1.93)	(-1.09)
*Post*Treatment*	0.103	0.176	-0.111	0.018	0.105
	(0.85)	(1.13)	(-0.79)	(0.47)	(0.20)
*Post*Tenure*	-0.008	-0.007	-0.030***	0.002	0.039
	(-0.75)	(-0.69)	(-3.29)	(0.44)	(1.15)
*Post*Treatment*Tenure*	0.009	0.014	0.026**	-0.002	-0.069
	(0.71)	(0.99)	(2.13)	(-0.53)	(-1.18)
Store Manager Change	0.042	0.046	-0.134*	-0.024	-0.287
	(0.28)	(0.32)	(-1.87)	(-0.64)	(-0.52)
Sales Days	0.184***	0.200**	-0.106	-0.018*	0.196
	(3.40)	(2.23)	(-0.85)	(-1.84)	(1.38)
Intercept	11.078***	8.531***	0.845	0.412***	-5.174
	(30.31)	(14.06)	(1.02)	(6.10)	(-1.27)
Store FE?	YES	YES	YES	YES	YES
N	567	567	313	567	153
adj. R^2	0.079	0.080	0.091	0.113	0.026
adj. R^2 (alt. est.)	0.940	0.900	0.108	0.684	0.132

Notes: We use a difference-in-differences specification and estimate regression coefficients using OLS with standard errors clustered by store. Two-tailed statistical significance is indicated, respectively, with: * = (p<0.10); ** = (p<0.05); *** = (p<0.01). Our estimations are performed using the Stata procedure *xtreg*, with fixed effects and standard errors clustered at the store level. While this procedure yields appropriate standard errors, the R^2 is generally underestimated. In the last row we report the R^2 relative to the estimation of the same model using the Stata procedure *areg*, which fits a linear regression absorbing the categorical factor *Store*, which yields a more realistic R^2 in settings where the number of clusters is large. The variable *Tenure* measures the total number of months of employment recorded for the store manager computed at the time of the intervention. Because the assignment of a store to the treatment versus control group is time-invariant, the inclusion of store fixed effects causes the coefficient relative to the variables *Treatment* and *Tenure* not to be estimated, hence we are not reporting a row for these variables. All variables not defined here, are defined in Appendix 3.

Table 7: Supplemental Analyses: Moderation Effect of Days Sales in Inventory (DSI) on the Performance Effects of the Introduction of the Values-Based 360° Assessment System

This table reports results from running the following regression:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Post_t * Treatment_i + \beta_3 Post_t * Highest\ DSI_i + \beta_4 Post_t * Treatment_i * Highest\ DSI_i + \beta_5 Store\ Manager\ Change_{i,t} + \beta_6 Sales\ Days_{i,t} + \beta_n (Store\ Fixed\ Effects) + \varepsilon$$

Core Values	*We Gain Control of our Career by Working Hard*		*We Give More Value*		*We are Honest and Ethical*
Outcomes	*Ln(Sales)*	*Ln(Gross Profit)*	*NPS*	*% Invoices with Bundles*	*Abnormal Customer Returns*
Post	-0.297**	-0.389***	0.251**	-0.061**	-1.142**
	(-2.57)	(-3.05)	(2.37)	(-2.53)	(-2.22)
*Post*Treatment*	0.208	0.343**	-0.048	-0.004	0.636
	(1.64)	(2.15)	(-0.35)	(-0.13)	(1.14)
*Post*Highest DSI*	0.106	0.352*	-0.015	-0.004	0.621
	(0.46)	(1.80)	(-0.07)	(-0.11)	(0.54)
*Post*Treatment*Highest DSI*	0.226	-0.019	0.018	0.131*	-0.629
	(0.69)	(-0.06)	(0.07)	(1.74)	(-0.50)
Store Manager Change	0.069	0.005	-0.052	-0.021	-0.115
	(0.49)	(0.03)	(-0.61)	(-0.64)	(-0.21)
Sales Days	0.295***	0.278***	0.101	-0.003	0.082
	(4.85)	(3.72)	(1.54)	(-0.48)	(0.76)
Intercept	10.043***	7.698***	-0.514	0.304***	-1.614
	(25.79)	(15.98)	(-1.18)	(7.65)	(-0.53)
Store FE?	YES	YES	YES	YES	YES
N	692	688	368	692	181
adj. R^2	0.215	0.142	0.062	0.152	0.023
adj. R^2 (alt. est.)	0.938	0.901	0.071	0.646	0.080

Notes: We use a difference-in-differences specification and estimate regression coefficients using OLS with standard errors clustered by store. In all cases, t-statistics are reported in parentheses underneath the corresponding estimated coefficient. Two-tailed statistical significance is indicated, respectively, with: * = (p<0.10); ** = (p<0.05); *** = (p<0.01). Our estimations are performed using the Stata procedure *xtreg*, with fixed effects and standard errors clustered at the store level. While this procedure yields appropriate standard errors, the R2 is generally underestimated. In the last row we report the R2 relative to the estimation of the same model using the Stata procedure *areg*, which fits a linear regression absorbing the categorical factor Store, which yields a more realistic R2 in settings where the number of clusters is large. The variable *Highest DSI* is an indicator assuming value 1 if the individual store fell in the highest quartile of days sales in inventory in the pre-period, and 0 otherwise. Because the assignment of a store to the treatment versus control group is time-invariant, the inclusion of store fixed effects causes the coefficients relative to the variables *Treatment* and *Highest DSI* not to be estimated, hence we are not reporting rows for these variables. All variables not defined here, are defined in Appendix 3.

Table 8: Supplemental Analyses: Moderation Effect of Late Payments on the Performance Effects of the Introduction of the Values-Based 360° Assessment System

This table reports results from running the following regression:

$$Performance_{i,t} = \alpha + \beta_1 Post_t + \beta_2 Post_t * Treatment_i + \beta_3 Post_t * LatePayment_{i,t} + \beta_4 Post_t * Treatment_i * LatePayment_{i,t} + \beta_5 StoreManagerChange_{i,t} + \beta_6 SalesDays_{i,t} + \beta_n (Store\ Fixed\ Effects) + \varepsilon$$

Core Values	*We Gain Control of our Career by Working Hard*		*We Give More Value*		*We are Honest and Ethical*
Outcomes	*Ln(Sales)*	*Ln(Gross Profit)*	*NPS*	*% Invoices with Bundles*	*Abnormal Customer Returns*
Post	-0.277**	-0.269**	0.251**	-0.070***	-1.004*
	(-2.50)	(-2.37)	(2.46)	(-3.49)	(-1.85)
*Post*Treatment*	0.245*	0.299**	-0.018	0.015	0.494
	(1.92)	(2.05)	(-0.14)	(0.51)	(0.83)
*Post*Late Payment*	0.244**	0.059	-0.041	0.115***	1.047*
	(2.21)	(0.52)	(-0.40)	(5.74)	(1.90)
*Post*Treatment*Late Payment*	-0.488***	-0.579***	-0.434***	-0.012	-1.143*
	(-3.71)	(-3.74)	(-3.04)	(-0.41)	(-1.80)
Store Manager Change	0.081	0.016	-0.057	-0.017	-0.036
	(0.56)	(0.11)	(-0.67)	(-0.52)	(-0.06)
Sales Days	0.289***	0.266***	0.087	-0.000	0.089
	(4.55)	(3.35)	(1.23)	(-0.06)	(0.80)
Intercept	10.082***	7.775***	-0.425	0.288***	-1.817
	(24.80)	(15.23)	(-0.91)	(5.86)	(-0.58)
Store FE?	YES	YES	YES	YES	YES
N	692	688	368	692	181
adj. R^2	0.210	0.131	0.070	0.145	0.022
adj. R^2 (alt. est.)	0.938	0.900	0.079	0.643	0.079

Notes: We use a difference-in-differences specification and estimate regression coefficients using OLS with standard errors clustered by store. In all cases, t-statistics are reported in parentheses underneath the corresponding estimated coefficient. Two-tailed statistical significance is indicated, respectively, with: * = (p<0.10); ** = (p<0.05); *** = (p<0.01). Our estimations are performed using the Stata procedure *xtreg*, with fixed effects and standard errors clustered at the store level. While this procedure yields appropriate standard errors, the R^2 is generally underestimated. In the last row we report the R^2 relative to the estimation of the same model using the Stata procedure *areg*, which fits a linear regression absorbing the categorical factor *Store*, which yields a more realistic R^2 in settings where the number of clusters is large. The variable *Late Payment* is an indicator variable equal to 1 if the team leader of the store was paid after the half of the close stores at least one time in the pre-period, and zero otherwise. Because the assignment of a store to the treatment versus control group is time-invariant, the inclusion of store fixed effects causes the coefficient relative to the variables *Treatment* and *Late Payment* not to be estimated, hence we are not reporting a row for these variables. All variables not defined here, are defined in Appendix 3.