

Corporate Culture: Evidence from the Field*

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ABSTRACT

Ninety-two percent of the 1,348 North American executives we survey believe that improving corporate culture would increase firm value. A striking 84% believe their firm needs to improve its culture. But how can that be achieved? Our paper provides some guidance by documenting the following: executives' views on what corporate culture is and how it operates, distinguishing between stated values and everyday norms; the extent to which culture influences value creation (productivity, mergers), ethical choices (compliance, short-termism), and innovation (creativity, risk-taking); and what works against a value-enhancing culture (incentive compensation, investors). Finally, we provide evidence that suggests that the executives' survey responses are reliable and consistent with external data.

JEL classification: D23, G23, G30, K22, M14, M41, O16.

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Corporate culture is claimed to be an important driver of business value. However, there are many unanswered research questions such as: how do we measure corporate culture, is it possible to assign a dollar value to culture, what is the relation between the elements that constitute a firm's culture and performance, do leaders invest enough in culture, and how do investors, incentive compensation, and various governance structures reinforce or work against a value-enhancing culture? Our research seeks to make progress on answering these questions and more.

Our approach to studying culture is an observational study that includes a detailed survey of 1,348 corporate executives in North America and in-depth interviews of an additional 18 prominent business leaders. This approach provides insights into top executives' views of culture. Our analysis of executives' views can be broken into three main blocks: (i) what do executives think corporate culture is, (ii) does culture influence corporate valuation and actions, and (iii) what do executives think works for and against a value-enhancing culture? Finally, we evaluate common criticisms of surveys and provide evidence that suggests that our sample is reasonably representative, with responses that are authentic and consistent with external data sources.

We began our investigation of the first question by asking executives in interviews, "What is corporate culture?" The executives characterized culture as "a beliefs system," "a coordination mechanism," "an invisible hand," "how employees interact with one another," "a standard of behavior," and "the tone for what type of company this is." We further explored this definitional insight by beginning the survey with the open-ended question, "Briefly, what words or phrases best describe the current corporate culture at your firm?" Ninety-three percent of executives describe their culture as values-based, and some of the most common cultural values are results-orientation (55%), community-orientation (49%), collaboration (39%), and adaptability (38%). Overall, the executives' views of corporate culture parallel academic definitions¹ and support the notion that cultural values are focal points for conveying aspiration

¹According to O'Reilly and Chatman (1996), culture includes "the values and norms widely shared and strongly held throughout the firm that help employees understand which behaviors are and are not appropriate."

(Kreps, 1990; Hermalin, 2013).

The executives' descriptions of what culture is can be grouped broadly into cultural *values* and cultural *norms*. While values are the ideals employees strive to fulfill, norms reflect whether employees "walk the talk" by actually living out these values. For example, integrity is a cultural value to live up to, while fostering a willingness to report unethical outcomes is a cultural norm that reflects integrity. We operationalize our measure of cultural norms via direct survey questions about the actual behaviors that employees' exhibit. Thus, one contribution of our study is to broaden the understanding of how culture relates to business outcomes by splitting culture into values (big principles) and norms (day-to-day practices).

We start our empirical analyses by presenting descriptive statistics about cultural values and norms conditional on firm characteristics. By testing whether executives' views differ by characteristics, we begin to learn about potentially important components of a deeper understanding of culture. For example, we find that there are large numerical differences in the average importance of values and norms in relation to a firm's position in its industry. Executives at firms seeking to challenge the industry leader report stronger values and norms than do executives at firms in the middle of the pack. We also show that employee turnover is high when differences between cultural values and norms are large. Finally, we observe other interesting and sometimes unexpected correlations such as high managerial ownership being positively linked to strong culture, more so than is top executive ownership.

Next, we explore executive views on the second question: does culture influence corporate valuation and actions? Starting with the former, we document that executives strongly believe that an effective corporate culture enhances firm value: 91% of executives consider corporate culture to be "important" or "very important" at their firm. While it may not be surprising that executives say culture matters, it might be surprising that it matters so much that 54% of executives would walk away from an M&A target that is culturally misaligned, while another one-third would discount a misaligned target by between 10%-30% of the purchase price. In fact, when executives rank "the things that contribute to long-term firm value," culture ranks highest. Executives also link culture to a wide range of actions and decisions including ethical

choices (compliance, short-termism), innovation (creativity, risk taking) and value creation (productivity, investment). For example, 85% believe a poorly implemented, ineffective culture increases the chance that an employee might act unethically or even illegally. Seventy-seven percent of executives indicate that culture plays a moderate or important role in compliance decisions, and 69% indicate the same about the importance of culture to financial reporting quality.

The executives' responses also point to the role of culture in firms possibly taking myopic actions that boost short-term stock price at the expense of long-term value. A majority believe that an effective culture would reduce the tendency of companies to engage in value-destroying end-of-quarter practices such as delaying valuable projects to hit consensus earnings. Consistent with the executives' qualitative responses indicating a link between culture and short-termism, when we use a hypothetical question that asks respondents to choose between two otherwise identical projects with five-year durations, we find that 41% would choose the NPV-inferior project that favors short-term profitability. Among executives that choose projects that enhance long-term value (over projects that enhance short-term objectives), 80% indicate their firm's culture influences their choices.

The third question we explore with our survey is what do executives think works for and against a value-enhancing culture. While 92% of executives believe that improving their firm's culture would increase the value of their company, only 16% of these executives believe that their own firm's culture is where it needs to be. Thus, it is important to understand what is preventing these executives from improving their culture and maximizing value. To help contextualize this issue, we draw from the broader literature on institutions (North, 1991; Guiso, Sapienza, and Zingales, 2015a) and incentive structures (Holmstrom and Milgrom, 1991; Bénabou and Tirole, 2003). As Figure 1 illustrates and prior literature suggests, corporate actions can be influenced by formal policies such as governance structures and incentive compensation but also by less tangible and more informal things like culture. Figure 1 is our attempt to illustrate how these complex forces relate to each other, and it suggests that the effectiveness of corporate culture and thereby its ability to be value-enhancing depends on the

alignment of values and norms, as well as possible interactions with formal institutions and leadership.

Examining conditional correlations within the context of the framework in Figure 1, we find that executives believe that formal institutions such as governance and compensation can either reinforce or work against corporate culture. Interestingly, among the subset of executives who say that incentive compensation is influential in setting the current culture, these executives also report that certain elements of culture are less likely to be present, such as integrity and a willingness to report unethical behavior. Intriguingly, executive perspectives on the effectiveness of their current culture has a somewhat stronger statistical association with cultural norms (versus values). While this is only a correlation and executives do not explicitly say that norms matter more than values, it does suggest the potential usefulness of distinguishing between aspiration and day-to-day actions in follow-up research.

Finally, given that leaders believe that an effective culture positively influences value creation, we ask them what else they believe prevents their firm's culture from being effective in practice: 69% blame their firms' underinvestment in culture. Even more surprising, nearly one-fifth of respondents indicate that their company's leadership works against the firm's corporate culture being effective. Given that this is a survey of top managers, this then begs the question of why managers say they underinvest in culture. Open-ended responses provide numerous insights into what executives perceive to be the cause of underinvestment in culture. External forces include impatient investors, inadequate governance structures, and industry standards. While executives are less likely to identify internal shortcomings as the source of the underinvestment in culture, some do and the key factors they highlight are: (i) trust among employees and challenges coordinating; (ii) capacity constraints such as limited time or resources; and (iii) a lack of a catalyst (e.g., regular investment would be ideal but only a broken culture convinces others that investment is needed).

One key advantage of using a survey is that we can directly ask the executives who are most responsible for corporate culture about their views of culture at their firms. Survey data thus provides unique data about culture, relative to attempting to infer corporate culture

from other data sources. Of course, as with any survey, there are three primary concerns: (i) that the respondents may be a selected sample of executives interested in culture, (ii) that survey answers could be self-serving, and (iii) that observed correlations may be driven by some unobserved common characteristic (e.g., product market success of the firm).

With respect to the first concern, by conducting a “culture survey,” those who respond to the survey could be a selected sample of executives who are very interested in culture and thereby more likely to view culture favorably. One of the best pieces of evidence that we have to mitigate this potential concern is that we conducted a second survey as part of the regular Duke Quarterly CFO Global Business Outlook survey that asked a broad valuation question that relates to a question we asked on the culture survey. Specifically, we asked “Of all the things that contribute to long-term firm value, for my firm I rank the following items as a Top 3 Value Driver.” Other than appearing as one choice on this specific question, the words corporate culture did not appear in this separate survey. The results from this separate survey are consistent with the findings from our primary culture survey; namely, that culture is viewed by executives as the top driver of corporate value. Finally, our summary statistics from the demographic questions suggest those answering this survey are broadly similar to those who have responded to prior Duke surveys, which were not about culture.

The second critique (item ii above) is that survey respondents may bias their responses by overweighting outcomes they think the researchers want to hear and underweighting less favorable outcomes. To ascertain whether there is an appreciable bias in the survey responses, we compare the survey responses for both culture and business outcomes with external data sources. While the survey is confidential and does not require subjects to disclose their names, we can match about 15% of the responses to publicly available data. We externally validate the culture measures by matching the survey responses to data from crowd-sourced employee reviews from Glassdoor, a career intelligence website that attempts to provide transparency about jobs, salaries, and companies; we also match to corporate websites. First, we find that the survey measures of the effectiveness of culture are significantly associated with higher number of stars for Glassdoor’s five-star rating system for company culture.

Second, we compare executives' written descriptions of their culture with what is advertised on their websites and written in Glassdoor company reviews. The survey measures are more associated with the Glassdoor reviews than with the website measures, which suggests that the survey may more closely reflect actual than advertised culture. To explore this issue in more detail, we quantify the degree of misalignment between advertised values on the website and survey responses. As these survey and website values become more misaligned, executives are significantly more likely to indicate that their culture does not track stated values and also that their culture is not where it should be.

Third, we show the survey-based measure of culture are not just positively associated with survey-based metrics of business outcomes but also external measures such as Tobin's Q and Total Q (Peters and Taylor, 2017). In addition, we link our survey-based measures of specific cultural values and norms to several external measures of innovation, value creation, and financial reporting quality such as financial restatements.

The final concern (item iii above) is that the conditional correlations that we observe among the responses are driven by some unobserved factor. While causal statements are not possible in our context and we cannot eliminate the possibility that our conditional correlations are driven by some omitted unobservable variable, we do include a rich set of control variables and focus only on those results that do not meaningfully change as various control variables are included. In addition, in the Appendix we perform additional checks on the correlations we report, including placebo tests and the "halo approach" used by Guiso, Sapienza, and Zingales (2015b), as ways to mitigate inference concerns associated with potential measurement error.

This study provides new information about how executives view corporate culture, gauges the financial value of culture, discerns how culture relates to activity inside the firm, and describes what executives think works for and against a value-enhancing culture. We learn that culture, both values and norms, appears to matter a lot to executives and is believed to have pervasive influence over activities within the firm. Moreover, some topics that have long interested researchers like incentive structures and corporate governance appear to work against culture in some cases. By documenting these correlations, we help to broaden the

literature on corporate culture from one that views culture as a vague concept loosely related to values to one that unpacks elements of culture and helps show how and why the elements are value-relevant for a variety of topics central to financial economics: ethics (Guiso, Sapienza, and Zingales, 2006), whistle-blowing (Bowen, Call, and Rajgopal, 2010; Dyck, Morse, and Zingales, 2010), corruption (Gao, Lisic, and Zhang, 2014; Liu, 2016; Pacelli, 2019), risk (Fahlenbrach, Prilmeier, and Stulz, 2012; Grennan, 2021), myopia (Graham, Harvey, and Rajgopal, 2005; Dichev, Graham, Harvey, and Rajgopal, 2013), financial reporting choices (Healy and Palepu, 2001; Dechow, Ge, and Schrand, 2010), compliance (Kedia, Luo, and Rajgopal, 2018), incentive compensation (Lazear, 2000; Cheng, Hong, and Scheinkman, 2015), corporate governance (Shleifer and Vishny, 1997; Grennan, 2020), leadership style (Bertrand and Schoar, 2003; Graham, Harvey, and Puri, 2013), middle management practices (Bloom and Van Reenen, 2007; Bloom, Sadun, and Van Reenen, 2012), social capital (Guiso, Sapienza, and Zingales, 2004; Servaes and Tamayo, 2017), relational contracts (Macaulay, 1963; Gibbons, 1998; Baker, Gibbons, and Murphy, 2002; Gibbons and Henderson, 2013), and reputation (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997). Finally, our research highlights the vital, but underappreciated, role that culture plays in value creation (Hermalin, 2001; Guiso, Sapienza, and Zingales, 2015b; Grennan, 2020).

The rest of the paper proceeds as follows. **Section 1** describes how we gather the data and measure corporate culture. **Section 2** presents the survey results. **Section 3** explores the factors preventing culture from being improved, and **Section 4** evaluates common concerns related to the use of survey data. Some concluding remarks are offered in the final section. The online appendices contain a copy of the survey, variable definitions, and many additional analyses.

1. Measuring corporate culture

In this section, we discuss how we quantify the cultural values and cultural norms that underlie corporate culture. Given that we measure corporate culture based on a survey, we also discuss the reliability associated with data gathered from surveys.

1.1. *Interview and survey methods*

To measure corporate culture, we began by interviewing 18 corporate executives, mostly CFOs and CEOs. To learn about culture in a variety of settings, we interviewed executives that lead public and private firms, those in early and late lifecycle stages, conglomerates, singularly-focused firms, and holding companies. Some executives compared and contrasted their experience at multiple firms. Overall, the current and past employment of the executives comprise a set of firms that contribute meaningfully to the U.S. economy and reflect about 20% of the market capitalization of the NYSE plus NASDAQ. The average firm in the interview sample is much larger (mean sales of \$47 billion in 2015), has more leverage, greater profitability, lower sales growth, and higher credit ratings than the typical Compustat firm.

We incorporated the knowledge gained about corporate culture from the interviews into the design of our survey instrument. Then, we sent survey requests to a list of CFO and CEO email addresses maintained by the Fuqua School of Business at Duke University and the Columbia Business School. From this list, we had a 13.4% response rate, which is a higher response rate than in most previous corporate surveys (Graham and Harvey, 2001). We supplemented the business school email lists with emails from external sources such as *CFO* magazine.² We include additional interview and survey details as well as a copy of the survey instrument in [Appendix A](#). For example, details such as how we randomly scramble the order of choices within a question, so as to mitigate potential order-of-presentation effects, are included.

1.2. *Corporate culture measures*

In total, we collected 1,898 responses. We eliminate responses from participants located outside the United States and Canada to attenuate effects of possibly confounding influences from national cultures. We also remove respondents working for the government and non-profits and responses that do not fill out the first question of the survey. Applying these filters

²We do not have the CFO magazine source list to evaluate an overall response rate given that their list is proprietary. In Section 4.2, we evaluate the possibility of bias due to the different email lists that we used to solicit responses. We also limit to only the Duke and Columbia sample and find similar results to what we find using the full sample. The presented results are based on a sample that includes all three data sources.

produces 1,348 observations from North American executives at public and private firms. The Duke and Columbia sample represent 750 responses (56% of the sample) and the magazine sample represents 598 responses (44% of the sample). Following the recommendation by List (2007), we benchmark the demographics from our public survey firms to Compustat firms. These results are available in Appendix Table C.1. Our public firm respondents work for larger firms with more employees and sales revenue. Survey firms are also more likely to report an after-tax profit but they have similar leverage and return on equity (ROE).

In Appendix Table C.2, we summarize the demographic information collected for the full sample of survey respondents. Seventy percent of respondents indicate their firm is private. The median executive is from a firm that is 30 years old with three segments and 300 employees. About half of firms are family-owned. The average CEO age is 55 with a tenure of seven years. Eighty-four percent of these firms earn an after-tax profit, and the mean revenue growth rate is 13%. We observe a wide range of revenue with about half indicating revenue less than \$100 million and a quarter indicating revenue greater than \$1 billion. Similarly, we observe a wide range of number of employees with a 26% indicating fewer than 50 employees and 16% indicating more than 10,000 employees.

We begin the survey with an open-ended question asking respondents to briefly describe their firm's current culture: "Briefly, what words or phrases best describe the current corporate culture at your firm?" We hand-code 1,348 written responses to categorize elements of culture. To establish the credibility of our hand-coding, we had five researchers (one from our team and four independent research assistants) hand-code the written responses. To create a combined hand-coding value, we require at least three of the five researchers to agree on the coding. Overall, our hand-coding of the executives' responses to Q1 indicates that 93% of executives say that their culture is values based and, on average, they describe 2.5 cultural values at their firm. This description of culture is consistent with using focal points (Schelling, 1960; Kreps, 1990) to convey the culture.

Next, the five independent researchers map each written response to the six well-known cultural values established by O'Reilly, Chatman, and Caldwell (1991) and Chatman, Caldwell,

O'Reilly, and Doerr (2014). We add a seventh cultural value “community-orientation,” which reflects the notion of caring for the community through social and environmental responsibility, good citizenship, respect and diversity to map to the values identified by Guiso, Sapienza, and Zingales (2015b).³ Thus, our measure of corporate values aligns with that in the established literature, and we allow the executives’ own words to define their firms’ values.

The seven cultural values are adaptability, collaboration, community, customer-orientation, detail-orientation, integrity, and results-orientation. We code a cultural value as 1 when the executive provides a description consistent with the following:

1. **Adaptability:** willing to experiment, fast-moving, quick to take advantage of opportunities, taking initiative
2. **Collaboration:** team-oriented, supportive, not aggressive, low levels of conflict
3. **Community:** respectful of diversity, community, and the environment, inclusive, caring, and open
4. **Customer-orientation:** listening to customers, being brand driven, taking pride in service
5. **Detail-orientation:** paying attention to detail, being precise, emphasizing quality and safety, being analytical
6. **Integrity:** high ethical standards, being honest, transparent
7. **Results-orientation:** high expectations for performance, focus on achievement, competitive, demanding

In the analysis that follows, we assign a 1 to a given value if at least three out of five reviewers agree a cultural trait is present. Across the five independent reviews of the executives’ responses, the average Spearman’s rank-order correlation coefficient is 0.54 for the cultural values. The hand-coders strongly agree about the cultural value of customer-orientation (0.72 correlation) while there is less agreement about detail-orientation (0.34). Finally, the researchers

³We also hand-code responses to the open-ended subpart of our 14th survey question to supplement the culture information we gather from question 1. Question 14 states “Please provide a specific example of how culture affects X,” where X is various business outcomes (e.g., productivity). We code these written answers to identify the existence of any of same seven cultural values, to supplement our coding of the first question.

hand-code additional characteristics of the executives' responses. These characteristics help both to clarify what executives think culture is and serve as control variables in subsequent analyses. These additional characteristics show, for example, that 63% of executives express a positive sentiment in general, 16% a negative sentiment, 3% a mixed tone, and the rest do not express sentiment. About 6% suggest that their culture is in transition or changing. Some associate culture with management practices as evidenced by 8% discussing how decisions are delegated within the firm and 18% discussing the spirit with which actions were taken. Only 8% of responses were not useful in the sense that they either gave a textbook definition of culture or said something uninformative such as "the culture is okay."

1.3. Advantages of Survey Approach

The paper relies on an original survey of CEOs and CFOs to assess the importance of cultural values and norms in companies. Strengths of our survey include that it is large scale in nature and it provides insight into top management's views on corporate culture. Surveys have been conducted before within the management literature, but on a much smaller scale. Our survey approach offers two distinct advantages to previous studies. First, the size of our sample is large. Second, the detail of our survey and inclusion of open-ended questions allow us to gather information without confining responses to those defined by the researcher.⁴

Within the economics literature, researchers have focused either on time-invariant features of culture such as firm fixed-effects (Cronqvist, Low, and Nilsson, 2009; Fahlenbrach, Prilmeier, and Stulz, 2012) or have attempted to construct time-varying measures of culture using publicly available data (see Gorton, Grennan, and Zentefis (2021) for an overview of the measurement of culture).⁵ The detailed nature of our interviews and survey enables us to explore both time-

⁴Four popular survey tools exist (Denison, 1984; Cameron, Quinn, DeGraff, and Thakor, 2006; O'Reilly, Chatman, and Caldwell, 1991; Cooke and Rousseau, 1988) but a recurring critique of these tools is that they can confound constructs (Chatman and O'Reilly, 2016). For example, by including outcomes such as employee productivity or formal institutions such as compensation in their measurement of culture, they potentially cloud statistical inferences about culture itself.

⁵Common approaches include: (1) a firm's appearance in the top 100 Great Places to Work (Edmans, 2011; Guiso, Sapienza, and Zingales, 2015b); (2) analysis of employee-generated reviews of their firms from career intelligence websites (Grennan, 2020; Makridis, 2018); (3) analysis of corporate financial reports, conference

varying and time-invariant aspects of culture. Further, by cross-checking our data against corporate websites and career intelligence websites (Section 4.1), we help to build a bridge for future researchers seeking to measure culture.

Finally, meaningful differences exist between corporate culture and studies of societal culture (Guiso, Sapienza, and Zingales, 2008; Fernández, 2011; Algan and Cahuc, 2013; Karolyi, 2016). The speed of change and element of purposeful design in corporate culture do not exist in societal culture, where beliefs slowly evolve over decades (Guiso, Sapienza, and Zingales, 2006; Fernández, 2013). In this sense, cultural differences and their association with business outcomes may be easier to observe given the simpler, more controlled corporate environment (Guiso, Sapienza, and Zingales, 2015a). Further, studies of societal culture often examine moral and social values (e.g., preference for redistribution) which are known to weaken in market settings (Roth, Prasnikar, Okuno-Fujiwara, and Zamir, 1991; Falk and Szech, 2013). Thus, an important contribution of our paper is to highlight the cultural values and norms that are positively associated with economic outcomes in for-profit settings.

2. Survey Results

2.1. Summary statistics

Panel A of [Table 1](#) provides descriptive statistics for individual cultural values as well as for an aggregate measure (i.e., the mean of the individual values). We create the aggregate variable to solve an econometric issue discussed below and to later test if cultural values broadly are associated with firm performance. The most commonly listed values are adaptability, community, results-orientation, and collaboration. The cultural value variables are coded as -1, 0, or 1 to reflect that an executive might describe a given value in positive or negative terms. For example, a firm with a strong team-oriented culture receives a score of one for the “collaboration” value, while a firm with an every-employee-for-herself culture receives a score of negative one. Firms that do not mention collaboration receive a score of zero. Thus, when

calls, and websites ([Audi, Loughran, and McDonald, 2016](#); [Li, Mai, Shen, and Yan, 2021](#); [Grenman, 2021](#)).

we aggregate, the overall sign of a given value is preserved. See [Appendix B](#) for additional details on construction of each value.

Our measures of the cultural values are similar to the sample statistics for cultural values reported in [Guiso, Sapienza, and Zingales \(2015b\)](#), who analyze cultural values advertised on the websites of firms that are in Fortune’s “100 Best Companies to Work For” list. Advertised values, however, may be more likely to include aspirational rather than current, actual values. By asking directly, our measures of culture are more granular in that we specifically ask about the current culture and separately ask about how well the current culture tracks the aspirational culture. A company’s website would not describe their culture as “non-inclusive, political and backstabbing” or advertise that they value “noncooperation.” Yet some of our respondents use descriptions like these to indicate their firm does not value collaboration. We carefully explore the reliability of our measures in the next subsection.

Panel B of [Table 1](#) provides descriptive statistics for the cultural norms as well as for an aggregate measure (the mean of the norms). The most commonly listed norms are trust, decision-making that reflects long-term corporate interests, agreement about goals and values, and coordination among employees. The norms are extracted from survey question 6, which asks “in the context of your firm’s current culture, please indicate which factors determine the effectiveness of your culture.” A score of one indicates a norm that enhances cultural effectiveness, a score of zero indicates no effect, and a score of negative one indicates a norm that works against culture being effective. Other norms include urgency with which employees work, employees’ comfort in suggesting critiques, consistency and predictability of employees’ actions, employees’ willingness to report compliance risks or unethical behavior, and new ideas develop organically. Executives perceive the norms of urgency with which employees work and consistent and predictable actions by employees as the least important drivers of an effective culture.

As previously described, we highlight an important difference in how we define cultural values versus norms. The cultural values are derived by mapping open-ended responses into values defined in the literature. This approach tends to elicit responses about well-established

and aspirational values. The norms, in contrast, are ascertained via direct questions about the actual behaviors that employees exhibit on a day-to-day basis. This feature of the survey design helps to separate cultural values from norms and allows for a more nuanced construct of culture than is possible without a detailed survey tool. Having said this, we acknowledge that while conceptually there is logic behind separating cultural values and norms, there is not always a sharp distinction in practice. Even if despite our best efforts our measures do not cleanly distinguish the effects of values separately from the effects of norms, our findings are suggestive that some combination of values and norms is associated with an effective corporate culture.

Panel C of [Table 1](#) provides descriptive statistics for leadership and formal institutions, which include corporate governance, the finance function, the human resources function, and incentive compensation. The leadership and formal institutions represent responses to question 13 which asks “do the following items reinforce or work against the effectiveness of your corporate culture?” A score of one indicates a formal institution that reinforces an effective corporate culture, a score of zero indicates no effect, and a score of negative one means it works against effective culture. Leadership plays a prominent role in determining the effectiveness of corporate culture: Nearly two-thirds of respondents indicate that leadership reinforces an effective culture, while nearly one-fifth indicate that their company’s leadership works against the firm’s corporate culture being effective. We explore this issue further in [Section 3](#).

Panel D of [Table 1](#) provides descriptive statistics about corporate outcomes grouped by ethics, innovation, and productivity/value⁶. The responses stem from question 14 which asks, “To what extent does the corporate culture at your firm affect the following items:” where a score of 4 = big effect, 3 = moderate effect, 2 = little effect, and 1 = no effect. In addition, the panel includes one outcome asked as a separate question in the demographics section, “How important is meeting or beating earnings at your firm?” Because we use a survey, these are the perceptions of executives about which outcomes are likely affected by culture. The ethics outcomes include compliance, tax aggressiveness, quality of financial reporting, and importance

⁶In Appendix Table C.3, we report the pairwise correlations among the items shown in [Table 1](#).

of meeting or beating earnings. The innovation outcomes include creativity and amount of project risk. The productivity and firm value outcomes include firm value, profitability, and productivity. The aggregate for all outcomes is the simple average of the ethics, innovation, and productivity/firm value aggregate outcomes. The survey responses indicate that more than 40% of executives believe corporate culture has a big effect on whether a firm is compliant with accounting standards, creativity, project risk, productivity, profitability, and firm value. 60% of public firms say culture affects their desire to meet or beat EPS targets.

2.2. *Culture by industry*

Table 2 shows that our measures of culture appear to vary intuitively across industries. For example, high levels of adaptability and the community ideals that millennials embrace are most evident in technology firms, whereas the cultural value of customer-orientation is tied more closely with health, service, and financial firms. All of the cultural values exhibit statistically significant variation across industry as evidenced by a joint F-test. Cultural norms also exhibit statistically significant variation across industry but the magnitude of the difference is small for some norms and large for others. For example, decision-making that reflects the long-term is weak in the finance industry (0.52) and strongest in the services industry (0.61), but the magnitude of the difference is small. In contrast, the development of new ideas organically is again weakest in the finance industry (0.36) and strongest in the services industry (0.67), but in this case, the high minus low magnitude of the cross-industry difference is more than three times larger. Other norms that have substantive variation across industries are willingness to report unethical behavior and employee comfort in suggesting critiques.

The rightmost columns of **Table 2** analyze cultural values and norms by a firm's self-reported competitive position within its industry. We see that firms that are industry leaders and near-leaders, on average, exhibit higher scores for cultural values and norms than do firms in the middle of the pack. At the other end of the scale, challengers also have higher scores for values and norms than middle-of-the-pack firms, which reveals an overall pattern between competitive position and culture that effectively is U-shaped. The difference in magnitude by

competitive position is statistically significant as evidence by the joint F-test for equivalence of the coefficients. Big differences in culture for firms in different competitive positions is consistent with earlier survey work from [Kotter and Heskett \(1992\)](#).

2.3. Culture by firm and executive characteristics

At the end of the survey, we collect demographic information about the sample of executives and their firms. [Table 3](#) presents the average of the elements that comprise culture (values and norms) conditional on demographics. Across the 15 firm characteristics that we evaluate, we find some variables for which there are few differences, some for which almost all measures of culture are different, and some for which only a few cultural values and norms are significantly different. For example, when we consider family vs. non-family control (second page of table), we find that only the cultural values of collaboration and community-orientation are significantly stronger in family firms. Similarly, when we compare public and private firms, we see that only the cultural value of integrity and the cultural norms of goal agreement and willingness to report unethical behavior are significantly different.

We find few differences across measures of cultural values and norms for single vs. multi-segment firms. In contrast, some of the categorizations for which we observe meaningful differences are low- and high-employee turnover, low- and high-CEO turnover, and low and high-revenue growth. Firms with low-employee turnover uniformly report stronger cultural values and norms. This suggests that researchers looking for a simple proxy for strong or weak cultural values and norms may want to look at employee turnover relative to industry averages. Interestingly, while revenue growth is correlated with the reported strength of values and norms, this pattern does not appear to be the result of executives reporting such metrics to look good as other common metrics of financial performance such as profitability do not exhibit similar patterns.

Another intriguing correlation that emerges from this analysis is that the cultural value of adaptability, often emphasized by management scholars as a way to avoid the innovator's dilemma and the fate of firms like Kodak and Blackberry, varies meaningfully with leadership

characteristics. Adaptability is significantly different by CEO age and the influence of the current CEO vs. the founder or past CEO in the setting the firm's current culture. Finally, for those interested in traditional corporate finance policies like capital structure, we find that high leverage is significantly correlated with weaker cultural norms (e.g., coordination and decision-making that reflects the long-term) and corporate culture not being where it should be (Q4b). This suggests a potential future direction for researchers is to understand the extent to which different elements of culture drive financing decisions and other corporate policies that may have long-term, persistent implications for firm value.

2.4. Firm value

We now explore in detail the relationship between corporate culture and firm value. [Table 4](#) summarizes the four survey questions linking culture to firm value. The first question (Q2), “how important do you believe corporate culture is at your firm?” reveals that 91% of survey respondents consider corporate culture to be “important” or “very important” at their firms. This result is corroborated by responses to the next question (Q3), “in terms of all of the things that make your firm valuable, where would you place corporate culture?” 54% of respondents consider culture to be among the “top 3” factors affecting firm value and 79% rank culture as at least a “top 5” contributor. In another question (Q4c), 92% of executives believe that improving corporate culture would increase their firm's value.

Our interviews help to explain why so many executives believe culture is important for firm value. As one interviewee said, “culture can be described as foundational. It is the most important thing because in some ways it can influence your ability to come to solutions to all the unknown problems and challenges that you will face from inception to growth.” Another executive echoed that, “culture is the foundation of all companies, and can make or break the success of a company.”

The final question (Q11) presented in [Table 4](#) explores value effects in a hypothetical setting: “You work at a firm with an effective, strong culture. You are evaluating two acquisition targets, A and B. Both of these targets would bring the same strategic and operational benefits

if acquired, and the targets are identical in all dimensions except corporate culture. Company A's culture is very aligned with your firm's culture, whereas company B's culture is not at all aligned. Relative to how much you would offer for A, how much less would you offer for company B due to the culture misalignment?"

Our results indicate that cultural fit in M&A deals is so important that 54% of executives would walk away from an acquisition target that is a poor cultural fit, while another 33% of respondents would discount the offer price for the culturally misaligned target by 10-30%. In the M&A context, this indicates that the valuation implications of culture can be large. This is consistent with economic theory of the costs and benefits of corporate culture and the effects of "culture clash" in mergers and acquisitions (Van den Steen, 2010).

The interviews offer insight into why executives would walk away from acquisitions lacking cultural fit: "we would test for cultural fit. If the gap is wide enough it does not matter if it is a great price. We won't move forward." Another manager put it this way: "I would definitely pay more for the company whose culture is closer. Less friction and assimilation cost, we can get it all done easier, faster and at lower cost." When we asked how cultural fit is tested, one executive responded, "we had a checklist set of questions that we would ask about the elements of the culture and we would compare them with the key elements of our culture. For example, we would look for strong focus on customer, high levels of integrity, open door communication and so on ... among a list of 10-12 items." For this firm, a deal would be abandoned for targets scoring low on the culture checklist.

2.5. *Risk and ethics*

While transactions involving the boundary of the firm highlight the value of culture, theory indicates that corporate culture also relates to firm value via routine corporate actions. To understand the variety of actions potentially associated with culture, Table 5 summarizes several survey questions that link culture to employee or company actions related to risk-taking, short-termism, and ethics.

The first question (Q7) in Table 5, "Do you think your company takes the right amount of

risk in its investments to achieve its goals?” reveals that that 60% believe that their firms take on the “right amount of risk,” 29% believe their firms take “too little risk,” and 11% believe that their firms take “too much risk.” In a follow-up question (Q7b), we asked respondents whether their culture was a “very important,” “important,” “somewhat important,” or “not a reason” that their firm takes on that amount of risk. Aggregating across the three risk levels, we observe that 61% of respondents think culture plays an important or very important role in their risk decisions. While a strong positive association between risk decisions and culture (Q7) could be attributable to a third common factor, the follow-up question (Q7b) suggests a link between culture and actions. (Later, we connect the willingness to take on risky investments to corporate innovation.)

In **Table 6**, we distinguish the extent to which one or many of the different values and norms that comprise corporate culture are correlated with risk-taking. What stands out is the rapid decline in the strength of the cultural components by risk-taking category. For example, decision making that reflects the long-term has a mean value of 0.70 for those that take on the right amount of risk, 0.43 for too little risk, but only 0.26 for too much risk. An analogous pattern of meaningful variation across the categorization, and with too much risk exhibiting the lowest average score, is evident across many values and norms. The cross (+) indicates the elements of culture that are statistically significant in a multivariate regression format that includes noise, demographic, and question controls and industry fixed effects. The cultural elements with significant correlations in the multivariate specification for taking the right amount of investment risk are adaptability, integrity, results-orientation, goal agreement, decision-making that reflects the long-term, and a willingness to report unethical behavior

Returning to **Table 5**, the second question (Q8) examines the role of culture in long-term vs. short-term decision-making. This hypothetical question asks respondents to choose between two otherwise identical projects with a five-year duration. Project A has a greater NPV but reports negative cash flows for the first two years, whereas B reports positive cash flows throughout the duration of the project. A surprising 41% of respondents said they would choose the NPV-inferior project. In a follow-up question (Q8b), four-out-of-five of the 59%

who choose the project with the greater NPV say culture plays a role in their preference for the greater NPV project. In Column 4 and 5 of [Table 6](#), we distinguish the extent to which one or many of the different values and norms that comprise corporate culture are correlated with selecting the NPV-superior project. Some notable cultural norms including goal agreement and consistency and predictability of actions stand out. Again, not all cultural elements are associated with selecting the NPV-superior project, which suggests that a well-designed culture is likely to be value-enhancing.

Theory predicts that culture is likely to have its strongest association with actions that cannot properly be regulated ex ante ([Kreps, 1990](#); [Akerlof and Kranton, 2005](#)). To explore this possibility, we ask whether an ineffective culture can lead to unethical behavior (Q10): “do you think having a poorly implemented/ineffective culture at a company increases the chances that an employee would do something unethical (or even illegal)?” [Table 5](#) shows that 85% of respondents indicate that “yes”, ineffective corporate culture can lead to unethical behavior. As a test for the authenticity of this response, we compare those respondents who provide contact information after the survey is complete with those who do not. This test suggests respondents are being honest because those that did not leave any contact information are significantly more likely to agree that an employee would do something unethical (or even illegal).

The interviews highlight several channels that link corporate culture to firm performance. First, executives say that culture is perceived to enhance firm performance because it enables superior execution: “Culture is very important because it allows you to execute. Culture is like the tendons and ligaments that hold the body together and allow it to be healthy as a body and execute daily.” Second, executives indicate that culture may enhance firm performance through reduced agency costs. “When corporate culture is working at its best, it reduces dramatically the agency costs within an organization because you have an invisible hand at work inside of each of the employees that helps to guide their decisions and judgments in a way that the overall corporation would desire it to be.” For additional details on the transcribed recordings from the interviews, see [Graham, Grennan, Harvey, and Rajgopal \(2018\)](#).

2.6. *Earnings targets, financial reporting, compliance, and taxes*

Next, we seek to understand whether the channels that may link culture to performance also shape reported accounting numbers and the information content they provide to capital markets. Specifically, we summarize survey questions related to earnings targets, financial reporting, compliance and tax aggressiveness.

The final question (Q12) in [Table 5](#) explores end-of-quarter earnings management: “sometimes companies engage in end-of-quarter practices such as delaying valuable projects in order to hit market expected earnings. How likely is it that an effective corporate culture would reduce the chance that such actions are taken?” 56% of executives believe that it is very likely or extremely likely that an effective corporate culture would reduce real earnings management. Only 20% of respondents believe that an effective culture would not reduce real earnings management.⁷

Survey question 14 asks “To what extent does the corporate culture at your firm affect the following items: X,” where X is compliance, financial reporting quality, or tax aggressiveness, and the choices are 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect. As summarized in [Table 1](#) Panel D, 77% of executives indicate that culture has a moderate or big effect in compliance decisions, and 69% indicate the same about the importance of culture to financial reporting quality. To help interpret these numbers, we analyze the open-ended responses from respondents about these accounting outcomes.

Some examples where culture has a positive influence on compliance and reporting quality include: “we have a culture of playing by the rules. If we didn’t employees would be more prone to play games,” “the compliance department is always at the table whether it is in a strategy discussion or a work place error deviation. As a result, everyone feels comfortable when an issue arises and it needs to be reported,” and “integrity is a key part of our corporate culture, enhancing/reinforcing the quality of our financial reporting.” There are also several examples

⁷Real earnings management is the manipulation of business activities to smooth earnings and meet or beat analysts’ consensus forecasts. Such practices can have meaningful economic implications ([Graham, Harvey, and Rajgopal, 2005](#); [Roychowdhury, 2006](#)).

of how an ineffective culture may weaken compliance and reporting quality: “if the culture promotes or tolerates ‘rogue’ behavior then [it is] less likely to have compliance,” “the pressure to meet numbers leads to doing the wrong thing,” “an aggressive culture of risk taking impacts aggressiveness of accounting policies to compensate for high risk projects that go bad,” and “we take creative chances with numbers.”

In contrast to the compliance and reporting quality results, in [Table 1](#) Panel D only 35% of respondents think that culture has a moderate or big effect on tax aggressiveness. Again the open-ended responses help to explain why the link between culture and tax aggressiveness is weaker ([Hanlon and Heitzman, 2010](#)). For example, “our culture involves driving positive results with our customers, and tax schemes just don’t achieve that,” or “if the culture from the top promotes honesty and doing the right thing, the company will not take risky aggressive tax positions.”

2.7. Heterogeneity in actions influenced by firm type

Appendix Tables C.4, C.5, and C.6 summarize the executives’ responses about the extent to which culture influences corporate valuation and actions across public and private firms, family and non-family firms, and small and large firms, respectively. We find public firms believe that culture plays less of a role affecting the firms’ choice of investment risk and creativity, and plays a bigger role in being compliant. We find family firms and non-family ones are indistinguishable, on average, on the importance of corporate culture. Non-family firms, however, are less likely than family firms to believe culture influences earnings management or leverage, but they are more likely to believe that culture has a big effect firm value. Finally, executives from large firms are more likely than those from small firms to consider culture to be “very important” at their own firm and to report that culture has a big effect on firm value, compliance, and risk management.

3. What prevents culture from being improved?

Eighty-four percent of executives believe their firm needs to improve its culture, and a majority indicate that doing so would increase firm value. But how can that be achieved? What is preventing executives from improving their companies' cultures? In this section, we seek to better understand the factors that executives say contribute to an ineffective culture by placing their perspectives broadly in the context of prevailing paradigms for how culture works as an informal system, interacting with individuals and formal systems inside and outside the firm (O'Reilly and Chatman, 1996; Guiso, Sapienza, and Zingales, 2015a). While there can be many factors influencing the culture, we structure our exploration into systems (i.e., incentive compensation, corporate governance) and people (i.e., leadership, investors).

3.1. *The relation between corporate culture and people*

Table 7 summarizes three survey questions that explore how culture is established and what factors might contribute to an ineffective culture. The first question (Q5), "which of the following have been most influential in setting your firm's current culture?" reveals that leadership and marketplace reputation are thought to be the two most influential factors in setting the culture. Among potential leaders, the current CEO (55%), the owners (32%), the founder (30%), and past CEOs (18%) are identified as responsible for shaping the current culture. Some of the factors that executives say are less likely to be influential in setting culture directly are the formal institutions associated with corporate governance such as the board of directors (12%) and incentive compensation (12%). These results align with theory suggesting that leadership sets culture (Hermalin, 2013).

The second question of **Table 7** is question (Q4d) which asks "what is preventing your firm's culture from being exactly where it should be?" The responses highlight both the importance of leadership and what we can learn by studying the effects of cultural values separate from the effects of day-to-day norms. For example, 39% of executives believe that "Our cultural values are not fully aligned with our business needs," and 48% cite day-to-day norms like

inefficient workplace interactions as preventing an effective culture. This suggests executives looking to improve culture may want to focus on developing cultural norms that support the stated values. Finally, what may be most remarkable about the responses to this question is that 69% of executives themselves agree that “leadership needs to invest more time in the culture.”

To try to gain insight into why management may be underinvesting in culture, we hand-coded responses to open-ended questions to flag any instances in the text where executives describe the challenges they faced. We then systematically categorized those into three domains: organizational, investor, and leadership. While the organizational elements are consistent with Schein (2017), our qualitative evidence of executive self-blame and the influence of investors is new. Some interesting highlights regarding the organizational domain involve underinvesting because of challenges associated with: (i) setting cultural goals and objectives; (ii) measuring culture; (iii) not having strategies or appropriate reward and punishment systems to correct for cultural problems; (iv) difficulties establishing group boundaries for employees and contractors; and more generally, (v) issues associated with the distribution of power, trust, and openness among employees.

Another factor contributing to an ineffective culture is the executives’ perception that investors do not support a focus on culture. Some executives noted a tension between delivering growth for investors and culture. In this context, one executive noted that, “we are very thoughtful in terms of growth and recognize that growing too fast will erode the company culture. We are particular about the projects we accept and value quality over quantity.” Executives also blame impatient investors. This set of results suggests that managers believe that investors influence culture, and therefore suggests that in some cases investors may need to change their stance about culture to achieve greater investment returns.

Finally, some executives blame themselves and reveal how their own personal characteristics and beliefs can prevent meaningful investment in culture. A few executives report that their incentives are not aligned with investing in culture because doing so is a high-risk, long-term action. Instead, these executives seek to maintain the status quo by looking for low risk, high

near-term success outcomes to avoid failures and the drastic reactions that come with failures. Executives also commonly note how their personal actions are influenced or constrained by other factors such as: (i) a belief that not investing in culture was standard for the industry; (ii) capacity constraints such as limited time or resources available to coordinate an improvement in culture; and (iii) a lack of a catalyst to drive the necessary changes.

3.2. *The relation between corporate culture and incentive compensation*

While leadership, investors, and organizational factors may constrain investment in culture, Panel B of [Table 7](#) reveals that formal policies (e.g., compensation and corporate governance) have a more bifurcated influence. For example, 38% of executives strongly agree or agree that formal policies work against the intended culture, while another 39% of executives feel the opposite and strongly disagree or disagree that formal policies work against the intended culture. The final question in Panel C of [Table 7](#) explores the potential negative influence of formal institutions in more detail. Question (Q13a/b) asks “what are the most important ways incentive compensation [or in a separate question, the finance function] works against your corporate culture?”⁸ We learn that some executives think incentive compensation works against the effectiveness of culture by attracting and/or retaining the wrong type of people to the firm (47%), focusing employees too much on short-term objectives (27%), and encouraging insufficient risk-taking (26%). Taken together with the results above, these results suggest that while formal structures such as incentive compensation may have a limited direct role in *setting* company culture, they may also have important indirect relationships that *limit the effectiveness* of the chosen culture.

The insight from the survey that executives think that incentive compensation at times works against corporate culture is perhaps surprising because a central tenet of economics is that incentives promote better performance through enhanced effort ([Gibbons, 1998](#); [Lazear,](#)

⁸To reduce the time required to complete the survey, we randomly selected approximately 40% of respondents to answer the question about incentive compensation and another 40% to answer with respect to the finance function. The presented results are for firms at which the incentive compensation (or separately, the finance function) works against the effectiveness of the culture.

2000). To explore this issue further, in [Table 8](#) we examine firms' scores for the various values and norms that comprise culture, conditional on survey responses about incentives and compensation.

In the first three columns, we report the means for each cultural value and norm grouped by executives' responses to Q4d "What is preventing your firm's culture from being exactly where it should be? Firm policies work against the intended culture (e.g., compensation)." The response categories are (strongly) disagree (Column 1), neutral (Column 2), or (strongly) agree (Column 3). We also report the significance level of a t-test of the null hypothesis that the group mean between neutral and agree are equivalent (*'s). The univariate analyses show significant differences between categories.⁹ Those who agree that firm policies work against the intended culture have lower mean scores for all values and norms.

The cross (+) indicates those elements of culture that are statistically significant in a multivariate regression format that includes noise, demographic, and question controls and industry fixed effects. In these regressions, we see adaptability, goal agreement, and trust all are significantly lower when firm policies like compensation work against the intended culture. These values and norms appear to align with dimensions highlighted as important in the literature on formal vs. informal contracting ([Baker et al., 2002](#); [Hart and Moore, 2008](#)), offering one potential interpretation of why this set of executives view their compensation system as working against their culture.¹⁰

In Columns 4 to 5, we get a slightly different view of the effects of incentive compensation. These columns explore not whether compensation works for or against culture – but rather they examine when incentive pay is selected as "influential in setting the current culture" (Q5). In this case of setting culture, we see that only a few elements of culture are significant, yet they are notable. For example, the cultural value of integrity and the cultural norm of being

⁹In untabulated analyses, we also observe consistent and significant differences when we examine Q13 which asks a similar question about incentive compensation but asks instead if it reinforces the effectiveness of the culture rather than works against.

¹⁰In the relational contracting literature, firms use their detailed knowledge of their specific situation to *adapt* to new information; however, such contracts cannot be enforced by a third party and so must be self-enforcing. In practice, this means the relationship must be clearly understood (*goal agreement*) and parties must be *trusted* not to renege.

willing to report unethical behavior are significantly lower when incentive pay is influential in setting the culture.

Finally, in Columns 6 to 9, we group executives' demographic responses about incentive pay for executives and managers. Two interesting patterns emerge. First, univariate t-tests suggest that the strength of the cultural values and norms are not statistically significant for higher versus lower executive incentive pay; however, they are statistically different for higher versus lower managerial incentive pay. Second, conditional on higher managerial incentive pay in Column 9, cultural norms have larger magnitudes than do values in both the univariate and the multivariate setting. This highlights the particular importance of cultural norms, that is, the day-to-day actions that employees take to live out aspirational values.

Taken together, the direct survey questions as well as the open-ended questions demonstrate that a multitude of factors can reinforce or undermine the effectiveness of culture. Given that executives in our survey indicate that designing and implementing mechanisms to help leadership align cultural values, norms, and formal institutions would be beneficial, future research should explore these issues. For example, research could examine (i) whether incentives impede culture or complement it, especially in settings that allow for causal inference, or (ii) examine the nuance between stock compensation grants to rank-and-file employees, the effectiveness of whistle-blower policies or speak-up initiatives, and a value-enhancing culture.

4. Validation of survey responses

By using a survey to measure corporate culture, we gain direct insights from the executives who are most responsible for setting the culture about their views of culture at their firms. Yet this unique benefit of surveys could be offset by three primary concerns: (i) that the respondents may be a selected sample of executives interested in culture, (ii) that survey answers could be self-serving, and (iii) that observed correlations may be driven by some unobserved common characteristic (e.g., product market success of the firm). We consider each of these concerns in subsections below.

4.1. *Are respondents a selected sample of executives?*

To understand the extent to which conducting a survey about “culture” primed respondents to make culture seem extra important, we included a single question about value creation on a later Duke quarterly CFO survey. This quarterly survey explored various corporate finance issues and included only one question related to culture. Specifically, we asked “Of all the things that contribute to long-term firm value, for my firm I rank the following items as a ‘Top 3 Value Driver.’” Other than as one choice on this question, the words corporate culture did not appear on this additional survey. Based on 484 responses, 47.9% of respondents listed culture in the Top 3 value creators among 12 choices. The confidence interval on this mean response puts it within the range of the 53.5% elicited in Q3 of the culture survey. In addition, of all possible choices, culture was the most popular, with strategic plan coming in second at 39.7%. Further, culture was deemed more important than CEO leadership, incentive compensation, and corporate governance. These additional survey results are summarized in [Table 9](#).

While the evidence suggests that our culture survey respondents are not a selected sample, we subject our data to additional sub-sample tests. The idea being that if selection is an issue, and two subsamples exhibit differential selection, then each sub-sample would show systematically different results on the questions where selection matters. First, we consider the extent of participation bias by comparing sub-samples: (i) regular vs. occasional CFO survey responders; (ii) early vs. late responders; (iii) by job title; (iv) by email solicitation lists; and (v) by who is influential in setting the culture. The results from these tests are reported in [Appendix D](#).

In most cases, we see little statistical difference. When conditioning on job title, we see that CEOs more frequently mention specific cultural values and norms but the importance of culture is similar to other executives. Not observing systematic differences in executives’ perceptions of the value of culture across executives is noteworthy, because it suggests some of our key descriptive statistics are robust to many types of conditioning. When examining by email solicitation list, CFO magazine respondents perceive culture as less important but

are also less likely to indicate that their culture very closely tracks their stated firm values. There are also some directional differences in perceptions for actions influenced by culture across the email lists, but the directions vary as positive or negative. To account for these minor differences, in all multivariate regression settings, we include job title and email source as control variables (which we label as “noise” variables in the tables).

4.2. Do executives’ views accurately reflect corporate culture?

An important survey design issue is how to interpret the views of executives about culture. Are the self-reported views biased? Are the executives accurately representing culture or are they telling self-serving stories? To assess potential measurement error associated with executives’ self-reporting, we cross-check our survey measures using internal and external data. For example, using a sample of respondents that identified themselves, we match their survey responses to 10 independent datasets (Audit Analytics, Compustat, Glassdoor, U.S. Patent and Trademark Office data, KLD, Sustainalytics, Brand Ranking, Best Places to Work, RepRisk, company websites via Wayback Machine) to provide external validity to our survey results.

4.2.1. Internal data

We examine two small sub-samples for internally consistent responses: (i) executives that both completed the survey and conducted an interview, and (ii) firms from which multiple executives responded. In each case, we find pairwise positive correlations that suggest that executives’ responses are internally consistent. We also ask a similar question twice on the survey (Q4d, Q13 about incentive compensation), but one version has a negative connotation and one has a positive connotation. This allows us to gauge how well the survey is actually measuring what we want it to measure, and again, we find evidence to suggest internal validity.

4.2.2. Glassdoor data

We first explore the reliability of our survey measure of an effective culture from Q4b “Our firm’s corporate culture: 4 = is exactly where it should be, ... 1 = needs a substantial

overhaul.” The higher the ranking on this scale, the more effective the current culture is. **Figure 2** illustrates the relation between our measure of an effective culture from the survey and an external rating of culture, which we obtain from crowd-sourced employee reviews of culture on Glassdoor. The Glassdoor reviews provide star ratings for the company overall, for a subcategory labeled “Culture & Values,” and for textual responses about the pros and cons of the company. This matched survey-Glassdoor sample is limited to 171 firms. The line of best fit shows a significant positive relationship. The rank and file employees who review their firm on Glassdoor perceive a culture that is generally similar in effectiveness to that described by corporate executives. While Glassdoor and other data can be used to analyze culture, we emphasize that our survey also elicits executives’ views about which elements of culture are most important, when, and why. These extra dimensions provide insights that go well beyond Glassdoor data.

In **Table 10** we further analyze the statistical relation between our survey measure of culture and the Glassdoor culture ratings. We focus on coefficient estimates from using an OLS regression with noise and additional question controls. Appendix Table C.7 summarizes these variables. They include response date fixed effects, the delay in response to the solicitation email, indicator variables for various job titles (e.g., CEO, CFO, other executive), and the email source list (i.e., Duke, Columbia, CFO magazine). The date and delay variables help to account for potential participation bias (excited to respond vs. wants to get the last word in). The job title and email source list help to account for potential selection. Additional Q1 controls come from the RAs hand-coding of the open-ended responses and include sentiment, informativeness, number of cultural values, an indicator for a changing culture, and an indicator for a mixed culture. In our most saturated specification, we also include demographic controls. For example, in companies that pay their executives more, managers may be happier and thereby choose to answer the survey questions more positively. The demographic variables include categorical responses related to profitability, employee turnover, CEO turnover, family-ownership, firm location, CEO age, CEO tenure, CEO compensation, corporate revenue, number of employees, industry competitiveness, and credit rating.

In Panel A of [Table 10](#), the estimate in Column 1 indicates that our measure of an effective culture is positive and significantly correlated with the external Glassdoor culture measure. The point estimate shows that a 0.247 standard deviation increase in culture being where it should be (as measured by our survey in Q4b) is associated with a one star increase in the Glassdoor culture star rating. This result holds even given the small number of observations and is robust to trimming the lowest 1% of 5% of observations. We present results excluding the firms with the five lowest Glassdoor culture ratings (Column 2) and limiting the sample to only those firms with more than 50 current employee reviews in the survey year (Column 3). The result is robust to the inclusion of the full battery of demographic controls (Column 4). Given that demographic controls include profitability, industry competitiveness, and credit score, which are all related to product market success, this suggests the measures of cultural effectiveness are capturing something beyond those success factors. Finally, we show the correlation is robust to alternative Glassdoor metrics such as the overall firm rating, the net promoter score, and the approval of the CEO (Column 5 through 7). Overall, this set of tests help to rule out the possibility that an outlier or noise is driving the observed relationship between Glassdoor and the survey responses.¹¹

In addition, we use the Glassdoor data to evaluate the extent to which the pros and cons text from Glassdoor reviews match to the cultural values described by executives in Q1 and Q14. To transform the text of the Glassdoor reviews into cultural values, we follow the approach in [Popadak \(2016\)](#) and [Grennan \(2020\)](#). Specifically, we create a normalized vector of lemmatized word counts from the text in the year of the survey for both the pros and the cons. We then calculate the cosine similarity between the Glassdoor vector and lemmatized vector of culture words for the pros and the cons separately. Given that the text may contain synonyms or antonyms for the value, synonyms are assigned a positive count and antonyms a negative count. We subtract the cosine similarity score for the cons from the cosine similarity score for the pros to arrive at the final value. The word list is the same set of synonyms

¹¹Our tests report p -values based on an assumption of a single test. Because there are multiple comparisons, following recommendations outlined in [Harvey, Liu, and Zhu \(2016\)](#) and [Harvey \(2017\)](#), we mostly focus on the results that are significant at the 99th percentile.

and antonyms for nouns, verbs, adjectives, and word phrases associated with specific cultural values that the RAs received as part of their instructions for how to code the cultural values as discussed previously.¹² Appendix Table C.8 shows that three of the seven cultural values on Glassdoor are significantly associated with the survey equivalent (adaptability, collaboration, and results-orientation) and that these correlations exhibit similar patterns in more saturated regressions. This exercise suggests that the cultural values we measure with the survey are reasonably aligned with the culture lived by rank-and-file employees.

4.2.3. Company websites

Next, in Panel B of [Table 10](#) we consider corporate websites as a source of external validation. Corporate websites convey information about the culture that the executives choose to advertise and potentially aspire to have. To analyze the advertised values, we look at the company's website using [archive.org](#) to collect the relevant cultural values as of the survey date. A corporate website typically has one or more sections dedicated to the company's values, culture and working environment. We collect all the values listed in all these sections and then, using the same team of RAs, hand-code the cultural values from the website into the same set of cultural values that we extract from the executives' open-ended survey responses. Then, we analyze the statistical relation between the advertised values of the website and the executives' perception of the current values. We find little statistical evidence that the espoused values on the website are positively related to the values described by the executives. In fact, two of the seven cultural values exhibit a significant, negative correlation (integrity and results-orientation). The same pattern emerges regardless of whether we include or exclude demographic controls. A potential explanation for this apparent disconnect may be strategic misrepresentation on the website to appeal to investors, regulators, and/or potential employees. A more benign interpretation is that website values are aspirational and not yet achieved. In any case, the differences seem to go in the direction of our survey respondents

¹²The full set of culture words, the sign, the associated cultural values, the word sense from WordNet, and part of speech are available upon request.

being relatively candid at times in supplying potentially unflattering information about their firms.

Next, we further evaluate the relationship between the external values advertised on company websites and the survey responses by estimating the relation between current culture tracking stated values and the numbers of misaligned cultural values, which we define as the sum of the absolute value of the differences between the cultural value indicated on the website and the cultural value indicated by the executives on the survey. **Figure 3** illustrates the relationship between the misaligned values and the survey question Q4, “How closely does your current corporate culture track with your stated firm values?” The line of best fit indicates a clear negative relation, which indicates that when the executive describing the current culture perceives it differently than what is described on the corporate website, that executive is also much more likely to say that the current culture does not track aspiration. That is, when the executive says actual culture is not aligned with aspirational culture, this is exactly when the correlation between our survey measure of culture differs most from website culture. Appendix Table C.9 reports estimates from multivariate regressions with noise and survey question controls. Taken together, this visual and multivariate evidence is consistent with the survey responses reflecting current culture at the firm and website-declared culture reflecting not yet achieved or aspirational culture.

4.2.4. Business outcomes from Compustat

Next, we augment our external validation of the executives’ descriptions of culture by linking our survey measures to external measures of business outcomes. Given that the vast majority of executives believe that improving culture increases firm value, we focus on the link between culture and value. First, we explore the relation between an executive reporting that his or her culture is exactly where it should be (Q4b), which is a measure of culture effectiveness, and publicly available financial data. This sample is limited to 158 firms, so to reduce noise we look at external outcomes averaged over one, two, three, four, and five years, respectively. **Table 11** demonstrates that when executives view the culture as effective there

is a positive and robust association with Tobin's Q and also with Total Q (Peters and Taylor, 2017) as reported in Panels A and B, respectively. This suggests that executives' view that culture is value-enhancing when it is effective is accurately reflected in their responses.

In Panel C, we explore which elements of culture are value-enhancing by including in the specification our survey measures of cultural values (Q1, Q14), cultural norms (Q6), as well as our external measures; we find our survey measure of cultural norms is positive and significantly associated with Tobin's Q. This suggests that what actually happens within companies on a day-to-day basis (the norms) is important for connecting culture to performance. In contrast, none of the survey-based cultural values, website advertised cultural values, or Best Places to Work indicators are associated with Tobin's Q. The Glassdoor rating is positive and significantly associated with Tobin's Q.¹³

4.2.5. *Disaggregated business outcomes from various sources*

To externally validate the relation between our hand-coded measures of cultural values and more disaggregated business outcomes, we surveyed the literature for other proxies that have been used to externally validate various measures of cultural values (Guiso et al., 2015b; Li et al., 2021). The typical approach is to link a cultural value such as adaptability to a business outcome such as R&D expenditures. As such, in Appendix Table C.10, we did the same for our cultural values. To ease comparability across many data sets, we have standardized the external proxies such that a positive correlation supports the validity of the cultural value. We find the correct sign in all but one regression in Panels A to E, many significantly so, which is consistent with the hand-coding of the cultural values and the link between culture and business outcomes.

For adaptability, in Panel A of Appendix Table C.10 we evaluate if the company applies for patents in the survey year and its R&D expenses. We find positive and significant correlations for each proxy. To validate community-orientation in Panel B, we consider the number of

¹³This regression only represents a small subset of our sample, and the reduced significance on some aspects of culture may occur because of it.

diversity strengths minus the number of diversity concerns as reported by KLD database, the ESG score from Sustainalytics, and the Best Places to Work indicator. We find mixed results for community-orientation. Next, detail-orientation encompasses high-quality products and processes as well as being precise and analytical. To validate detail-orientation in Panel C, we follow the prior literature and consider brand rankings, data security violations, and accounting restatements. Across each measure, we see significant correlations with survey-reported detail-orientation. In Panel D, we find some support for the cultural value of integrity using the Reputational Risk measure. Finally, to evaluate results-orientation in Panel E, we consider asset growth and “earnings beats target” and find support for results-orientation. We note that we did not evaluate collaboration or customer-orientation given limited proxies.

Finally, we extend our external validation analysis to accounting numbers and the information content they provide to capital markets. This validation exercise is important because 60% of the executives indicate that culture affects their desire to meet or beat EPS targets. In Appendix Table C.11, we present estimates that relate our survey-based responses about earnings and culture to actual earnings surprises. We observe that the executives who indicate that meeting or beating earnings is more important at their firms are also less likely to have a negative earnings surprise and more likely to have a positive earnings surprise based on their external financial reports. The point estimate does not change meaningfully as the specification changes to include more controls or a longer time-series of earnings announcements. Interestingly, when we focus on cultural norms, we see that the importance of day-to-day actions correlates significantly with not having negative earnings’ surprises. As discussed in prior studies (Edmans, 2011), interpreting correlations between proxies for culture and earnings’ surprises is challenging. Such a relation could suggest culture is an important determinant of profitability not observed by the stock market, and thus able to generate constant positive earnings surprises; or it could mean that if a firm does not have a culture of beating earnings forecasts, the surprises are more informative.

4.2.6. External validation using only the Duke and Columbia data

As an extension to our analysis of the reliability of the culture and business outcome data, we examine how our external validation tests perform when we use just the Duke and Columbia sample. Crossing the Duke+Columbia sample with Glassdoor leaves us with the small sample size of 75; however, even so, we document that the external measure of Glassdoor's culture rating has a significant positive association with the survey-based measure of culture, that the survey measure of executives' perceptions of how closely they track to stated values is negatively associated with the external misalignment with the corporate website, and that the same survey-based measure of culture is significantly and positively associated with Tobin's Q. These results are reported in Appendix Table C.12. In conclusion, while accurate measurement of executives' views has the potential to be a problem in our data, we find no evidence that it is a serious issue.

4.3. Robustness to alternative potential drivers

4.3.1. Placebo checks

Appendix Table C.13 provides evidence of positive correlations between specific cultural variables and relevant business outcomes. What if, however, these seemingly strong correlations are driven by an omitted variable or chance? To address this concern, we run placebo tests that look for an association that may be present if the main analysis is flawed but should not be present otherwise. Specifically, we perform multivariate regressions with the same business outcomes but replace the relevant cultural values mentioned in the prior literature with values and norms that seem plausibly irrelevant to the business outcomes. For example, we again evaluate if the company applies for patents in the survey year and its R&D expenses but this time we associate it with integrity and employees willingness to report unethical behavior. In each Panel, we observe insignificant correlations in relation to the proxies. Thus, this again suggests that the survey is picking up some true measure of culture and not a common but omitted characteristic like product market competition.

4.3.2. Halo effect

In Appendix Table C.14, we replicate Table 10 that externally validates the culture measures but we attempt to statistically address a possible “halo effect” (carry-over in judgment from one question to the next) using the approach suggested by (Guiso et al., 2015b). The specification is meant to help with the problem that arises in data collection when there is carry-over from one judgment to another. To address the potential error-in-variables problem and the bias it can induce, we include as a control the response to a question that, though possibly containing the halo effect, in theory is orthogonal to the questions about the firm’s underlying true culture. Specifically, we use question 11, which is a hypothetical question about a potential M&A deal. By disconnecting from the firm’s underlying true culture, this addresses the halo effect because this response will not have the same systematic correlation with the executive’s underlying belief about his or her firm’s culture. The point estimates in this specification are similar to the original estimates and suggest that the correlations with the external culture measures are reliable. In Appendix Table C.15, we replicate the external validation of the business outcomes from Table 11 that use Compustat data but with a halo effect specification. Again, we find similar patterns and significance.

4.3.3. Larger sample

Given that the preceding sections provide confidence in the quality of our survey data, we also examine the extent to which the correlations we document generalize to the full sample and collection of survey questions. Specifically, in Appendix E, we explore the wide range of business outcomes extracted from Q14 (e.g., profitability, productivity, etc.). First, we document significant, positive correlations between both specific business outcomes and specific cultural values. The patterns are similar to those that we document in the external validation tests but provide information about a richer, more detailed set of outcomes. Next, we show positive correlations between having a culture where it should be (Q4b), an indicator of an effective culture, and many of these business outcomes. Then, we explore what factors are

associated with having an effective culture, and we find that cultural norms are significantly and positively correlated with having an effective culture, more so than cultural values. Finally, we seek to isolate which of the many elements that comprise culture are associated with an effective culture. We do so using model selection techniques (e.g., LASSO regressions). Collaboration and new ideas develop organically are the two cultural elements selected. While all of these results are simply correlations and not causal, they nevertheless suggest fruitful research paths moving forward.

5. Conclusion

Corporate culture is arguably the most under-researched value driver among the important contributors to firm performance. Our survey of executives provides detailed information about how they view culture, the elements that comprise culture (values and norms), the financial value of culture, how culture influences employees' decisions, and what forces work for and against a value-enhancing culture. In summary, 91% of executives believe culture is important to their firms and 79% place culture among the top value drivers of their company. 54% of executives would just walk away from an acquisition target that is a poor cultural fit, while another 33% would require discounts between 10%-30% of the purchase price of the target. Culture influences a range of financial decisions such as investment and risk-taking. For example, 41% of executives do not choose to maximize NPV when the NPV-superior investment requires short-term challenges (negative cash flows) and 80% indicate that culture is a factor linked to short-termism. Similarly, 61% believe culture is an important force behind their firm's chosen level of investment risk. Culture influences actions that are hard to contract on, such as ethical decisions. An overwhelming 85% of executives believe an ineffective culture increases the chances that an employee might act unethically or even illegally.

Our study also helps to expand our understanding of how culture relates to business outcomes by separating culture into values (big principles) and norms (day-to-day practices). While this theoretical distinction is not new, our empirical documentation that executives be-

lieve cultural norms are an important part of establishing a value-enhancing culture is new. Further, we document many interesting correlations with specific elements of culture. For example, there is a negative correlation between both integrity and a willingness to report unethical behavior and incentive compensation being influential in setting the culture.

Finally, we believe the unique survey data that we have collected give us both the detailed responses and scale necessary to guide future research on this topic and enable researchers to bring cultural elements into the set of forces that can be modeled and measured. Given the many findings from our study, we conclude by summarizing the desired characteristics of a potential theory of corporate culture that is consistent with our key facts. A theory of corporate culture would have several key ingredients: (i) executives who believe culture has large and persistent effects in magnitude, both on the upside and downside, for firm value, (ii) power to influence many corporate policies rather than a select few, (iii) greater efficacy when the cultural norms embodied by the day-to-day actions of employees support the cultural values, and (iv) effective culture requires investment, and acknowledgement of how people (leaders, investors) and formal systems (governance, incentive compensation) may be working for or against such optimal investment. In conclusion, we believe corporate culture deserves substantial research going forward and we hope our paper helps build a bridge to enable such future work.

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Fig. 1.

Diagram linking corporate culture to outcomes

According to North (1991), institutions can be classified as informal and formal. We define corporate culture as an informal institution comprised of cultural values and cultural norms. The values and norms characterize the structure in place that guides employees' actions when they face unforeseen contingencies. A cultural value represents an ideal state of behavior such as integrity or adaptability. Cultural norms are the day-to-day living out of the cultural values via the typical patterns of conduct. An effective culture is one that promotes the behaviors needed to successfully execute the firm's strategies and achieve its goals. The effectiveness of culture is determined by alignment of and interactions between values, norms, and formal institutions.

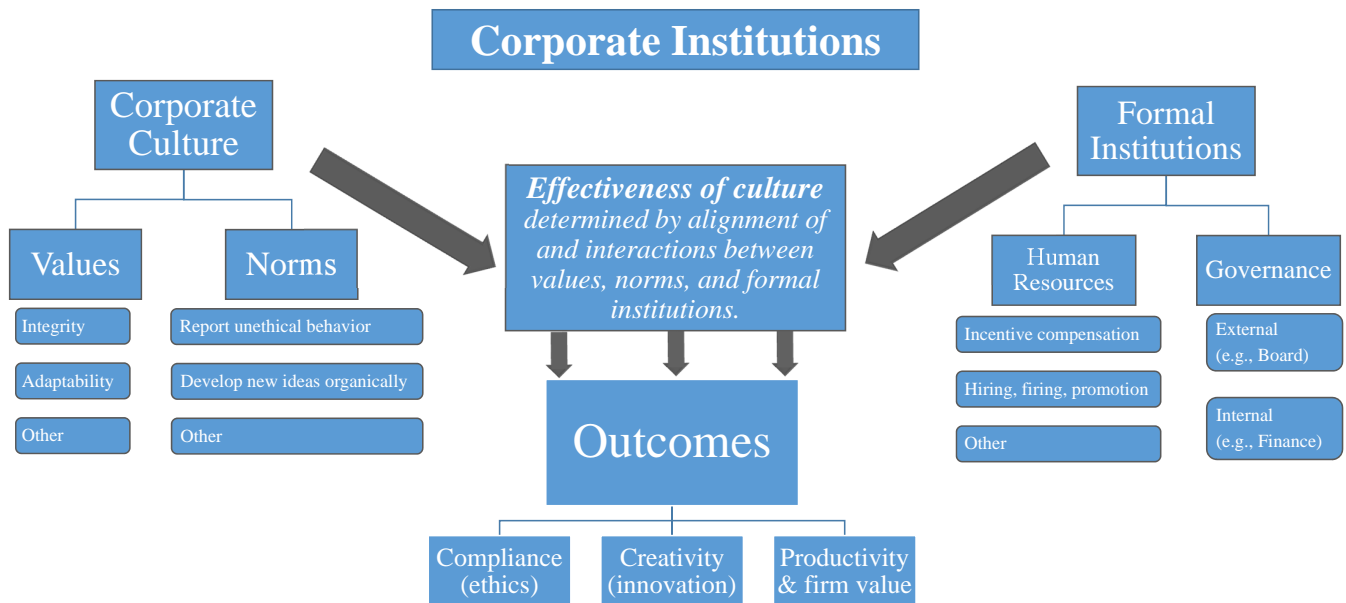


Fig. 2.

External validation of Q4b “culture is exactly where it should be”

This figure is a binned scatterplot of the relationship between our survey measure from Q4b, “Our current culture: 4 = is exactly where it should be, . . . , 1 = needs a substantial overhaul” and an external culture rating. The external culture rating is derived from crowd-sourced employee reviews on Glassdoor. Each dot shows the average survey status of culture for a given external culture rating, after controlling for the number of current employee reviews in the survey year. The plotted line represents the best linear approximation to the conditional expectation function.

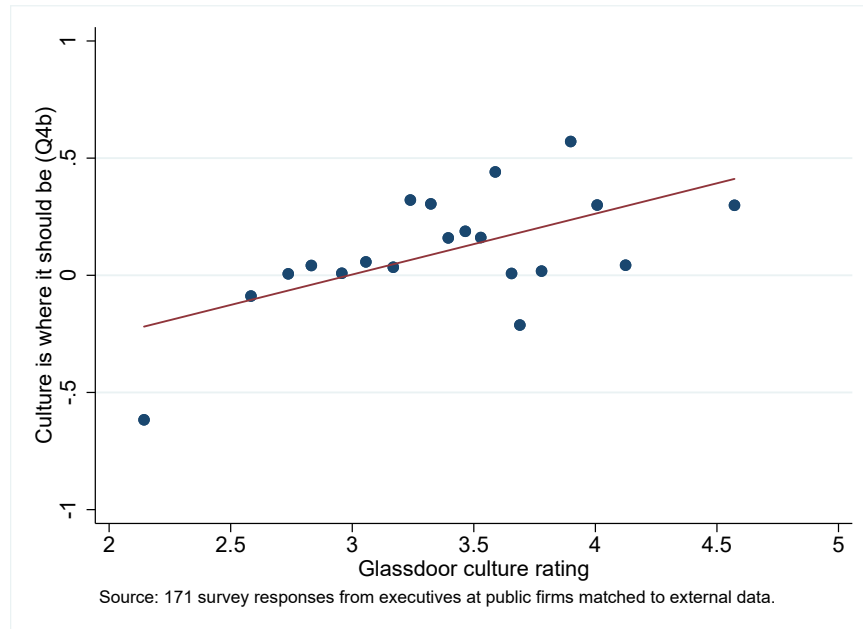


Fig. 3.

External validation of Q4 “culture tracks stated values”

This figure is a binned scatterplot of the relationship between our survey measure from Q4, “How closely does your current corporate culture track with your stated firm values? 4 = very closely, . . . , 1 = not at all” and a measure of external alignment derived from corporate websites. Specifically, we take the sum of the absolute value of the difference between whether a cultural value is espoused on the corporate website and whether the cultural value is described in the executive’s textual descriptions of the current corporate culture in Q1 and Q14. Each dot shows the average tracking with stated values for a given alignment with externally espoused values. The plotted line represents the best linear approximation to the conditional expectation function.

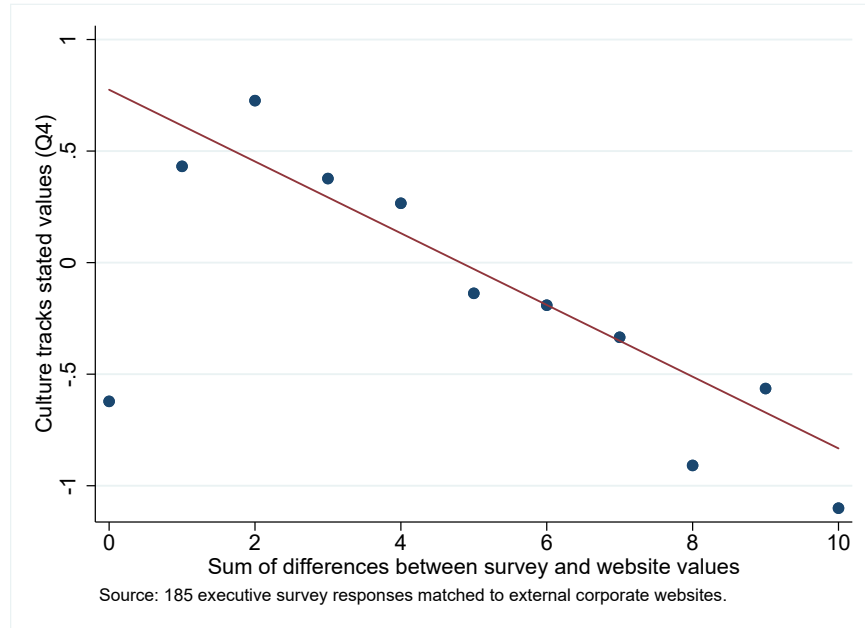


Table 1:
Corporate culture summary statistics

This table shows summary statistics of the values (Panel A) and norms (Panel B) that comprise corporate culture, as well as formal institutions (Panel C). Panel D presents summary statistics on three different types of business outcomes affected by corporate culture. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see Appendix B. The survey questions are presented in Appendix A.

Cultural values from Q1 "Briefly, what words or phrases best describe the current corporate culture at your firm?"							
-1 = Described value is opposite, 0 = No mention of value, 1 = Indicated this value							
		Percent of respondents			Mean	Std. dev.	Median
Panel A. Cultural values	Obs.	-1	0	1			
Adaptability	1348	8%	62%	30%	0.21	0.58	0
Collaboration	1348	7%	61%	32%	0.25	0.57	0
Community	1348	10%	51%	39%	0.29	0.63	0
Customer-oriented	1348	1%	80%	19%	0.19	0.41	0
Detail-oriented	1348	4%	80%	16%	0.13	0.43	0
Integrity	1348	2%	75%	24%	0.22	0.45	0
<u>Results-oriented</u>	1348	7%	45%	48%	0.41	0.62	0
Agg. cultural values	1348				0.24	0.30	0.29

Cultural norms from Q6, "In the context of your firm's current culture, please indicate which factors determine the effectiveness of your culture." -1 = Works against, 0 = No effect, 1 = Key factor							
		Percent of respondents			Mean	Std. dev.	Median
Panel B. Cultural norms	Obs.	-1	0	1			
Agreement about goals and values	1348	8%	30%	62%	0.54	0.64	1
Consistency and predictability of actions	1348	8%	45%	47%	0.39	0.63	0
Coordination among employees	1348	10%	23%	67%	0.57	0.66	1
Decision-making reflects long-term	1348	10%	27%	63%	0.53	0.67	1
Employees comfort in suggesting critiques	1348	13%	33%	54%	0.42	0.71	1
New ideas develop organically	1348	8%	41%	52%	0.44	0.63	1
Trust among employees	1348	9%	15%	76%	0.68	0.63	1
Urgency with which employees work	1348	12%	39%	49%	0.37	0.69	0
<u>Willingness to report unethical behavior</u>	1348	7%	44%	49%	0.42	0.62	0
Agg. cultural norms	1348				0.48	0.43	0.56

Formal institutions and leadership from Q6/Q13, "Do the following items reinforce or work against the effectiveness of your corporate culture." -1 = Works against, 0 = No impact, 1 = Reinforces							
		Percent of respondents			Mean	Std. dev.	Median
Panel C. Formal institutions and leadership	Obs.	-1	0	1			
Corporate governance	1348	9%	42%	48%	0.39	0.65	0
Finance function	1348	7%	50%	43%	0.36	0.61	0
Hiring, firing, and promotion	1348	13%	35%	52%	0.38	0.71	1
<u>Incentive compensation</u>	1348	17%	33%	50%	0.32	0.75	0
Agg. formal institutions	1348				0.39	0.47	0.40
Leadership	1348	17%	18%	65%	0.48	0.77	1

Firm outcomes extracted from Q14, "To what extent does the corporate culture at your firm affect the following items:"								
1 = No Effect, 2 = Little effect, 3 = Moderate effect 4 = Big effect								
		Percent of respondents				Mean	Std. dev.	Median
Panel D. Outcomes Culture Affects	Obs.	1	2	3	4			
Compliance	1119	9%	14%	30%	47%	3.15	0.97	3
Tax aggressiveness	1020	32%	32%	25%	10%	2.14	0.99	2
Quality of our financial reporting	1118	10%	21%	33%	36%	2.94	0.99	3
<u>Beat EPS</u>	302	11%		29%	60%	3.24	1.03	4
Aggregate ethics	1152					2.80	0.77	3.00
Creativity	1136	2%	9%	32%	57%	3.43	0.76	4
<u>Willingness to take on risky projects</u>	1129	5%	11%	43%	41%	3.21	0.82	3
Aggregate innovation	1150					3.32	0.61	3.50
Firm value	1124	3%	8%	31%	57%	3.43	0.78	4
Profitability	1137	1%	8%	36%	54%	3.44	0.69	4
<u>Productivity</u>	1126	1%	8%	29%	62%	3.51	0.70	4
Agg. productivity & value outcomes	1153					3.46	0.54	3.67
Agg. all outcomes	1162					3.20	0.46	3.22

Table 2:
Corporate culture by industry

This table provides descriptive statistics of the values and norms that comprise corporate culture by industry. Columns 1 through 6 display the mean response from executives in the specific industries for which we obtain at least 50 responses. Columns 8 through 11 display the mean response from executives conditional on their competitive position in the industry. Columns 7 and 12 display the F-statistic from the joint hypothesis test that the industry coefficients are equivalent. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B. ***, ** and * indicate *p*-values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Specific Industry							Competitive Position in Industry				
	Fin. (1)	Health (2)	Manu. (3)	Retail (4)	Serv. (5)	Tech. (6)	Joint F-stat (7)	Leader (8)	Among Leading (9)	Middle of Pack (10)	Challeng er (11)	Joint F-stat (12)
<i>Cultural values (-1 = Described value is opposite, 0 = No mention of value, 1 = Indicated this value)</i>												
Adaptability	0.19	0.39	0.13	0.20	0.29	0.36	3.07***	0.34	0.22	0.07	0.30	6.04***
Collaboration	0.28	0.11	0.25	0.14	0.46	0.31	2.74***	0.33	0.32	0.11	0.27	9.33***
Community	0.28	0.15	0.37	0.31	0.45	0.39	3.19***	0.41	0.38	0.11	0.33	13.41***
Customer-oriented	0.25	0.26	0.21	0.21	0.22	0.14	2.93***	0.20	0.25	0.13	0.16	9.38***
Detail-oriented	0.16	0.16	0.17	0.00	0.17	0.14	2.30***	0.19	0.18	0.06	0.09	7.48***
Integrity	0.30	0.16	0.25	0.22	0.28	0.21	2.20**	0.28	0.26	0.14	0.16	5.26***
Results-oriented	0.47	0.40	0.45	0.29	0.53	0.43	2.52***	0.52	0.49	0.28	0.41	10.95***
<i>Cultural norms (-1 = Works against, 0 = No effect, 1 = Key factor)</i>												
Agreement about goals and values	0.58	0.66	0.52	0.62	0.59	0.52	2.28***	0.67	0.61	0.40	0.53	10.21***
Consistency and predictability of actions	0.45	0.53	0.41	0.28	0.43	0.32	1.95**	0.46	0.45	0.33	0.38	5.07***
Coordination among employees	0.53	0.55	0.64	0.58	0.72	0.68	2.70***	0.65	0.67	0.46	0.65	12.49***
Decision-making reflects long-term	0.52	0.52	0.55	0.53	0.61	0.52	2.29***	0.66	0.60	0.39	0.56	8.66***
Employees comfort in suggesting critiques	0.36	0.55	0.38	0.37	0.57	0.57	2.26**	0.52	0.45	0.28	0.55	6.32***
New ideas develop organically	0.36	0.47	0.40	0.41	0.67	0.53	3.89***	0.52	0.47	0.28	0.61	9.66***
Trust among employees	0.73	0.76	0.67	0.65	0.77	0.80	3.91***	0.82	0.75	0.56	0.74	15.44***
Urgency with which employees work	0.31	0.31	0.44	0.40	0.46	0.45	1.87**	0.43	0.42	0.29	0.45	4.91***
Willingness to report unethical behavior	0.58	0.56	0.49	0.33	0.43	0.39	2.53***	0.52	0.48	0.34	0.41	5.55***
<i>Aggregate cultural measures</i>												
Agg. cultural values (Q1, Q14)	0.44	0.39	0.42	0.32	0.46	0.44	2.54***	0.46	0.47	0.25	0.37	22.79***
Agg. cultural norms (Q6)	0.21	0.18	0.21	0.14	0.30	0.28	2.93***	0.28	0.26	0.06	0.25	20.63***
<i>Culture in practice (1 = No, 4 = Yes)</i>												
Tracks stated values (Q4)	3.39	3.21	3.28	3.16	3.51	3.38	1.77*	3.50	3.40	2.90	3.32	17.53***
Culture is exactly where it should be (Q4b)	2.82	2.69	2.70	2.58	3.02	2.90	2.93***	2.91	2.87	2.37	2.83	21.64***
Observations	174	62	191	111	150	105		258	484	227	128	

Table 3:

Corporate culture and firm characteristics

This table provides descriptive statistics of the values and norms that comprise corporate culture by firm characteristics. For each firm characteristic, we divide the sample into two or three subsamples based on the median or relevant category, and we report the mean for each subsample. The characteristics, which span three panels, include firm size (below vs. above 1000 employees), number of segments (single vs. multi segment), revenue growth (median), an indicator for having profits, and ROE (median), firm age (median), family control (family vs. not), ownership (public vs. private), leverage (median), credit rating (investment grade vs. not), the number of employees with the firm for less than three years (median), employee turnover (less than industry average, industry average, above industry average), CEO turnover ((less than industry average, industry average, above industry average), CEO age (less than 50, 50-59, 60+), an indicator for who is influential in setting the current culture (current CEO, founder or past CEO). The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B. ***, ** and * indicate p -values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Size (employees)		Size (segments)		Revenue Growth		Profitable		ROE	
	Small (1)	Large (2)	Single (3)	Multi (4)	Low (5)	High (6)	No (7)	Yes (8)	Low (9)	High (10)
<i>Cultural values (Q1, Q14)</i>										
Adaptability	0.25	0.19*	0.24	0.22	0.13	0.33***	0.34	0.21***	0.18	0.26*
Collaboration	0.31	0.21***	0.32	0.23**	0.23	0.35***	0.14	0.29***	0.19	0.35***
Community-oriented	0.37	0.25***	0.34	0.31	0.24	0.43***	0.26	0.33	0.26	0.39***
Customer-oriented	0.19	0.24**	0.20	0.23	0.21	0.24	0.12	0.22***	0.22	0.24
Detail-oriented	0.14	0.17	0.15	0.14	0.15	0.16	0.13	0.15	0.14	0.19
Integrity	0.22	0.27*	0.21	0.25	0.23	0.24	0.18	0.24	0.20	0.29***
Results-oriented	0.46	0.42	0.43	0.48	0.41	0.51**	0.33	0.46**	0.33	0.59***
<i>Cultural norms (Q6)</i>										
Agreement about goals and values	0.57	0.59	0.58	0.57	0.53	0.62*	0.51	0.58	0.57	0.58
Consistency and predictability of actions	0.44	0.38	0.44	0.40	0.38	0.46*	0.46	0.41	0.44	0.39
Coordination among employees	0.64	0.57	0.64	0.59	0.57	0.67**	0.65	0.61	0.54	0.67**
Decision-making reflects long-term	0.57	0.58	0.60	0.53	0.54	0.66**	0.47	0.59*	0.56	0.63
Employees comfort in suggesting critiques	0.45	0.44	0.46	0.43	0.37	0.53***	0.51	0.43	0.38	0.46
New ideas develop organically	0.49	0.41**	0.47	0.46	0.39	0.55***	0.48	0.46	0.46	0.47
Trust among employees	0.75	0.69*	0.76	0.70	0.67	0.80***	0.69	0.73	0.66	0.78**
Urgency with which employees work	0.42	0.37	0.42	0.37	0.36	0.44	0.42	0.41	0.35	0.43
Willingness to report unethical behavior	0.40	0.54***	0.42	0.47	0.44	0.42	0.39	0.46	0.41	0.44
<i>Aggregate cultural measures</i>										
Agg. cultural values (Q1, Q14)	0.28	0.25	0.27	0.27	0.23	0.32***	0.21	0.27**	0.22	0.33***
Agg. cultural norms (Q6)	0.52	0.51	0.53	0.50	0.47	0.57***	0.51	0.52	0.49	0.54
<i>Culture in practice (1 = No, 4 = Yes)</i>										
Tracks stated values (Q4)	3.33	3.31	3.33	3.31	3.27	3.43***	3.10	3.35***	3.21	3.45***
Culture is exactly where it should be (Q4b)	2.83	2.68***	2.81	2.75	2.65	2.93***	2.62	2.80**	2.62	2.88***

Table 3: Corporate culture and firm characteristics (continued)

	Firm Age		Family Control		Ownership		Leverage		Investment Grade	
	Young (1)	Old (2)	Family (3)	Non-family (4)	Public (5)	Private (6)	Low (7)	High (8)	No (9)	Yes (10)
<i>Cultural values (Q1, Q14)</i>										
Adaptability	0.31	0.16***	0.25	0.21	0.19	0.25	0.23	0.21	0.30	0.18***
Collaboration	0.33	0.24**	0.34	0.24**	0.25	0.29	0.29	0.25	0.26	0.28
Community-oriented	0.35	0.31	0.38	0.30*	0.31	0.33	0.33	0.29	0.30	0.33
Customer-oriented	0.18	0.24**	0.22	0.20	0.21	0.21	0.21	0.24	0.19	0.22
Detail-oriented	0.13	0.16	0.16	0.13	0.18	0.14	0.17	0.16	0.13	0.16
Integrity	0.23	0.24	0.25	0.21	0.30	0.21***	0.22	0.25	0.18	0.26**
Results-oriented	0.47	0.45	0.46	0.41	0.48	0.43	0.46	0.45	0.38	0.47**
<i>Cultural norms (Q6)</i>										
Agreement about goals and values	0.56	0.58	0.56	0.56	0.66	0.54***	0.59	0.53	0.50	0.62***
Consistency and predictability of actions	0.41	0.43	0.44	0.41	0.39	0.43	0.43	0.39	0.40	0.42
Coordination among employees	0.59	0.62	0.59	0.62	0.60	0.62	0.66	0.56**	0.58	0.63
Decision-making reflects long-term	0.54	0.58	0.53	0.56	0.61	0.55	0.64	0.53**	0.48	0.62***
Employees comfort in suggesting critiques	0.49	0.41	0.45	0.42	0.44	0.45	0.47	0.40	0.45	0.44
New ideas develop organically	0.52	0.41***	0.47	0.45	0.45	0.47	0.50	0.43	0.45	0.47
Trust among employees	0.76	0.70	0.73	0.72	0.75	0.72	0.77	0.68*	0.70	0.74
Urgency with which employees work	0.42	0.38	0.37	0.41	0.40	0.40	0.43	0.38	0.38	0.40
Willingness to report unethical behavior	0.43	0.48	0.46	0.38*	0.56	0.40***	0.43	0.40	0.41	0.47
<i>Aggregate cultural measures</i>										
Agg. cultural values (Q1, Q14)	0.28	0.26	0.29	0.24**	0.27	0.27	0.27	0.27	0.25	0.27
Agg. cultural norms (Q6)	0.53	0.51	0.51	0.50	0.54	0.51	0.55	0.48**	0.48	0.53*
<i>Culture in practice (1 = No, 4 = Yes)</i>										
Tracks stated values (Q4)	3.33	3.30	3.33	3.30	3.31	3.32	3.39	3.27*	3.24	3.35*
Culture is exactly where it should be (Q4b)	2.83	2.72**	2.81	2.73	2.75	2.79	2.88	2.66***	2.72	2.80

Table 3: Corporate culture and firm characteristics (continued)

	Employees with firm for less than three years		Employee Turnover			CEO Turnover			CEO Age			Influential in setting the current culture Founder	
	Few (1)	Many (2)	< ind.	= ind.	> ind.	< ind.	= ind.	> ind.	<50 (9)	50-59 (10)	60+ (11)	Current	or Past
			avg. (3)	avg. (4)	avg. (5)	avg. (6)	avg. (7)	avg. (8)				CEO (12)	CEO (13)
<i>Cultural values (Q1, Q14)</i>													
Adaptability	0.19	0.26*	0.25	0.23	0.15	0.24	0.13	0.20	0.31	0.23	0.17**	0.26	0.17**
Collaboration	0.30	0.24	0.39	0.21	0.00***	0.32	0.13	0.13***	0.28	0.29	0.25	0.28	0.23
Community-oriented	0.35	0.27*	0.44	0.33	-0.01***	0.36	0.22	0.19***	0.39	0.32	0.30	0.34	0.29
Customer-oriented	0.23	0.18**	0.26	0.18	0.09***	0.22	0.18	0.11*	0.13	0.25	0.22***	0.20	0.18
Detail-oriented	0.17	0.11*	0.18	0.15	-0.02***	0.16	0.10	0.05*	0.12	0.14	0.18	0.14	0.12
Integrity	0.26	0.19**	0.31	0.20	0.06***	0.26	0.18	0.11**	0.20	0.24	0.28	0.23	0.23
Results-oriented	0.46	0.44	0.49	0.51	0.24***	0.48	0.38	0.30**	0.50	0.47	0.41	0.43	0.44
<i>Cultural norms (Q6)</i>													
Agreement about goals and values	0.59	0.52	0.68	0.54	0.30***	0.60	0.54	0.41*	0.52	0.62	0.56	0.60	0.58
Consistency and predictability of actions	0.42	0.40	0.48	0.37	0.30***	0.43	0.46	0.23*	0.38	0.38	0.50**	0.42	0.40
Coordination among employees	0.65	0.55**	0.67	0.63	0.40***	0.63	0.69	0.36***	0.60	0.64	0.59	0.64	0.58
Decision-making reflects long-term	0.61	0.48***	0.67	0.47	0.37***	0.59	0.50	0.44	0.53	0.58	0.60	0.58	0.56
Employees comfort in suggesting critiques	0.45	0.43	0.52	0.41	0.31***	0.47	0.40	0.30	0.46	0.46	0.43	0.45	0.43
New ideas develop organically	0.47	0.44	0.57	0.36	0.30***	0.49	0.38	0.30**	0.52	0.47	0.40*	0.44	0.52
Trust among employees	0.75	0.69	0.81	0.73	0.45***	0.75	0.76	0.41***	0.73	0.75	0.70	0.76	0.70
Urgency with which employees work	0.42	0.37	0.45	0.40	0.25***	0.41	0.43	0.19**	0.38	0.41	0.40	0.43	0.38
Willingness to report unethical behavior	0.49	0.36***	0.49	0.45	0.30***	0.44	0.54	0.31**	0.38	0.48	0.46	0.48	0.44
<i>Aggregate cultural measures</i>													
Agg. cultural values (Q1, Q14)	0.28	0.24*	0.33	0.26	0.07***	0.29	0.19	0.15***	0.28	0.28	0.26	0.27	0.24
Agg. cultural norms (Q6)	0.54	0.47**	0.59	0.48	0.33***	0.53	0.52	0.33***	0.50	0.53	0.52	0.53	0.51
<i>Culture in practice (1 = No, 4 = Yes)</i>													
Tracks stated values (Q4)	3.43	3.16***	3.58	3.25	2.58***	3.41	3.06	2.75***	3.20	3.34	3.40**	3.37	3.22**
Culture is exactly where it should be (Q4b)	2.87	2.65***	3.00	2.73	2.08***	2.86	2.54	2.25***	2.77	2.77	2.81	2.77	2.76

Table 4:

The value of corporate culture

This table provides descriptive statistics on the value placed on corporate culture by surveyed executives at public and private North American firms. The question is listed along with the percentage of responses in each category. For details on all survey questions, please see Appendix A.

Q2, "How important do you believe corporate culture is at your firm?"							
Obs.	Mean	Std. dev.	Median	1 = Not impt.	2 = Somewhat	3 = Impt.	4 = Very impt.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1335	3.52	0.77	4	4.2%	4.9%	25.4%	65.5%

Q3, "In terms of all of the things that make your firm valuable, where would you place corporate culture?"							
Obs.	Mean	Std. dev.	Median	1 = Not top 10	2 = Top 10	3 = Top 5	4 = Top 3
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1345	3.22	1.00	4	10.0%	11.5%	25.0%	53.5%

Q4c, "Do you believe that improving your corporate culture would increase your firm's value?"					
Obs.	Mean	Std. dev.	Median	0 = No	1 = Yes
(1)	(2)	(3)	(4)	(5)	(6)
1104	0.92	0.27	1	8.1%	91.9%

Q11, "You work at a firm with an effective, strong culture. You are evaluating two acquisition targets, A and B. A and B would bring the same strategic and operational benefits if acquired, and the targets are identical in all dimensions except corporate culture. Company A's culture is very aligned with your firm's culture, whereas company B's culture is not at all aligned. Relative to how much you would offer for A, how much less would you offer for company B due to the culture misalignment?"										
Obs.	Mean	Std. dev.	Median	0 = Same amt.	1 = 5% discount	2 = 10% disc.	3 = 20% disc.	4 = 30+% disc.	5 = No offer	
1000	3.69	1.71	5	10.3%	3.0%	10.5%	13.8%	8.8%	53.6%	

Table 5:

Actions influenced by corporate culture

This table provides descriptive statistics on the value placed on corporate culture by surveyed executives at public and private North American firms. The actual question is listed along with the percentage of responses in each category. For details on all survey questions, please see Appendix A.

Q7, "Do you think your company takes the right amount of risk in its investments to achieve its goals?"						
Obs.	Mean	Std. dev.	Median	-1 = Too little	0 = Right amount	1 = Too much
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1117	-0.18	0.61	0	28.8%	60.2%	11.0%

Q7b, "Our corporate culture is a (fill in the blank) reason that our company takes on this amount of risk."							
Obs.	Mean	Std. dev.	Median	1 = Not a reason	2 = Somewhat	3 = Impt.	4 = Very impt.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
860	2.70	1.08	3	19.2%	19.8%	33.0%	28.0%

**Q8, "Suppose your firm is considering two projects A and B:
 ·A and B are very similar in that they require the same capital up front, have the same expected life, and have the same probability of failure.
 ·A is more valuable than project B (A has greater NPV)
 ·A generates negative cash flows for the first two years, while B has positive cash flows in all years.
 Assuming all cash flow forecasts are equally accurate, does your firm's culture make it more likely that project A or B will be chosen?"**

Obs.	Mean	Std. dev.	Median	0 = Project B	1 = Project A
(1)	(2)	(3)	(4)	(5)	(6)
1025	0.59	0.49	1	40.6%	59.4%

Q8b, "Does your firm's culture pay a role in the preference for Project A?"

Obs.	Mean	Std. dev.	Median	0 = No	1 = Yes
(1)	(2)	(3)	(4)	(5)	(6)
629	0.80	0.40	1	20.0%	80.0%

Q10, "Do you think having a poorly implemented/ineffective culture at a company increases the chances that an employee would do something unethical (or even illegal)?"

Obs.	Mean	Std. dev.	Median	0 = No	1 = Yes
(1)	(2)	(3)	(4)	(5)	(6)
1126	0.85	0.36	1	15.5%	84.5%

Q12, "Sometimes companies engage in end-of-quarter practices such as delaying valuable projects in order to hit market expected earnings. How likely is it that an effective corporate culture would reduce the chance that such actions are taken?"

Obs.	Mean	Std. dev.	Median	1 = Not likely	2 = Somewhat likely	3 = Very likely	4 = Extremely likely
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1103	2.55	1.00	3	18.9%	25.6%	36.7%	18.8%

Q12 limited to only public companies:

299	2.55	1.01	3	19.7%	24.4%	37.1%	18.7%
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Table 6:
Elements of corporate culture and investment

This table unpacks the elements of culture (values and norms) and correlates them with the executives' responses about investment risk and their selection of the NPV-superior investment project. The actual question is listed and then for each response category, we divide the sample into subsamples based on the category and report the mean of the element of culture for each subsample. ***, ** and * indicate p -values under the assumption of a single test of 1%, 5%, and 10%, respectively. + indicates that the element of culture is statistically significant in multiple regression format. For details on all survey questions, please see Appendix A.

	Do you think your company takes the right amount of investment risk? (Q7)			The firm's culture makes it more likely that the ___ project will be chosen (Q8)	
	Too little (1)	Right amount (2)	Too much (3)	NPV-inferior (4)	NPV-superior (5)
<i>Cultural values (Q1, Q14)</i>					
Adaptability	0.05	0.32	0.22*+	0.07	0.33***+
Collaboration	0.20	0.35	0.10***	0.14	0.35***+
Community-oriented	0.16	0.46	0.14***+	0.15	0.43***
Customer-oriented	0.20	0.23	0.13**	0.15	0.24***+
Detail-oriented	0.14	0.18	-0.01***	0.06	0.20***+
Integrity	0.16	0.29	0.11***+	0.17	0.28***
Results-oriented	0.29	0.54	0.30***+	0.29	0.54***
<i>Cultural norms (Q6)</i>					
Agreement about goals and values	0.50	0.68	0.24***	0.46	0.67***+
Consistency and predictability of actions	0.32	0.49	0.24***	0.31	0.48***+
Coordination among employees	0.50	0.70	0.47***	0.54	0.69***
Decision-making reflects long-term	0.43	0.70	0.26***+	0.49	0.65***
Employees comfort in suggesting critiques	0.32	0.54	0.23***	0.34	0.53***
New ideas develop organically	0.34	0.55	0.28***	0.40	0.53***
Trust among employees	0.68	0.81	0.42***	0.63	0.80***
Urgency with which employees work	0.27	0.47	0.29**	0.31	0.43***
Willingness to report unethical behavior	0.43	0.49	0.27***+	0.40	0.50**
<i>Aggregate cultural measures</i>					
Agg. cultural values (Q1, Q14)	0.17	0.34	0.14***+	0.15	0.34***+
Agg. cultural norms (Q6)	0.42	0.60	0.30***+	0.43	0.59***+
<i>Culture in practice (1 = No, 4 = Yes)</i>					
Tracks stated values (Q4)	3.08	3.57	2.79***+	3.03	3.53***+
Culture is exactly where it should be (Q4b)	2.52	3.03	2.19***+	2.47	2.99***+

Table 7:

Establishing culture and cultural effectiveness

This table provides descriptive statistics on influential factors in setting a firm's current culture (Panel A) and in preventing the firm's culture from being effective (Panel B). The sample consists of survey responses from executives at public and private North American firms. The actual question is listed along with the percentage of responses in each category. The results in the table for Q13a/b are for firms at which the finance function (or separately, incentive compensation) work against the effectiveness of the culture. For details on all survey questions, please see Appendix A.

Panel A. Q5, "Which of the following have been most influential in setting your firm's current culture? [Check up to 4]"					
	Freq. (1)	Pct. (2)		Freq. (3)	Pct. (4)
Current CEO	743	55%	Past CEO	240	18%
Our reputation or image in the marketplace	478	35%	Changing needs of the market	229	17%
Owners	432	32%	Non-management employees	179	13%
Founder	410	30%	Incentive compensation	158	12%
Internal policies and procedures	332	25%	Board of Directors	157	12%
Hard times we experienced	268	20%	Peer firms	45	3%

Panel B. Q4d, "What is preventing your firm's culture from being exactly where it should be?"									
	Obs. (1)	Mean (2)	Std. dev. (3)	Median (4)	-2 = Strongly Disagree (5)	-1 = Disagree (6)	0 = (7)	1 = Agree (8)	2 = Strongly Agree (9)
<i>Leadership</i>									
Leadership needs to invest more time in the culture	1130	0.79	1.20	1	6%	11%	13%	36%	33%
<i>Formal Institutions</i>									
Firm policies work against the intended culture (e.g., compensation)	1120	-0.04	1.27	0	16%	23%	24%	25%	13%
<i>Cultural Values and Cultural Norms</i>									
Our cultural values are not fully aligned with our business needs	1123	-0.12	1.32	0	19%	26%	17%	27%	12%
Our firm has inefficient workplace interactions	1125	0.20	1.25	0	11%	21%	19%	33%	15%
Our employees are not fully committed to the culture	1117	-0.03	1.26	0	14%	26%	20%	27%	12%
Our culture has not caught up with recent business changes	1117	0.24	1.31	0	13%	18%	20%	30%	19%

Panel C. Q13a/b, "What are the most important ways incentive compensation/the finance function works against your corporate culture?"					
	Freq. (1)	Pct. (2)		Freq. (3)	Pct. (4)
Incentive Compensation Works Against			Finance Function Works Against		
Attracts/retains the wrong type of people to the firm	120	47%	Focuses employees too much on short-term objectives	186	56%
Focuses employees too much on short-term objectives	69	27%	Focuses employees on imperfect metrics	90	27%
Leads to fear of failure and insufficient risk taking	68	26%	Finance employees operate in a separate silo	56	17%

Table 8:

The relation between culture and incentive compensation

This table provides descriptive statistics of the values and norms that comprise corporate culture in relation to incentive compensation. For each survey question about pay, we divide the sample into two subsamples based on the relevant responses, and we report the mean for each subsample. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B. ***, ** and * indicate p -values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	What is preventing your firm's culture from being exactly where it should be? (Q4d) Firm policies work against the intended culture (e.g., compensation)			Incentive compensation influential in setting culture (Q5)		CEO incentive pay (Demographics)		Managerial incentive pay (Demographics)	
	Disagree, Strongly disagree	Neutral	Agree, Strongly Agree	No	Yes	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Cultural values (Q1, Q14)</i>									
Adaptability	0.30	0.27	0.03***+	0.22	0.15	0.22	0.23	0.17	0.27**
Collaboration	0.36	0.25	0.06***	0.25	0.28	0.26	0.28	0.21	0.34***
Community-oriented	0.45	0.28	0.02***	0.30	0.23	0.34	0.32	0.29	0.34
Customer-oriented	0.22	0.18	0.11**	0.18	0.21	0.19	0.22	0.22	0.21
Detail-oriented	0.18	0.10	0.05	0.13	0.09	0.11	0.17**	0.15	0.14
Integrity	0.28	0.16	0.09**	0.23	0.15**+	0.22	0.25	0.22	0.24
Results-oriented	0.53	0.39	0.23***	0.41	0.45	0.40	0.49**	0.41	0.48
<i>Cultural norms (Q6)</i>									
Agreement about goals and values	0.65	0.52	0.30***+	0.55	0.44**	0.52	0.62**+	0.52	0.60**
Consistency and predictability of actions	0.49	0.30	0.24	0.39	0.37	0.45	0.40	0.38	0.45*
Coordination among employees	0.67	0.48	0.39	0.57	0.57	0.60	0.64	0.56	0.66**
Decision-making reflects long-term	0.66	0.46	0.32**	0.53	0.54	0.54	0.62*	0.51	0.60**+
Employees comfort in suggesting critiques	0.51	0.41	0.18***	0.43	0.32*	0.46	0.46	0.38	0.50**
New ideas develop organically	0.53	0.42	0.26***	0.46	0.28***+	0.47	0.48	0.40	0.52***+
Trust among employees	0.78	0.68	0.45***+	0.68	0.65	0.72	0.75	0.68	0.78**
Urgency with which employees work	0.44	0.35	0.19***	0.37	0.40	0.41	0.41	0.35	0.45**
Willingness to report unethical behavior	0.50	0.34	0.32	0.43	0.35+	0.42	0.46	0.44	0.43
<i>Aggregate cultural measures</i>									
Agg. cultural values (Q1, Q14)	0.33	0.23	0.09***+	0.25	0.22	0.25	0.28*	0.24	0.29**
Agg. cultural norms (Q6)	0.58	0.44	0.30***+	0.49	0.44	0.51	0.54	0.47	0.55***
<i>Culture in practice (1 = No, 4 = Yes)</i>									
Tracks stated values (Q4)	3.61	3.18	2.74***+	3.31	3.13**+	3.28	3.36	3.23	3.40***
Culture is exactly where it should be (Q4b)	2.84	2.52	2.17***+	2.75	2.65	2.75	2.81	2.67	2.87***

Table 9:

External validation: Question on quarterly survey

This table presents the response to a one-off culture question included on the 2016Q3 Duke Quarterly CFO Global Business Outlook survey. The question provides responses consistent with culture survey Q3, "In terms of all things that make your firm valuable, where would you place corporate culture?" where answers include Top 3, Top 5, Top 10, or Not in Top 10. Column 1 reports the results from the Quarterly Survey and Column 2 summarizes from most important to least important the findings from the culture survey.

CFO Quarterly Survey Question, "Of all the things that contribute to long-term firm value, for my firm I rank the following items as a:"		
	CFO Quarterly Survey, Top 3 Value Driver	Culture Survey Q3, Top 3 Value Driver
	(1)	(2)
Corporate Culture	47.9%	53.5%
Strategic Plan	39.7%	
Operating Plan	39.0%	
CEO	37.4%	
Marketing	20.5%	
Production Process	19.0%	
Finance Function	17.6%	
Incentive Compensation	14.3%	
Regulatory Environment	14.0%	
Human Resources	11.4%	
Governance/Board	8.9%	
Other	8.0%	
Obs.	484	1348

Table 10:

External validation of culture measures

This table provides a robustness check by connecting our survey measures of culture to independent, external data sources on culture. In Panel A, we examine how our survey responses relate to an external culture rating derived from crowd-sourced employee reviews on Glassdoor. The key explanatory variable is Q4b, “Our current culture: 4 = is exactly where it should be, . . . , 1 = needs a substantial overhaul.” Additional explanatory variables include the number of employee reviews in the survey year, noise controls (date, response delay, job title, and source of email), additional Q1 controls (sentiment, uninformative response, number of cultural values, culture is changing, culture is mixed), and additional survey controls (profitability, employee turnover, CEO turnover, family firm, firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, credit rating). In Panel B, we connect the cultural values extracted from the open-ended survey questions to those advertised on the company websites. Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Glassdoor culture rating				Glassdoor firm rating	Glassdoor net promoter	Glassdoor approves of CEO
Panel A. Glassdoor comparison	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Culture is where it should be (Q4b)	0.247*** (0.068)	0.168** (0.074)	0.362*** (0.095)	0.267*** (0.057)	0.170*** (0.038)	0.106** (0.050)	0.119** (0.057)
Noise, question, and number of review controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exclude firms with five lowest Glassdoor culture ratings	No	Yes	No	No	No	No	No
Exclude firms with less than 50 reviews	No	No	Yes	No	No	No	No
Additional survey controls	No	No	No	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	171	166	80	171	171	169	169
Adjusted R-squared	45.8%	40.6%	77.5%	75.0%	75.8%	74.8%	76.5%
Panel B. Company website comparison	Cultural values executives describe (Q1, Q14)						
<i>Independent variable = Advertised cultural value</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Adaptability	0.333 (0.211)						
Collaboration		0.099 (0.089)					
Community-oriented			-0.002 (0.191)				
Customer-oriented				0.025 (0.234)			
Detail-oriented					-0.121 (0.181)		
Integrity						-0.240** (0.094)	
Results-oriented							-0.185 (0.190)
Noise and question controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional survey controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	188	188	188	188	188	188	188
Adjusted R-squared	69.5%	73.9%	81.5%	72.2%	67.4%	69.4%	73.3%

Table 11:

External validation of link to business outcomes

This table provides a robustness check by connecting our survey measures of culture to independent, external data sources on financial performance. In Panel A and C, the dependent variable is Tobin's Q and in Panel B, the dependent variable is Total Q (Peters and Taylor, 2017). The key explanatory variable in Panel A and B is Q4b, "Our current culture: 4 = is exactly where it should be, ..., 1 = needs a substantial overhaul." In Panel C, the key explanatory variables are the survey-based aggregate cultural values (Q1, Q14) and aggregate cultural norms (Q6) as well as external proxies for culture. Additional explanatory variables include aggregate formal institutions, leadership, noise controls (date, response delay, job title, and source of email), firm-level Compustat controls (firm size, number of employees, investment-to-capital, tangibility, SG&A), and additional question controls (Q1, Q4, Q4b). Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Survey year	2-year avg.	3-year avg.	4-year avg.	5-year avg.
Panel A. Dependent variable = Tobin's Q					
	(1)	(2)	(3)	(4)	(5)
Culture is where it should be (Q4b)	0.402** (0.184)	0.434** (0.181)	0.453** (0.178)	0.440** (0.175)	0.425** (0.170)
Firm-level Compustat controls	Yes	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes	Yes
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	158	158	158	158	158
Adjusted R-squared	62.2%	64.0%	63.9%	62.6%	62.1%
Panel B. Dependent variable = Total Q					
	(1)	(1)	(2)	(2)	(2)
Culture is where it should be (Q4b)	0.386* (0.225)	0.468** (0.232)	0.514** (0.223)	0.499** (0.218)	0.482** (0.219)
Firm-level Compustat controls	Yes	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes	Yes
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	146	146	147	147	149
Adjusted R-squared	72.1%	73.3%	72.2%	72.0%	70.5%
Panel C. Dependent variable = Tobin's Q					
	(1)	(1)	(2)	(2)	(2)
Aggregate cultural values (Q1, Q14)	-0.084 (0.305)	-0.052 (0.302)	0.063 (0.300)	0.136 (0.290)	0.153 (0.284)
Aggregate cultural norms (Q6)	0.488*** (0.185)	0.530*** (0.183)	0.515*** (0.182)	0.467*** (0.176)	0.427** (0.172)
Best place to work for indicator	0.116 (0.453)	0.033 (0.449)	-0.025 (0.445)	-0.067 (0.432)	-0.066 (0.422)
Glassdoor culture rating	0.496*** (0.181)	0.461** (0.179)	0.444** (0.178)	0.432** (0.172)	0.396** (0.168)
Cultural values advertised on website	-0.401 (0.491)	-0.332 (0.487)	-0.403 (0.482)	-0.461 (0.468)	-0.439 (0.457)
Firm-level Compustat controls	Yes	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes	Yes
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	147	147	147	147	147
Adjusted R-squared	68.7%	69.3%	68.9%	68.2%	67.4%

Appendix A. Survey Questions and Logistics

For our interviews, we promised the executives anonymity to encourage frank discussion. With the interviewee's permission, we recorded and transcribed each interview to ensure accuracy in quotations. We began the interviews on October 22, 2014 and concluded them on April 3, 2015. We began each interview with open-ended questions such as, "What, in your view, is corporate culture?" and "How would you describe the corporate culture at your firm?"¹⁴ This allowed us to initially capture broad themes and then we narrowed the focus as the interview proceeded, without leading the interviewee by our presenting predetermined definitions of corporate culture. We also used interviews to identify under-researched topics and as input to develop our survey instrument. All but one of the executives that we contacted agreed to be interviewed (and he told us, "read my book!"). The interviews occurred over the phone or in-person and vary in length, lasting from 40 to 90 minutes. The executives seemed thoughtful and forthcoming in their responses.

Reliable survey tools require careful design and sample planning. To minimize measurement error, we consulted 12 experts to vet the survey design and administered 20 beta tests prior to launching the survey. After beta-testing and receiving feedback from survey design specialists, the final survey contains 14 main questions, some with sub-parts dependent on the initial answer selected, and was administered over the Internet. The survey is anonymous and does not require subjects to disclose their names or their corporate affiliation and is IRB approved at the authors' home institutions. One advantage of online administration is the ability to randomly scramble the order of choices within a question, so as to mitigate potential order-of-presentation effects. Specifically, the survey scrambles the order of answers in questions 4d, 6, 13 and 14. For the remaining questions, order of sub-questions is deemed not to be a first-order issue (demographic questions, qualitative questions) or there is a natural order to the presented alternatives (e.g., 3, 7 and 11). Participants were allowed to skip questions if they did not want to answer them, which is why the number of observations varies across

¹⁴We conduct interviews according to the scientific practices described in [Bradburn and Sudman \(1982\)](#).

questions. Most multiple-choice questions included a free-text response option, so that survey takers could provide answers that were not explicitly specified in the question.

In addition, we include redundant questions that rephrase and reframe issues of interest. These additional questions help attenuate the effect of noise attributable to potential respondent behavioral biases. To avoid executives' engaging in "cheap talk" about culture, we use a mix of questions that elicit hypothetical and real business decisions. Neuroscience research suggests these two types of questions when asked in isolation activate different parts of the brain. When the neuroscience researchers switched back and forth between hypothetical and real choices, they discovered brain activity was stronger in the region associated with real choices, serving to reduce differences in response (Kang, Rangel, Camus, and Camerer, 2011). Thus, by requiring respondents to switch back and forth between real and hypothetical decisions, our survey design tries to mitigate selection concerns.

Finally, invitations to take the survey were sent via email to a diverse sample of corporate executives and invitations were sent in a staggered manner. We used two key databases of email addresses of CFOs supplied by (i) a list of CFO email addresses the Fuqua School of Business at Duke University maintains for their quarterly survey; and (ii) a list of CEO and CFO email addresses from among the alumni of the Columbia Business School. We staggered our initial event invitation on two dates (September 15 or September 22, 2015) to take the survey, a reminder was sent a week or more later to these sub-groups (September 29, October 6, October 20). The survey closed on October 31, 2015. We supplemented the main email list from Duke's quarterly survey and Columbia Business School with additional email lists from CFO magazine, the Center for Leadership and Ethics (COLE) at Duke University, the Fuqua School of Business Board of Visitors, and Fortune 1000 CEOs and CFOs. Our baseline summary results do not vary whether we include all of these groups or not.



Duke University/Columbia University/CFO Magazine Corporate Culture Survey 2015

Participation in this survey is voluntary. You do not have to answer every question and you can withdraw from participation at any time by closing your internet browser. The survey is anonymous and we will only report aggregated data. At the end of the survey, you can indicate whether you would like to receive a copy of our report.

1. Briefly, what words or phrases best describe the current corporate culture at your firm?

2. How important do you believe corporate culture is at your firm? (choose best option)

Very important Important Somewhat important Not important Don't know

3. In terms of all of the things that make your firm valuable, where would you place corporate culture? (choose best option)

- Top 3
 Top 5
 Top 10
 Not in Top 10

4. How closely does your current corporate culture track with your stated firm values?

Very closely Somewhat Not very closely Not at all

4b. Our firm's corporate culture: (choose best option)

- Is exactly where it should be
 Needs some work but is close to where it should be
 Needs considerable work to get to where it should be
 Needs a substantial overhaul

Continue





4c. Do you believe that improving your corporate culture would increase your firm's value?

Yes
 No

4d. What is preventing your firm's culture from being exactly where it should be?

	Strongly disagree				Strongly agree
	-2	-1	0	+1	+2
Our cultural values are not fully aligned with our business needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has inefficient workplace interactions (e.g., too much time spent building consensus, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our employees are not fully committed to the culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm policies work against the intended culture (e.g., compensation, governance, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership needs to invest more time to develop the culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our culture has not caught up with recent changes in the business environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other reasons why your corporate culture is not where it should be:

Continue





5. Which of the following have been most influential in setting your firm's current culture? (Check up to 4):

<input type="checkbox"/> Peer firms	<input type="checkbox"/> Our reputation or image in the marketplace
<input type="checkbox"/> Board of Directors	<input type="checkbox"/> Hard times we experienced
<input type="checkbox"/> Owners	<input type="checkbox"/> Changing needs of the marketplace
<input type="checkbox"/> Non-management employees	<input type="checkbox"/> Incentive compensation
<input type="checkbox"/> Founder	<input type="checkbox"/> Internal policies and procedures
<input type="checkbox"/> Past CEO	<input type="checkbox"/> Other: <input type="text"/>
<input type="checkbox"/> Current CEO	

For the remaining questions, define an **effective corporate culture** as one that promotes the behaviors needed to successfully execute the firm's strategies and achieve its goals.

6. In the context of your firm's current culture, please indicate which factors determine the effectiveness of your culture.

	Key factor helping our culture to be more effective	Little or no effect on culture	Works against our culture being effective	Don't know
Urgency with which employees work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordination among employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trust among employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees' comfort in suggesting critiques	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consistency and predictability of employees' actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees' willingness to report compliance risks or unethical behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hiring, firing, and promotion decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broad agreement about goals and values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Decision-making reflects firm's long-term interests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New ideas develop organically	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Continue





7. Do you think your company takes the right amount of risk in its investments to achieve its goals?

- Yes, right amount of risk
 No, too little risk
 No, too much risk
 Don't know

8. Suppose your firm is considering two projects A and B.

- A and B are very similar in that they require the same capital up front, have the same expected life, and have the same probability of failure.
- A is more valuable than project B (A has greater NPV).
- A generates negative cash flows for the first two years, while B has positive cash flows in all years.

Assuming all cash flow forecasts are equally accurate, does your firm's culture make it more likely that project A or B will be chosen?

- A
 B
 Not Sure

Does your firm's culture play a role in your company's preference for project A?

- Yes
 No

9. The potential for: (choose best option)

- value destruction from ineffective culture is greater than value creation from effective culture
 value destruction from ineffective culture and value creation from effective culture are about the same
 value creation from effective culture is greater than value destruction from ineffective culture

Continue





10. Do you think having a poorly implemented/ineffective culture at a company increases the chances that an employee would do something unethical (or even illegal)?

Yes

No

11. You work at a firm with an effective, strong culture. You are evaluating two acquisition targets, A and B.
- A and B would bring the same strategic and operational benefits if acquired, and the targets are identical in all dimensions except corporate culture.
 - Company A's culture is very aligned with your firm's culture, whereas company B's culture is not at all aligned.

Relative to how much you would offer for A, how much less would you offer for company B due to the culture misalignment? (choose one)

We would offer the same amount for B as for A

We would offer 5% less for B

10% less for B

20% less for B

30+% less for B

We would not make an offer for B

Don't know

12. Sometimes companies engage in end-of-quarter practices such as delaying valuable projects in order to hit market expected earnings. How likely is it that an effective corporate culture would reduce the chance that such actions are taken?

Extremely likely Very likely Somewhat likely Not likely Don't know

13. Do the following items reinforce or work against the effectiveness of your corporate culture:

	Works against	No impact	Reinforces
Incentive compensation	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finance function / department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Governance/Board of Directors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senior management behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What are the most important ways incentive compensation works against your corporate culture? [check all that apply]

Focuses employees too much on short-term objectives

Leads to fear of failure and insufficient risk taking

Attracts/retains the wrong type of people to the firm

Other



You are almost done! Hang in there!

On this question, we'd like to learn about the effects of corporate culture

14. To what extent does the corporate culture at your firm affect the following items:

	No effect	Little	Moderate	Big effect	Don't know or NA
Firm Value	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Profitability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Quality of our financial reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Creativity	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tax aggressiveness	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much debt we use	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Willingness to take on risky projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management of downside risk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Our rate of growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Compliance	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Productivity	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide a specific example of how culture affects firm profitability.

Please provide a specific example of how culture affects management of downside risk.

Continue





Thank you for your help!

Demographics (Important to complete!)

1. In your particular industry, how would you characterize your firm's competitive position? (choose best option)

- Market leader
 One of the leading firms
 In the middle of the pack
 Challenger

2. My company's credit rating is approximately: (e.g., AA-, BBB+, no rating, etc.)

Check here if you do not have a rating, and please estimate what your rating would be.

3. During the last year, we earned an after-tax profit.

- True
 False

4. Over the last 3 years, what is your company's approximate:

<input type="text"/>	% ROE (e.g., 11%)
<input type="text"/>	% Annual growth in revenue (e.g., 8%)
<input type="text"/>	% Total debt / total assets (e.g., 25%)

5. Approximate proportion of your employees that have worked at your firm less than 3 years %

6. Managers own approximately % of my company.

7. Our employee turnover is the industry average.

8. Our rate of CEO turnover is the industry average.

9a. Ownership (choose one)

- Public
 Private
 Government or non-profit

9b. Family (choose one)

- Family ownership and operational influence
 Family ownership but no operational influence
 No family ownership nor operational influence

10. How important is meeting or beating quarterly earnings estimates to your company?

- Very important Somewhat important Not important Not applicable

11a. Our company is approximately <input type="text"/> years old.	11b. Where is your firm located? <input type="text"/>
---	---

12. What is your job title?

CEO
 CFO, Treasurer, or similar
 Other:

13a. CEO Age	13b. CEO time in job	13c. Percentage of CEO pay that is incentive based (stock, options, bonus):
<input type="radio"/> < 40 <input type="radio"/> 40-49 <input type="radio"/> 50-59 <input type="radio"/> 60 +	<input type="radio"/> < 4 years <input type="radio"/> 4-9 years <input type="radio"/> 10-19 years <input type="radio"/> 20 + years	<input type="radio"/> None <input type="radio"/> 1-24% <input type="radio"/> 25-49% <input type="radio"/> 50-74% <input type="radio"/> 75% +

14. Sales Revenue

Less than \$25 million
 \$25-\$99 million
 \$100-\$499 million
 \$500-\$999 million

\$1-\$4.9 billion
 \$5-\$9.9 billion
 More than \$10 billion

15. Number of Employees

Fewer than 50
 50-99
 100-499
 500-999

1000-2499
 2500-4999
 5000-9999
 More than 10,000

16. Industry

Retail/Wholesale
 Banking/Finance/Insurance/Real Estate
 Mining/Construction
 Transportation & Public Utilities
 Energy
 Services, Consulting
 Agriculture, Forestry, & Fishing

Public Administration
 Communication/Media
 Technology [Software/Hardware/Biotech]
 Manufacturing
 Healthcare/Pharmaceutical
 Other Industry

17. How many distinct business segments does your firm have?

[Click here to finish](#)



Appendix B. Variable Definitions

Aggregate ethics outcomes is the mean of the following four components:

1. **Compliance** which is part of question 14 “To what extent does the corporate culture at your firm affect the following items: compliance” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.
2. **Tax Aggressiveness** which is part of question 14 “To what extent does the corporate culture at your firm affect the following items: tax aggressiveness” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.
3. **Reporting Quality** which is part of question 14 “To what extent does the corporate culture at your firm affect the following items: reporting quality” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.
4. **Rescale Beat EPS** which is a demographic variable, “How important is meeting or beating quarterly earnings estimates to your company?” where 1 = Not important, 2.5 = Somewhat important, 4 = Very important. Please note we rescale this question to correspond to the [1, 4] scale of question 14 variables. Specifically, we transform [-1, 1] scale to -1 = 1, 0 = 2.5, and 1 = 4.

Aggregate innovation outcomes is the mean of the following two components:

1. **Creativity** which is part of question 14 “To what extent does the corporate culture at your firm affect the following items: creativity” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.
2. **Project Risk** which is part of question 14 “To what extent does the corporate culture at your firm affect the following items: project risk” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.

Aggregate productivity and firm value outcomes is the mean of the following three components:

1. **Firm Value** which is part of question 14 “To what extent does the corporate culture at

your firm affect the following items: firm value” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.

2. **Profitability** which is part of question 14 “To what extent does the corporate culture at your firm affect the following items: profitability” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.

3. **Productivity** which is part of question 14 “To what extent does the corporate culture at your firm affect the following items: productivity” where 1 = no effect, 2 = little effect, 3 = moderate effect, and 4 = big effect.

Aggregate all outcomes is the mean of the aggregate ethics, aggregate innovation, and aggregate productivity and firm value outcomes. **Aggregate cultural values** is the mean of seven cultural values independently hand-coded by five reviewers for the open-ended question 1, “Briefly, what words or phrases best describe the current corporate culture at your firm?” and the open-ended part of question 14, “Please provide a specific example of how culture affects X.” Cultural values can take on a score of 1, 0 or -1 where a negative value indicates the antonym. The hand-coding categorized the written responses into seven individual cultural values. Three out of five reviewers had to indicate the same score for each individual cultural value in the response for it to be coded that way. The individual cultural values align with the principal components of culture (O’Reilly, Chatman, and Caldwell, 1991; Chatman, Caldwell, O’Reilly, and Doerr, 2014), when the respondents write descriptions consistent with the following:

1. **Adaptability:** willing to experiment, fast-moving, quick to take advantage of opportunities, taking initiative
2. **Collaboration:** team-oriented, supportive, not aggressive, low levels of conflict
3. **Community:** respectful of diversity, community, and the environment, inclusive, caring, and open
4. **Customer-orientation:** listening to customers, being market driven, taking pride in service

5. **Detail-orientation:** paying attention to detail, being precise, emphasizing quality and safety, being analytical
6. **Integrity:** high ethical standards, being honest, transparent
7. **Results-orientation:** high expectations for performance, focus on achievement, competitive, demanding

Aggregated cultural norms is the mean of the nine cultural norms extracted from question 6, “In the context of your firm’s current culture, please indicate which factors determine the effectiveness of your culture,” where -1 = Works against our culture being effective, 0 = Little or no effect on culture, 1 = Key factor helping our culture to be more effective. The individual cultural norms are:

1. **Agreement about goals and values**
2. **Consistency and predictability of actions**
3. **Coordination among employees**
4. **Decision-making reflects long-term**
5. **Employees comfort in suggesting critiques**
6. **New ideas develop organically**
7. **Trust among employees**
8. **Urgency with which employees work**
9. **Willingness to report unethical behavior**

Aggregate formal institutions is the mean response about the four formal institutions that are options in question 13 and question 6 “Do the following items reinforce or work against the effectiveness of your corporate culture” where the scale is -1 = Works against, 0 = No impact, and 1 = Reinforces.

1. Corporate governance
2. Finance function
3. Hire, fire, promote (Please note this option comes from question 6 “In the context of your firm’s current culture, please indicate which factors determine the effectiveness of

your culture” but has the same scale -1 = Works against, 0 = No impact, and 1 = Key factor)

4. Incentive compensation

Demographic controls include profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry, and credit rating. Non-response categorical variables included as its own category.

Noise controls include date of survey response, response delay from initial email, job title, and source of email (i.e., Duke, Columbia, *CFO* magazine)

Addition question controls include controls extracted from question 1, question 4, and question 4b.

1. Question 1 controls are hand-coded from the open-ended response to “Briefly, in words or phrases best describe the current corporate culture at your firm?” The controls include an indicator for if the response is uninformative (e.g., wrote the definition of culture), for the emotion in question 1 response (1 = positive emotion, 0 = neutral, -1 = negative emotion), an indicator for saying the firm has no culture, the number of values mentioned (this also serves as a proxy for length of response), an indicator if the executives describe the culture as changing, an indicator for if the executives discuss positives and negatives of the culture, an indicator for if the executives describe how decisions are delegated (e.g., hierarchical, unstructured, or decentralized), and an indicator for if an executive describes an ideology underlying actions and decisions (e.g., progressive or conservative).
2. Question 4 controls for the response to “How closely does your current corporate culture track with your stated firm values?” where 1 = Not at all, 2 = Not very closely, 3 = Somewhat, and 4 = Very closely”
3. Question 4b controls for the response to “Our firm’s culture:” where 1 = Needs a substantial overhaul, 2 = Needs considerable work to get to where it should be, 3 = Needs

some work but is close to where it should be, and 4 = Is exactly where it should be.

Formal institutions controls are either aggregate formal institutions if the regression involves aggregate independent variables or four different controls, one for each of the formal institutions (i.e., corporate governance, finance function, hire, fire, promote, and incentive compensation) if the regression involves individual independent variables.

Leadership control is the mean response to question 13 “Does senior management behavior reinforce or work against the effectiveness of your corporate culture” where the scale is -1 = Works against, 0 = No impact, and 1 = Reinforces.

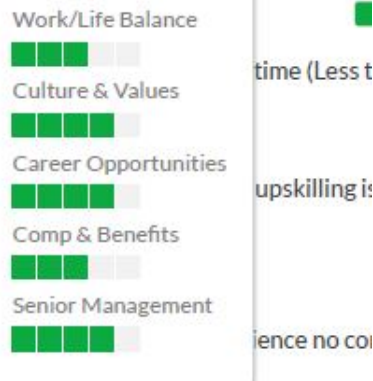
“Halo Effect” specification includes response to the hypothetical asked in question 11 “You work at a firm with an effective, strong culture. You are evaluating two acquisition targets, A and B. A and B would bring the same strategic and operational benefits if acquired, and the targets are identical in all dimensions except corporate culture. Company A’s culture is very aligned with your firm’s culture, whereas company B’s culture is not at all aligned. Relative to how much you would offer for A, how much less would you offer for company B due to the culture misalignment?” By disconnecting from the actual culture at the survey respondent’s firm, this question will not be systematically correlated with the firm’s true culture.

Glassdoor culture rating is derived from crowd-sourced employee reviews on www.glassdoor.com. Each employee review has a “Culture & Values” star rating, which we convert into a count variable that ranges from 1 to 5, with 5 stars representing the best external culture rating. We limit our sample to the ratings provided by current employees who rated the firm during the survey year. The figure below helps to illustrate exactly which component (just the second row) that we use as our external culture rating. In addition, we consider the other rating metrics including the overall firm rating, the recommends rating, and the employees’ approval of CEO rating.

May 10, 2018

"Associate Consultant"

★★★★ Former Employee



Glassdoor cultural values are derived from natural language processing (NLP) of the text of the Glassdoor reviews. To transform the Glassdoor reviews into cultural values, we follow the approach in (Popadak, 2016; Grennan, 2020). Specifically, we create a normalized vector of lemmatized word counts from the text in all employee reviews (current and former) in the year of the survey. We then calculate the cosine similarity between the lemmatized Glassdoor vector and lemmatized vector of culture words for each cultural value. We do this separately for the pros and cons. Our final metric is the pros cosine similarity less the cons cosine similarity for each cultural value. The set of culture words, which include nouns, verbs, adjectives/adverbs and phrases as well as their synonyms are the same ones that we used to guide the hand-coding of cultural values from Q1 and Q14. The full set of words, the associated cultural values, the assigned value (+1 if synonym, -1 if antonym), the word sense from WordNet, and part of speech are available for download. Table B.1 below illustrates a few examples of text from actual Glassdoor reviews with the relevant cultural word in context.

Best Places to Work designation is an indicator variable equal to one when a firm appears on the Forbes' 100 Best Places to Work list in the survey year.

Brand rating is the rank of the firm if it is included in the top-500 list of Brand Finance rankings, and 501 otherwise. The list is constructed by Brand Finance www.brandirectory.com.

com.

KLD diversity is the number of diversity strengths minus the number of diversity concerns from KLD.

KLD data security concern is KLD product concern related to “privacy and data security.”

Patenting firm is an indicator = 1 if the firm has been granted a patent by the U.S. Patent and Trademark Office.

Reputational risk is derived from RepRisk ratings. It is a proprietary algorithm developed by RepRisk that dynamically captures and quantifies a company’s exposure to Environmental, Social, and Governance (ESG) and business conduct risks. The ratings range from AAA to D with 10 unique notches and where AAA is the lowest risk exposure. To translate this rating system into a numeric scale, we let AAA = 10 and D = 1. Thus, a firm with a good reputation has the lowest risk exposure.

Restatements comes from Audit Analytics Restatements data. The main measure of restatements includes all restatements as opposed to just material restatements that required the filing of an 8-k with the U.S. Securities and Exchange Commission. We match to the survey sample using the Best Edgar Ticker variable available in Audit Analytics which results in a match rate of about 70%.

Sustainalytics ESG score comes from Sustainalytics data. We use the historical weighted score version of the data and the variable labeled *total_esg_score*. Sustainalytics’ ESG Ratings measure how well companies proactively manage the environmental, social and governance issues that are the most material to their business

Corporate accounting data are from the Compustat-CRSP fundamental annual database. Definitions are as follow.

$$\mathbf{Assets} = AT$$

Credit Rating is a categorical variable that can take on one of three values: investment grade, high yield, and no rating. *SPLTCRM* gives the letter rating. Investment grade requires a rating of BBB- or higher on S&P scale.

$$\text{Debt-to-Assets} = (DLC + DLTT)/AT$$

Earnings surprise follows the methodology outlined in Livnat and Mendenhall (2006). $SUE1_{jt} = \frac{X_{jt} - X_{jt-4}}{P_{jt}}$ where X_{jt} is the primary Earnings Per Share (EPS) before extraordinary items for firm j in quarter t , and P_{jt} is the price per share for firm j at the end of quarter t from Compustat. We adjust for stock splits using Compustat's adjustment factor (*AJEXQ*). We use Compustat's primary (*EPSPXQ*) or diluted (*EPSFXQ*) EPS for X_{jt} depending on if the majority of analyst EPS forecasts are based on primary or diluted basis. Similarly, we also then adjust to divide by the number of shares used to calculate primary EPS (*CSHPRQ*) or diluted EPS (*CSHFDQ*). To link IBES and CRSP, we use the IBES-CRSP link table available on WRDS. $SUE2_{jt}$ excludes special items from EPS which is equivalent to $SPIQ \times 0.65$. $SUE3_{jt}$ is defined similarly to $SUE1$, except X_{jt-4} and X_{jt} are replaced with a measure of analyst's expectations and actual earnings as reported by IBES. The measure for analysts' expectations is the median of latest individual analysts forecasts issued within the 90 days prior to the earnings announcement date. A positive earnings surprise is defined as the intersection of the set of positive observations for SUE1, SUE2, and SUE3. Similarly, a negative earnings surprise is defined as the intersection of the set of negative observations for SUE1, SUE2, and SUE3. Large earnings surprises are defined as being in either the bottom quartile or the upper quartile of a surprise. The quartile is defined separately for each SUE measure. A small positive earnings surprise is defined as a surprise greater than 0 but not in the upper quartile of surprises. Similarly, a small negative earnings surprise is defined as a negative surprise that is not in the bottom quartile of surprises. Finally, both small and large surprises are defined as the intersection of the three measures.

Firm Size = $\log(AT)$, in which AT is in real 2010 dollars.

$$\text{Investment-to-Capital} = ((CAPX - SPPE) - (CAPX_{t-1} - SPPE_{t-1}))/PPENT_{t-1}$$

$$\text{Market Capitalization (MEQ)} = PRCC_F \times CSHO$$

Market Value of Assets (MVA) = $MEQ + DLC + DLTT + PSTKL - TXDITC$

Number of Employees = EMP

Profitability = $OIBDP/AT$

R&D Expenses = $\log(1 + XRD)$ where missing values are set equal to 0

Return on Equity = NI/SEQ_{t-1}

Revenue = $REVT$

Revenue Growth = $REVT/REVT_{t-1}$

SG&A = $XSGA/AT$

Tangibility = $PPENT/AT$

Tobin's Q = MVA/AT

Total Q = Q_{TOT} (Peters and Taylor, 2017).

Management ownership data are from Execucomp. Definitions are as follow.

CEO Age = $PAGE$

CEO Time in Job = $(LEFTOFC - BECAMECEO)/365.25$. If the CEO did not leave office in the calendar year prior to the survey, then $LEFTOFC$ is the date of the survey.

Management Ownership = $SHROWN_{TOT_PCT}$

Table B.1:
Glassdoor word-in-context examples for adaptability

This table provides example text from actual Glassdoor reviews. The rows contain example synonyms and antonyms that we use as key words when creating word count vectors of the Glassdoor pros and cons text for adaptability. The cosine similarity score is then computed between the actual word count vector and a vector with only adaptability words. The words-in-context help illustrate how textual analysis of Glassdoor reviews can capture elements of culture.

Word (1)	Word-in-context (2)	Relevance to adaptability (3)
adapt	complex organization, undergoing frequent changes to adapt to marketplace; act rapidly and adapt; company is able to adapt and change; adapts to the market needs; the people are lovely and have a real desire to make things happen and to change and adapt; company can't adapt to changing business conditions; leadership adapts and changes to meet their goal; entrepreneurial environment, able to adapt organization to challenges rapidly.	Syn.
chance	fair chance; great chance to learn; chances to start at the bottom and end at the top; given a chance; lots of chances; take a chance and innovate.	Syn.
creativity	conducive environment for creativity; loads of creativity from product to social media; work can be done with confidence and scope of creativity prevails; the three pillars of the culture are uncap creativity, be bold, and tell the truth; company based on creativity, innovation, and improvement; ideas are listened to and creativity is encouraged; management promotes creativity and out of the box thinking to solve business issues.	Syn.
develop	Keep developing new and innovative products; funds for developing disruptive technology; ability to develop as a leader; continue to identify and develop talent; I was able to develop strong leadership and motivational skills; develop a strategy; good company to help develop your skills.	Syn.
entrepreneurial	entrepreneurial culture; innovative and entrepreneurial; entrepreneurial attitude is rewarded; strong entrepreneurial spirit in the company; entrepreneurial environment; opportunities to be entrepreneurial; entrepreneurial spirit - you can make your own future; start-up, entrepreneurial culture; opportunity to be creative / entrepreneurial.	Syn.
rigid	slow, rigid, behind in technology; culture feels very rigid; extremely structured environment, unnecessarily rigid; a rigid and old-fashioned company; rigid with rules; rigid environment, draconian rules and outdated ideas; the company is rigid and boring; conservative workplace with a rigid, top-down management style; trying to force diverse businesses into a rigid clone of the other businesses; all managers can do is work within the confines of the rigid system.	Ant.
slow	slow to change; matrix org that slows/prevents work from getting done; believe in slow and steady; slow to react to change; slow moving and old school culture; management that moves slow and doesn't take many risks; pace is slow; slow, unorganized, and rigid; conservative culture and slow decisions.	Ant.
stable	stable company; stable work environment; stable business model; stable financially; stable -- has been around since the 1800s; stable and consistent job; strong company with stable processes; opportunity to have a stable, reliable career; very stable and ethical company, don't have to worry about an Enron situation; changing industry but large, stable company; strong, stable company with a conservative atmosphere.	Ant.
status quo	poor accountability, content with status quo; relying on the status quo; lots of new blood challenging the status quo; the status quo won't cut it anymore; tactics to maintain the status quo; people that look for the status quo; people just want to coast on the status quo; management perpetuates the status quo.	Ant.
traditional	management has a traditional mindset; traditional company; stick in traditional styles of management; traditional/conservative company; traditional and old-fashioned; traditional and stable; being too traditional scares off younger generation; traditional, respectable company; slow, traditional company.	Ant.

Appendix C. Internet Appendix C-F

Table C.1:
Benchmarking survey responses to Compustat

This table provides descriptive statistics from the survey demographic questions. All Compustat variables have been coded to match the survey categories. Column 1 summarizes the public firms from the survey and Column 2 summarizes public firms from Compustat or Execucomp for the most recent fiscal year end that occurred before the date of the survey (i.e., October 2015). Both samples are limited to North American firms. For a detailed description of each variable, see the definitions in Appendix B.

	Survey Public Firms (N = 314)	Compustat Public Firms		Survey Public Firms (N = 314)	Compustat Public Firms
Sales Revenue			Number of Employees		
1 = Less than \$25 million	2%	13%	1 = Fewer than 100	6%	20%
2 = \$25-\$99 million	8%	13%	2 = 100-499	10%	21%
3 = \$100-\$499 million	12%	21%	3 = 500-999	7%	10%
4 = \$500-\$999 million	10%	11%	4 = 1000-2499	8%	13%
5 = \$1-\$4.9 billion	26%	19%	5 = 2500-4999	12%	10%
6 = \$5-\$9.9 billion	17%	5%	6 = 5000-9999	15%	9%
7 = More than \$10 billion	25%	17%	7 = More than 10,000	44%	16%
Mean	5.00	3.94	Mean	5.29	3.68
T-stat on mean difference	-9.21		T-stat on mean difference	-12.89	
Credit Rating			Profitability		
0 = No Rating or High Yield	87%	87%	0 = No after-tax profit	12%	21%
1 = Investment Grade	13%	13%	1 = After-tax profit	88%	79%
Mean	0.13	0.13	Mean	0.88	0.79
T-stat on mean difference	0.11		T-stat on mean difference	-3.71	
CEO Age		Execucomp	CEO Time in Job		Execucomp
1 = Less than 40	1%	2%	1 = Less than 4 years	39%	35%
2 = 40 - 49	17%	26%	2 = 4-9 years	32%	34%
3 = 50 - 59	54%	53%	3 = 10-19 years	22%	24%
4 = 60 or greater	28%	19%	4 = 20 years or more	8%	8%
Mean	3.09	2.89	Mean	1.98	2.05
T-stat on mean difference	-4.99		T-stat on mean difference	1.05	
Debt-to-Assets			Return on Equity		
Mean	0.25	0.23	Mean	0.14	0.12
T-stat on mean difference	-1.34		T-stat on mean difference	-1.10	
Revenue Growth			Management Ownership		Execucomp
Mean	0.08	0.15	Mean	9%	3%
T-stat on mean difference	2.02		T-stat on mean difference	-16.86	

Table C.2:

Summary statistics for demographic variables

This table provides descriptive statistics from the survey demographic variables questions for all survey respondents from executives at public and private North American firms. For a detailed description of each variable, see Appendix B. The survey questions are presented in Appendix A.

Survey respondent demographics	Obs.	Mean	Std. dev.	Median	Percent of respondents								
					<u>No rating</u>	<u>High yield</u>	<u>Investment grade</u>						
Credit rating (0=No rating, 1=High yield, 2=Investment grade)	1059	1.44	0.82	2	21%	13%	66%						
Earned an after-tax profit	1065	0.84	0.37	1									
ROE	730	0.15	0.19	0									
Revenue growth	815	0.13	0.20	0									
					<u>Zero debt</u>	<u>Has debt</u>							
Debt / total assets	734	0.26	0.25	0	19%	81%							
Employees with firm less than 3 years	973	0.32	0.26	0									
Managerial ownership	958	0.28	0.38	0.05									
					<u>< ind. avg.</u>	<u>= ind. avg.</u>	<u>> ind. avg.</u>						
Employee turnover (1=less than)	1032	1.61	0.75	1	55%	29%	16%						
CEO turnover (1=less than)	1022	1.26	0.57	1	80%	14%	6%						
					<u>Public</u>	<u>Private</u>							
Ownership (1=Public, 2=private)	1057	1.70	0.46	2	30%	70%							
					<u>Family-owned and run</u>	<u>Just family-owned</u>	<u>Not family-owned</u>						
Family ownership	787	1.97	0.97	2	49%	6%	45%						
Firm age	1030	45.2	42.3	30									
					<u><40</u>	<u>40-49</u>	<u>50-59</u>	<u>60+</u>					
CEO age	1057	54.5	6.9	55	5%	18%	46%	31%					
					<u><4</u>	<u>4-9</u>	<u>10-19</u>	<u>20+</u>					
CEO tenure (years)	1035	11.2	8.5	7	29%	26%	23%	22%					
					<u>None</u>	<u>1-24%</u>	<u>25-49%</u>	<u>50-74</u>	<u>75+%</u>				
CEO pay that is incentive based	976	38.3	32.1	38	22%	20%	21%	18%	19%				
					<u><\$25 mil.</u>	<u>\$25-99</u>	<u>\$100-499</u>	<u>\$500-999</u>	<u>\$1-4.9 bil.</u>	<u>\$5-9.9 bil.</u>	<u>\$10+ bil.</u>		
Sales revenue	1052	3.00	1.99	2	31%	20%	16%	7%	11%	6%	9%		
					<u><50</u>	<u>50-99</u>	<u>100-499</u>	<u>500-999</u>	<u>1000-2499</u>	<u>2500-4999</u>	<u>5000-9999</u>	<u>10,000+</u>	
Number of employees	1070	2685	4141	300	26%	11%	22%	7%	8%	6%	5%	16%	
Number of segments	1015	2.9	1.8	3.0									

Table C.3:

Correlation matrix for survey variables

This table reports some cross-correlations among the variables in the survey. The sample is limited to survey responses from executives at public and private North American firms. For a detailed description of each variable, please see the definitions in Appendix B.

Culture, Formal Institutions, and Leadership	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
<i>Cultural values (Q1, Q14)</i>																				
(1) Adaptability	1.00																			
(2) Collaboration	0.19	1.00																		
(3) Community	0.27	0.38	1.00																	
(4) Customer-oriented	0.07	0.10	0.15	1.00																
(5) Detail-oriented	0.08	0.13	0.15	0.23	1.00															
(6) Integrity	0.08	0.17	0.27	0.16	0.23	1.00														
(7) Results-oriented	0.29	0.20	0.30	0.19	0.25	0.17	1.00													
<i>Cultural norms (Q6)</i>																				
(8) Agreement about goals and values	0.15	0.25	0.24	0.11	0.18	0.17	0.18	1.00												
(9) Consistency and predictability of actions	0.08	0.15	0.12	0.08	0.13	0.13	0.12	0.38	1.00											
(10) Coordination among employees	0.20	0.23	0.22	0.12	0.13	0.14	0.17	0.40	0.35	1.00										
(11) Decision-making reflects long-term	0.15	0.22	0.20	0.10	0.18	0.13	0.18	0.50	0.35	0.39	1.00									
(12) Employees comfort in suggesting critiques	0.25	0.22	0.22	0.08	0.10	0.14	0.20	0.39	0.32	0.45	0.42	1.00								
(13) New ideas develop organically	0.24	0.19	0.22	0.08	0.09	0.10	0.18	0.42	0.30	0.37	0.43	0.46	1.00							
(14) Trust among employees	0.18	0.28	0.27	0.10	0.13	0.17	0.19	0.47	0.34	0.63	0.44	0.48	0.38	1.00						
(15) Urgency with which employees work	0.19	0.16	0.16	0.07	0.09	0.09	0.19	0.24	0.31	0.41	0.27	0.34	0.29	0.42	1.00					
(16) Willingness to report unethical behavior	0.09	0.14	0.15	0.09	0.13	0.15	0.12	0.36	0.33	0.29	0.34	0.40	0.29	0.31	0.18	1.00				
<i>Formal Institutions (Q6, Q13)</i>																				
(17) Corporate governance	0.14	0.20	0.21	0.15	0.17	0.21	0.22	0.29	0.16	0.21	0.26	0.18	0.13	0.23	0.11	0.24	1.00			
(18) Finance function	0.06	0.09	0.15	0.08	0.09	0.17	0.11	0.14	0.15	0.16	0.16	0.12	0.09	0.17	0.13	0.15	0.35	1.00		
(19) Hire, fire, promote	0.15	0.21	0.18	0.08	0.09	0.11	0.16	0.42	0.37	0.39	0.52	0.41	0.41	0.46	0.33	0.31	0.19	0.14	1.00	
(20) Incentive compensation	0.20	0.19	0.19	0.12	0.15	0.12	0.22	0.25	0.20	0.24	0.22	0.22	0.14	0.26	0.23	0.13	0.35	0.32	0.22	1.00
<i>Leadership (Q13)</i>																				
(21) Senior management	0.20	0.30	0.35	0.21	0.24	0.22	0.27	0.34	0.23	0.28	0.33	0.24	0.21	0.35	0.18	0.22	0.52	0.31	0.24	0.47

Table C.4:

Corporate culture by public ownership

This table provides descriptive statistics by public ownership. Panel A summarizes the value of corporate culture. Panel B summarizes the actions influenced by corporate culture. Panel C summarizes business outcomes affected by corporate culture. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B.

	Public Firms	Public Firm Mean	Private Firms	Private Firm Mean	T-stat on Public vs. Private Mean Difference
Panel A. The Value of Corporate Culture					
Q2 How important?	311	3.60	735	3.53	1.40
Q3 Top issue?	314	3.25	742	3.25	0.05
Q4c Improve culture increases value?	262	0.93	594	0.91	1.08
Q11 Discount for misaligned culture?	261	3.47	649	3.83	-2.90
Panel B. Actions Influenced by Corporate Culture					
Q7 Take right amount of investment risk	293	-0.24	676	-0.15	-2.02
Q7b Culture is reason for investment risk	227	2.74	525	2.69	0.62
Q8 Choose greater NPV project	275	0.60	622	0.59	0.29
Q8b Culture influences NPV project preference	176	0.80	377	0.79	0.43
Q10 Increases chance do something unethical	298	0.87	712	0.84	1.13
Q12 Earnings management	299	2.55	690	2.57	-0.28
Panel C. Business Outcomes					
Q14 Firm Value	301	3.44	722	3.43	0.12
Q14 Profitability	299	3.45	732	3.43	0.50
Q14 Quality of our financial reporting	302	3.08	716	2.86	3.30
Q14 Creativity	302	3.33	727	3.44	-2.15
Q14 Tax aggressiveness	269	2.16	663	2.10	0.86
Q14 How much debt we use	277	2.44	691	2.41	0.40
Q14 Willingness to take on risky projects	304	3.23	723	3.18	0.98
Q14 Management of downside risk	297	3.15	715	3.08	1.30
Q14 Our rate of growth	296	3.39	728	3.39	-0.05
Q14 Compliance	300	3.32	716	3.05	4.01
Q14 Productivity	298	3.48	724	3.52	-0.72

Table C.5:

Corporate culture by family ownership

This table provides descriptive statistics by family ownership. Family ownership includes both those with and without operational influence at their firm. Panel A summarizes the value of corporate culture. Panel B summarizes the actions influenced by corporate culture. Panel C summarizes business outcomes affected by corporate culture. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B.

	Family Firm	Family Firm Mean	Non-family Firms	Non-family Firm Mean	T-stat on Family vs. Non-family Mean Difference
Panel A. The Value of Corporate Culture					
Q2 How important?	426	3.50	355	3.56	1.12
Q3 Top issue?	429	3.17	357	3.28	1.57
Q4c Improve culture increases value?	351	0.89	288	0.94	2.10
Q11 Discount for misaligned culture?	372	3.82	311	3.65	-1.33
Panel B. Actions Influenced by Corporate Culture					
Q7 Take right amount of investment risk	393	-0.16	332	-0.16	-0.16
Q7b Culture is reason for investment risk	312	2.70	257	2.69	-0.03
Q8 Choose greater NPV project	370	0.59	305	0.59	0.01
Q8b Culture influences NPV project preference	219	0.78	189	0.81	0.82
Q10 Increases chance do something unethical	410	0.85	344	0.81	-1.47
Q12 Earnings management	401	2.67	333	2.46	-2.93
Panel C. Business Outcomes					
Q14 Firm Value	416	3.36	349	3.50	2.39
Q14 Profitability	424	3.46	350	3.39	-1.47
Q14 Quality of our financial reporting	415	2.91	348	2.86	-0.72
Q14 Creativity	422	3.46	348	3.41	-0.91
Q14 Tax aggressiveness	389	2.19	318	2.02	-2.30
Q14 How much debt we use	406	2.58	323	2.25	-4.22
Q14 Willingness to take on risky projects	421	3.21	350	3.15	-1.05
Q14 Management of downside risk	416	3.09	345	3.09	0.02
Q14 Our rate of growth	424	3.38	344	3.45	1.36
Q14 Compliance	415	3.11	341	3.11	-0.01
Q14 Productivity	418	3.51	347	3.58	1.36

Table C.6:

Corporate culture by firm size

This table provides descriptive statistics by firm size. Small firms are defined as those with less than 1000 employees while large firms are defined as those with 1000 or more employees. Panel A summarizes the value of corporate culture. Panel B summarizes the actions influenced by corporate culture. Panel C summarizes business outcomes affected by corporate culture. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B.

	Small Firms	Small Firm Means	Large Firms	Large Firm Means	T-stat on Small vs. Large Mean Difference
Panel A. The Value of Corporate Culture					
Q2 How important?	962	3.49	373	3.61	2.57
Q3 Top issue?	968	3.22	377	3.22	0.10
Q4c Improve culture increases value?	784	0.91	320	0.93	0.92
Q11 Discount for misaligned culture?	684	3.77	316	3.51	-2.19
Panel B. Actions Influenced by Corporate Culture					
Q7 Take right amount of investment risk	764	-0.15	353	-0.24	-2.14
Q7b Culture is reason for investment risk	588	2.66	272	2.78	1.56
Q8 Choose greater NPV project	696	0.61	329	0.56	-1.56
Q8b Culture influences NPV project preference	435	0.80	194	0.79	-0.46
Q10 Increases chance do something unethical	768	0.83	358	0.87	1.65
Q12 Earnings management	746	2.57	357	2.52	-0.67
Panel C. Business Outcomes					
Q14 Firm Value	761	3.40	363	3.48	1.77
Q14 Profitability	776	3.43	361	3.46	0.73
Q14 Quality of our financial reporting	754	2.87	364	3.08	3.23
Q14 Creativity	772	3.48	364	3.31	-3.47
Q14 Tax aggressiveness	697	2.09	323	2.25	2.47
Q14 How much debt we use	726	2.43	333	2.51	1.23
Q14 Willingness to take on risky projects	768	3.19	361	3.26	1.25
Q14 Management of downside risk	753	3.08	356	3.21	2.51
Q14 Our rate of growth	771	3.39	359	3.41	0.34
Q14 Compliance	756	3.08	363	3.29	3.32
Q14 Productivity	768	3.55	358	3.44	-2.51

Table C.7:

Summary statistics for noise variables

This table provides descriptive statistics for the variables used as noise controls for all survey respondents from executives at public and private North American firms. For a detailed description of each variable, see Appendix B. The survey questions are presented in Appendix A.

	Obs.	Mean	Std. dev.	Median	Percent of respondents		
<i>Noise controls</i>							
Response date	1348	Oct. 6th	12 days	Oct. 1st			
Response delay (days)	1348	14.0	13.4	12			
Job title (1=CEO, 2=CFO, 3=other)	1065	2.2	0.7	2	<u>CEO</u> 17%	<u>CFO</u> 45%	<u>Other</u> 38%
Email source (1=Duke, 2=Columbia, 3=CFO)	1334	2.0	0.9	2	<u>Duke</u> 41%	<u>Columbia</u> 14%	<u>Magazine</u> 45%
<i>Additional Q1 controls</i>							
Sentiment (-1=neg., 0=neutral, 1=pos.)	1348	0.46	0.76	1	<u>Neg</u> 16%	<u>Neutral</u> 21%	<u>Pos</u> 63%
Uninformative response	1348	0.07	0.26	0			
Number of cultural values	1348	2.46	1.43	2			
Indicates culture is changing	1348	0.06	0.23	0			
Indicates culture is mixed	1348	0.03	0.18	0			

Table C.8:

Robustness: External validation of cultural values

This table provides a robustness check by connecting our survey measures of culture to external data sources on culture. We consider external culture measures derived from crowd-sourced employee reviews on Glassdoor. We connect the cultural values extracted from the open-ended survey questions to cultural values extracted from Glassdoor reviews using natural language processing methods. Panel A includes noise (date, response delay, job title, and source of email) and Q1 controls (sentiment, uninformative response, number of cultural values, culture is changing, culture is mixed). Panel B includes noise controls, Q1 controls, number of Glassdoor review control, additional survey controls (profitability, employee turnover, CEO turnover, family firm, firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, credit rating) and industry fixed effects. Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Dependent variable = Cultural value described on survey (Q1, Q14)						
Panel A. Glassdoor comparison	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Independent variable = Cultural value extracted from Glassdoor text</i>							
Adaptability	1.78***						
	(0.64)						
Collaboration		1.95*					
		(1.07)					
Community-oriented			0.22				
			(0.23)				
Customer-oriented				-0.07			
				(0.27)			
Detail-oriented					0.48		
					(0.40)		
Integrity						0.22	
						(0.78)	
Results-oriented							0.89**
							(0.45)
Noise and question controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	173	173	173	173	173	173	173
Adjusted R-squared	47.4%	53.8%	58.5%	50.0%	45.4%	48.4%	51.6%
<hr/>							
	Dependent variable = Cultural value described on survey (Q1, Q14)						
Panel B. Glassdoor comparison	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Independent variable = Cultural value extracted from Glassdoor text</i>							
Adaptability	2.53*						
	(1.38)						
Collaboration		2.47***					
		(0.91)					
Community-oriented			-0.28				
			(0.72)				
Customer-oriented				0.17			
				(0.69)			
Detail-oriented					-0.49		
					(1.85)		
Integrity						0.85	
						(1.60)	
Results-oriented							1.07
							(1.36)
Noise, question, and number of review controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional survey controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	172	172	172	172	172	172	172
Adjusted R-squared	74.8%	81.1%	84.6%	74.4%	68.7%	74.4%	76.2%

Table C.9:
Robustness: External validation of cultural values

This table provides a robustness check by connecting our survey measures of culture to external data sources on culture. In Panel A, we connect the cultural values extracted from the open-ended survey questions to those advertised on the company websites. We link the quantity of misaligned values between the website and survey to Q4, “How closely does your current corporate culture track with your stated firm values? 4 = very closely, ..., 1 = not at all” and Q4b “Our firm’s corporate culture: 1 = Needs a substantial overhaul, ..., 4 = Is exactly where it should be.” Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

Panel A. Website misalignment comparison	Culture tracks stated values (Q4)		Culture is where it should be (Q4b)	
	(1)	(2)	(3)	(4)
Sum of misaligned values between survey and website	-0.161*** (0.036)	-0.104** (0.042)	-0.145*** (0.031)	-0.114*** (0.037)
Noise controls	No	Yes	No	Yes
Industry fixed effects	No	Yes	No	Yes
Observations	185	185	191	191
Adjusted R-squared	11.8%	41.9%	10.3%	44.1%

Table C.10:

Robustness: External validation of link to business outcomes

This table provides a robustness check by connecting our survey measures of cultural values to external data sources on financial performance. In each Panel, the explanatory variable is the survey-based measure of a cultural value extracted from the open-ended response in Q1 and Q14. The dependent variables come from a variety of external data sets including Audit Analytics, Compustat, U.S. Patent and Trademark Office, KLD, Sustainalytics, Brand Ranking, Best Places to Work, and RepRisk. Additional explanatory variables include noise controls (response date, response delay, job title, and email source) and Q1 controls (sentiment, unformateness, number of cultural values, culture is changing, culture is mixed). For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Patenting firm		R&D expenses			
Panel A. Adaptability	(1)	(2)	(3)	(4)		
Adaptability	0.09**	0.13*	0.67***	1.01**		
	(0.04)	(0.07)	(0.24)	(0.45)		
Noise and question controls	No	Yes	No	Yes		
Observations	191	191	171	171		
Adjusted R-squared	1.5%	27.4%	2.1%	27.4%		
	KLD diversity		Sustainalytics ESG		Best Place to Work	
Panel B. Community-oriented	(1)	(2)	(3)	(4)	(5)	(6)
Community-oriented	-0.43***	-0.41	2.24*	1.78	0.03	0.03
	(0.12)	(0.28)	(1.17)	(3.76)	(0.04)	(0.04)
Noise and question controls	No	Yes	No	Yes	No	Yes
Observations	151	151	70	70	191	191
Adjusted R-squared	5.6%	41.1%	2.8%	61.5%	0.6%	29.8%
	Brand rating		Restatements		KLD data security	
Panel C. Detail-oriented	(1)	(2)	(3)	(4)	(5)	(6)
Detail-oriented	15.18	23.87**	0.11**	0.18*	0.03***	0.04
	(29.9)	(11.4)	(0.04)	(0.10)	(0.01)	(0.03)
Noise and question controls	No	Yes	No	Yes	No	Yes
Observations	190	190	108	108	151	151
Adjusted R-squared	0.2%	33.0%	2.2%	46.7%	0.4%	22.5%
	Reputational risk					
Panel D. Integrity	(1)	(2)				
Integrity	0.11*	0.15				
	(0.06)	(0.19)				
Noise and question controls	No	Yes				
Observations	149	149				
Adjusted R-squared	0.7%	43.9%				
	Asset growth		Earnings meet or beat			
Panel E. Results-oriented	(1)	(2)	(3)	(4)		
Results-oriented	0.05	0.08**	0.03**	0.05***		
	(0.04)	(0.04)	(0.01)	(0.02)		
Noise and question controls	No	Yes	No	Yes		
Observations	168	168	162	162		
Adjusted R-squared	1.2%	37.2%	1.1%	43.6%		

Table C.11:

Robustness: External validation of link to financial reporting

This table connects our survey measures of culture to external data sources on financial reporting. In Panel A we relate actual earnings surprises to various survey responses. In Panel B and C we relate negative earnings surprises to various survey responses. The key explanatory variables are the importance of meeting or beating earnings (Demographic), cultural norms (Q6), and Q4b, "Our current culture: 4 = is exactly where it should be, . . . , 1 = needs a substantial overhaul." Additional explanatory variables include noise controls and question controls (Q1). Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

Dependent variable = Earnings surprise					
	Survey year		3-yr. avg.	4-yr. avg.	5-yr. avg.
	(1)	(2)	(3)	(4)	(5)
Panel A. Culture and earnings surprise					
How important is meeting or beating EPS? (Demo)	0.060 (0.039)	0.075 (0.055)	0.096*** (0.029)	0.100*** (0.036)	0.092*** (0.030)
Aggregate cultural norms (Q6)	0.073** (0.032)	0.054*** (0.017)	0.081*** (0.028)	0.058*** (0.021)	0.068*** (0.017)
Noise and question controls	No	Yes	Yes	Yes	Yes
Industry fixed effects	No	Yes	Yes	Yes	Yes
Observations	162	162	162	162	162
Adjusted R-squared	2.6%	53.4%	52.1%	53.9%	50.8%
Dependent variable = Indicator for negative surprise					
	Survey year		3-yr. avg.	4-yr. avg.	5-yr. avg.
	(1)	(2)	(3)	(4)	(5)
Panel B. Culture and negative earnings surprise					
How important is meeting or beating EPS? (Demo)	-0.049** (0.022)	-0.043** (0.017)	-0.071*** (0.021)	-0.079*** (0.024)	-0.068*** (0.025)
Aggregate cultural norms (Q6)	-0.021 (0.032)	0.018 (0.023)	-0.033* (0.018)	-0.025** (0.010)	-0.037*** (0.010)
Noise and question controls	No	Yes	Yes	Yes	Yes
Industry fixed effects	No	Yes	Yes	Yes	Yes
Observations	162	162	162	162	162
Adjusted R-squared	3.0%	52.5%	55.2%	60.2%	59.4%
Dependent variable = Indicator for negative surprise					
	Survey year		3-yr. avg.	4-yr. avg.	5-yr. avg.
	(1)	(2)	(3)	(4)	(5)
Panel C. Culture and negative earnings surprise					
How important is meeting or beating EPS? (Demo)	-0.052** (0.021)	-0.045** (0.019)	-0.068*** (0.019)	-0.077*** (0.023)	-0.065*** (0.025)
Culture is where it should be (Q4b)	-0.038 (0.032)	0.000 (0.024)	-0.037** (0.017)	-0.027* (0.016)	-0.040*** (0.015)
Noise and question controls	No	Yes	Yes	Yes	Yes
Industry fixed effects	No	Yes	Yes	Yes	Yes
Observations	162	162	162	162	162
Adjusted R-squared	4.9%	52.3%	55.7%	60.4%	60.0%

Table C.12:

External validation of survey responses for Duke and Columbia sample

This table provides a robustness tests of our main external validation tests using only the emails from the University alumni list (Duke and Columbia). In Panel A, we examine how our survey responses relate to an external culture rating derived from crowd-sourced employee reviews on Glassdoor. The key explanatory variable is Q4b, "Our current culture: 4 = is exactly where it should be, . . . , 1 = needs a substantial overhaul." In Panel B, the dependent variable is Tobin's Q and the main explanatory variable is our survey-based measure of culture from Q4b. In Panel C, we connect the cultural values extracted from the open-ended survey questions to those advertised on the company websites. We link the quantity of misaligned values between the website and survey to Q4 and Q4b. Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Glassdoor culture rating (1)	Glassdoor culture rating (2)	Glassdoor firm rating (3)	Glassdoor net promoter (4)	Glassdoor approves of CEO (5)
Panel A. Glassdoor comparison					
Culture is where it should be (Q4b)	0.295*** (0.102)	0.284*** (0.096)	0.257* (0.137)	0.224*** (0.052)	0.212** (0.089)
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Number of review controls	No	Yes	No	No	No
Limit to Duke-Columbia sample	Yes	Yes	Yes	Yes	Yes
Observations	79	79	79	79	79
Adjusted R-squared	78.2%	79.2%	77.3%	77.4%	77.6%
	Survey year (1)	2-year avg. (2)	3-year avg. (3)	4-year avg. (4)	5-year avg. (5)
Panel B. Dependent variable = Tobin's Q					
Culture is where it should be (Q4b)	0.874* (0.527)	0.937* (0.527)	0.913* (0.538)	0.843 (0.542)	0.809 (0.538)
Firm-level Compustat controls	Yes	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes	Yes
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Limit to Duke-Columbia sample	Yes	Yes	Yes	Yes	Yes
Observations	75	75	75	75	75
Adjusted R-squared	83.9%	85.9%	85.8%	85.1%	84.4%
	Culture tracks stated values (Q4)	Culture is where it should be (Q4b)			
Panel C. Website misalignment comparison					
Sum of misaligned values between survey and website	-0.138* (0.072)	-0.117* (0.064)			
Limit to Duke-Columbia sample	Yes	Yes			
Observations	89	93			
Adjusted R-squared	8.0%	6.3%			

Table C.13:

Placebo check: Cultural values and norms and unrelated business outcomes

This table provides a placebo check by connecting our survey measures of culture to external data sources on financial performance. The placebo cultural elements are ones irrelevant to that business outcome. In each Panel, the explanatory variable is the survey-based measure of cultural values (Q1, Q14) and norms (Q5). The dependent variables come from a variety of external data sets. Additional explanatory variables include noise and question controls. Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

Panel A. Placebo cultural values and norms for "adaptability"		Patenting firm		R&D expenses		
	(1)	(2)	(3)	(4)		
Integrity	-0.10	-0.14	0.21	0.49		
	(0.07)	(0.11)	(0.25)	(0.46)		
Willingness to report unethical behavior	0.01	0.01	-0.13	-0.19		
	(0.05)	(0.05)	(0.70)	(0.40)		
Noise and question controls	No	Yes	No	Yes		
Observations	191	191	171	171		
Adjusted R-squared	1.0%	26.8%	0.2%	25.3%		

Panel B. Placebo cultural values and norms for "community-oriented"		KLD diversity		Sustainalytics ESG		Best Place to Work	
	(1)	(2)	(3)	(4)	(5)	(6)	
Adaptability	0.04	0.18	-1.56	-2.53	0.03	0.07*	
	(0.16)	(0.20)	(1.17)	(2.58)	(0.03)	(0.04)	
Detail-oriented	-0.28	-0.16	-1.44	-1.35	-0.03	-0.03	
	(0.23)	(0.28)	(1.52)	(5.24)	(0.03)	(0.05)	
Noise and question controls	No	Yes	No	Yes	No	Yes	
Observations	151	151	70	70	191	191	
Adjusted R-squared	1.0%	40.1%	2.0%	62.5%	0.9%	32.1%	

Panel C. Placebo cultural values and norms for "detail-oriented"		Brand rating		Restatements		KLD data security	
	(1)	(2)	(3)	(4)	(5)	(6)	
Community-oriented	-12.91	-2.16	-0.02	0.05	0.01	0.00	
	(14.01)	(14.28)	(0.07)	(0.07)	(0.01)	(0.03)	
Results-oriented	-1.66	12.82	-0.01	0.04	0.00	0.00	
	(15.75)	(28.82)	(0.04)	(0.10)	(0.04)	(0.08)	
Noise and question controls	No	Yes	No	Yes	No	Yes	
Observations	190	190	108	108	151	151	
Adjusted R-squared	0.3%	32.9%	0.2%	45.2%	0.0%	22.0%	

Panel D. Placebo cultural values and norms for "integrity"		Reputational risk	
	(1)	(2)	
Collaboration	-0.05	-0.11	
	(0.05)	(0.11)	
Agreement about goals and values	0.02	0.05	
	(0.11)	(0.13)	
Noise and question controls	No	Yes	
Observations	149	149	
Adjusted R-squared	0.2%	43.7%	

Panel E. Placebo cultural values and norms for "results-oriented"		Asset growth		Earnings meet or beat		
	(1)	(2)	(3)	(4)		
Collaboration	0.06	0.04	0.01	-0.03		
	(0.04)	(0.05)	(0.02)	(0.03)		
Employees comfort in suggesting critiques	-0.03	-0.01	0.01	-0.01		
	(0.04)	(0.04)	(0.02)	(0.01)		
Noise and question controls	No	Yes	No	Yes		
Observations	168	168	162	162		
Adjusted R-squared	1.5%	36.0%	0.2%	42.9%		

Table C.14:

Halo effect: External validation of culture measures

This table provides a robustness check of our external validation of the hand-coded culture measures using our “halo effect” control (hypothetical Q11). In Panel A, we examine how our survey responses relate to an external culture rating derived from crowd-sourced employee reviews on Glassdoor. The key explanatory variable is Q4b, “Our current culture: 4 = is exactly where it should be, . . . , 1 = needs a substantial overhaul.” Additional explanatory variables include the number of employee reviews in the survey year, noise controls (date, response delay, job title, and source of email), and additional question controls (Q1). In Panel B, we connect the cultural values extracted from the open-ended survey questions to those advertised on the company websites. Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Glassdoor culture rating				Glassdoor firm rating	Glassdoor net promoter	Glassdoor approves of CEO
Panel A. Glassdoor comparison	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Culture is where it should be (Q4b)	0.246*** (0.069)	0.167** (0.079)	0.338*** (0.069)	0.293*** (0.078)	0.187*** (0.051)	0.103* (0.057)	0.116** (0.054)
Noise, question, and number of review controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exclude firms with five lowest Glassdoor culture ratings	No	Yes	No	No	No	No	No
Only firms with more than 50 reviews	No	No	Yes	No	No	No	No
Additional survey controls	No	No	No	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Halo specification	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	170	165	80	170	170	168	169
Adjusted R-squared	45.8%	40.7%	78.4%	75.7%	75.9%	77.2%	76.5%
	Cultural values executives describe (Q1, Q14)						
Panel B. Company website comparison	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Independent variable = Advertised cultural value</i>							
Adaptability	0.352* (0.185)						
Collaboration		0.119 (0.080)					
Community-oriented			-0.006 (0.184)				
Customer-oriented				-0.001 (0.256)			
Detail-oriented					-0.124 (0.182)		
Integrity						-0.242** (0.095)	
Results-oriented							-0.157 (0.186)
Noise and question controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional survey controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Halo specification	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	187	187	187	187	187	187	187
Adjusted R-squared	69.4%	76.6%	81.4%	72.4%	68.5%	69.3%	73.7%

Table C.15:

Halo effect: External validation of business outcomes

This table provides a robustness check of our external validation of the hand-coded culture measures using our “halo effect” control (hypothetical Q11). In Panel A and C, the dependent variable is Tobin’s Q and in Panel B, the dependent variable is Total Q (Peters and Taylor, 2017). The key explanatory variable in Panel A and B is Q4b, “Our current culture: 4 = is exactly where it should be, . . . , 1 = needs a substantial overhaul.” In Panel C, the key explanatory variables are the survey-based aggregate cultural values (Q1, Q14) and aggregate cultural norms (Q6) as well as external proxies for culture. Additional explanatory variables include aggregate formal institutions, leadership, noise controls (date, response delay, job title, and source of email), firm-level controls (firm size, number of employees, investment-to-capital, tangibility, SG&A), and additional question controls (Q1, Q4, Q4b). Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Survey year	2-year avg.	3-year avg.	4-year avg.	5-year avg.
Panel A. Dependent variable = Tobin's Q	(1)	(2)	(3)	(4)	(5)
Culture is where it should be (Q4b)	0.389** (0.186)	0.418** (0.183)	0.434** (0.180)	0.440** (0.176)	0.404** (0.171)
Firm-level Compustat controls	Yes	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes	Yes
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Halo specification	Yes	Yes	Yes	Yes	Yes
Observations	157	157	157	157	157
Adjusted R-squared	62.3%	64.2%	64.2%	63.0%	62.6%
Panel B. Dependent variable = Total Q	Survey year	2-year avg.	3-year avg.	4-year avg.	5-year avg.
	(1)	(1)	(2)	(2)	(2)
Culture is where it should be (Q4b)	0.361* (0.194)	0.445** (0.206)	0.504** (0.201)	0.487** (0.195)	0.48** (0.195)
Firm-level Compustat controls	Yes	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes	Yes
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Halo specification	Yes	Yes	Yes	Yes	Yes
Observations	145	145	146	146	148
Adjusted R-squared	76.9%	77.1%	75.5%	75.4%	73.9%
Panel C. Dependent variable = Tobin's Q	Survey year	2-year avg.	3-year avg.	4-year avg.	5-year avg.
	(1)	(1)	(2)	(2)	(2)
Aggregate cultural values (Q1, Q14)	-0.076 (0.316)	-0.038 (0.313)	0.09 (0.309)	0.167 (0.299)	0.187 (0.291)
Aggregate cultural norms (Q6)	0.496*** (0.189)	0.538*** (0.187)	0.522*** (0.184)	0.474*** (0.178)	0.434** (0.174)
Best place to work for indicator	0.041 (0.493)	-0.05 (0.488)	-0.108 (0.482)	-0.153 (0.466)	-0.154 (0.455)
Glassdoor culture rating	0.509*** (0.184)	0.460** (0.182)	0.464*** (0.180)	0.430** (0.174)	0.418** (0.170)
Cultural values advertised on website	-0.447 (0.502)	-0.330 (0.497)	-0.400 (0.491)	-0.529 (0.475)	-0.511 (0.463)
Firm-level Compustat controls	Yes	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes	Yes
Noise and question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Halo specification	Yes	Yes	Yes	Yes	Yes
Observations	146	146	146	146	146
Adjusted R-squared	68.6%	69.3%	69.1%	68.6%	68.0%

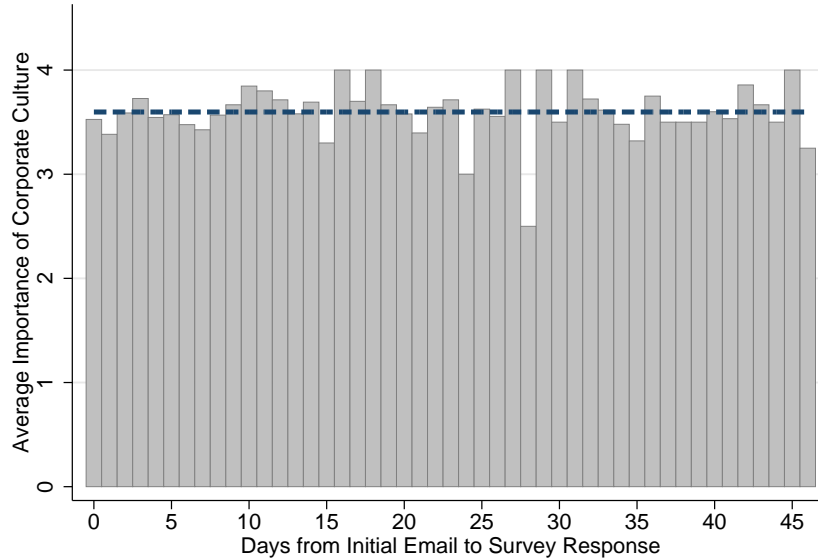
Appendix D. Additional robustness checks

In this Appendix, we include additional tables and figures that help us understand the extent to which this survey is a selected sample of respondents. We consider the extent of participation bias by comparing sub-samples: (i) regular vs. occasional CFO survey responders (Table D.1); (ii) early vs. late responders (Figure D.1); (iii) by job title, which includes CEO, CFO, and others (Figure D.2, Table D.2, Table D.3); (iv) by email source, which includes Duke, Columbia, and CFO magazine lists (Table D.4 and Table D.5); (v) by who is influential in setting the culture, which includes founders, past CEOs, current CEOs, and other (Table D.6).

Fig. D.1.

Reliability of culture measures

The plot shows a histogram of the mean response to Q2, “How important do you believe corporate culture is at your firm?” where 1 = not important, 2 = somewhat important, 3 = important, 4 = very important. The x-axis represents the delay in days from when the initial survey invitation is sent to when the survey is filled out. The dashed blue line shows the mean response across all observations. The responses are statistically indistinguishable across days. The sample consists of survey responses from executives at public and private North American firms.



Source: 1348 survey responses from executives at public and private North American firms.

Fig. D.2.

Reliability of culture measures

The plot shows a a bar graph of the four survey questions related to the value of corporate culture. Each bar represents the mean response by job title where respondents are separated into CFO respondents and non-CFO respondents. The responses are statistically indistinguishable across job title. The sample consists of survey responses from executives at public and private North American firms.

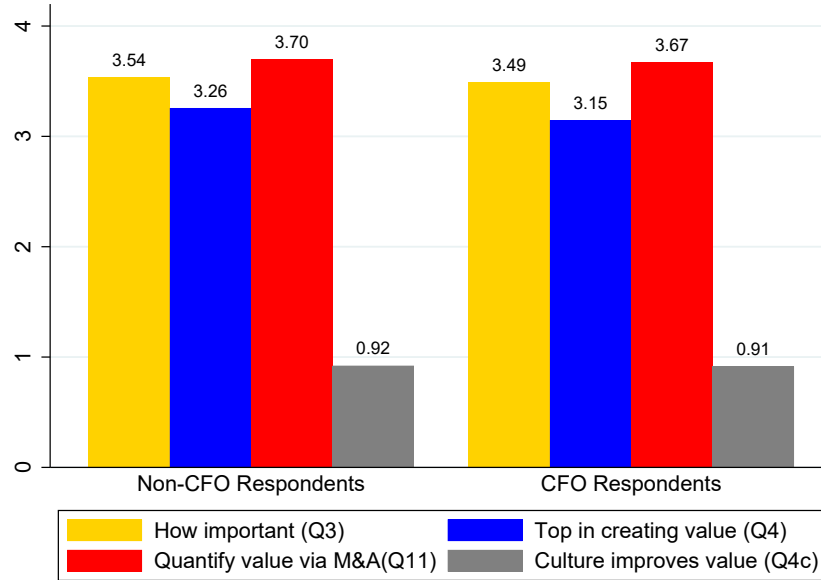


Table D.1:

Test of non-response bias: Respondents versus universe of invited firms

This table compares the demographic information for people who respond to the culture survey and the universe of firms invited to participate for which we knew demographic information (those that respond to the Duke Quarterly CFO survey). Column 1 summarizes responses from those that took the culture survey. Column 2 summarizes responses from Duke Quarterly CFO survey respondents since 2011 who we asked to take the culture survey. Industry classifications reflect those used in the Duke Quarterly CFO survey, which is less refined than that used in the culture survey. For a detailed description of each variable, see the definitions in Appendix B.

	Culture Survey Respondents	CFO Survey Respondents
Panel A. Revenue		
1 = Less than \$25 million	33%	27%
2 = \$25-\$99 million	24%	25%
3 = \$100-\$499 million	19%	24%
4 = \$500-\$999 million	7%	7%
5 = \$1-\$4.9 billion	8%	8%
6 = \$5-\$9.9 billion	3%	3%
7 = More than \$10 billion	6%	5%
Mean	2.67	2.74
T-stat on mean difference	0.72	
Panel B. Number of Employees		
1 = Fewer than 100	39%	32%
2 = 100-499	25%	32%
3 = 500-999	10%	11%
4 = 1000-2499	8%	8%
5 = 2500-4999	4%	5%
6 = 5000-9999	4%	3%
7 = More than 10,000	9%	9%
Mean	2.62	2.71
T-stat on mean difference	0.82	
Panel C. Credit Rating		
0 = No rating	21%	21%
1 = High yield	15%	17%
2 = Investment grade	65%	63%
Mean	1.44	1.42
T-stat on mean difference	-0.52	
Panel D. Profitability		
0 = No after-tax profit	15%	12%
1 = After-tax profit	85%	88%
Mean	0.85	0.88
T-stat on mean difference	1.35	
Panel E. Industry		
Communication	2%	3%
Energy	2%	6%
Finance	14%	12%
Healthcare	5%	5%
Manufacturing	23%	26%
Mining	3%	5%
Retail	12%	15%
Services	15%	14%
Technology	8%	5%
Other	16%	10%

Table D.2:

Culture measures by job title

This table provides tests of differences in mean response by job title. Panel A summarizes the corporate culture measures. Panel B summarizes the value of corporate culture. Panel C summarizes the actions influenced by corporate culture. Panel D summarizes business outcomes affected by corporate culture. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B.

	CEO N	Mean	CFO N	Mean	Other N	Mean	T-stat on CEO vs. CFO	T-stat on CEO vs. Otr.	T-stat on CFO vs. Otr.	T-stat on CFO vs. Non-CFO	Joint F-test for Mean Differences
Panel A. Cultural Measures											
Q1/Q14 Aggregate cultural values	183	0.39	474	0.23	408	0.26	-6.29	-5.24	-1.25	1.18	19.28
Q6 Aggregate cultural norms	183	0.69	474	0.49	408	0.49	-5.61	-5.65	0.00	-0.09	17.02
Q6/Q13 Aggregate formal institutions	183	0.65	474	0.44	408	0.36	-5.50	-7.06	2.35	-3.05	24.05
Q13 Leadership	183	0.92	474	0.52	408	0.46	-6.43	-7.14	1.11	-1.37	24.23
Q4 Tracks stated values	180	3.77	462	3.22	403	3.23	-7.75	-7.51	-0.09	2.09	30.68
Q4b Culture is exactly where it should be	183	3.08	474	2.67	408	2.75	-5.75	-4.61	-1.38	2.08	15.91
Panel B. The Value of Corporate Culture											
Q2 How important?	183	3.76	467	3.49	404	3.52	-4.19	-3.73	-0.45	1.00	8.64
Q3 Top issue?	182	3.63	474	3.15	408	3.19	-5.83	-5.33	-0.63	1.92	17.20
Q4c Improve culture increases value?	140	0.93	397	0.91	327	0.91	-0.53	-0.51	0.00	0.46	0.15
Q11 Discount for misaligned culture?	167	4.22	426	3.67	323	3.55	-3.74	-4.24	0.92	0.23	9.22
Panel C. Actions Influenced by Corporate Culture											
Q7 Take right amount of investment risk	171	-0.18	441	-0.11	366	-0.25	1.24	-1.31	3.16	-2.90	5.24
Q7b Culture is reason for investment risk	120	2.83	365	2.61	275	2.78	-1.95	-0.41	-1.99	2.19	2.99
Q8 Choose greater NPV project	153	0.66	412	0.63	342	0.52	-0.64	-2.91	3.08	-1.98	6.47
Q8b Culture influences NPV project preference	103	0.83	266	0.77	188	0.80	-1.07	-0.56	-0.60	1.35	0.61
Q10 Increases chance do something unethical	177	0.87	452	0.85	388	0.84	-0.66	-0.84	0.27	-0.31	0.36
Q12 Earnings management	167	2.68	448	2.56	382	2.52	-1.27	-1.74	0.64	-0.20	1.49
Panel D. Business Outcomes											
Q14 Our rate of growth	178	3.60	465	3.37	389	3.44	-3.26	-2.31	-1.36	2.01	5.49
Q14 Profitability	180	3.51	467	3.43	394	3.42	-1.29	-1.42	0.20	0.40	1.06
Q14 Productivity	173	2.95	466	2.89	388	2.97	-0.76	0.14	-1.18	1.54	0.76
Q14 How much debt we use	179	3.57	463	3.37	397	3.39	-2.95	-2.65	-0.37	1.94	4.58
Q14 Quality of our financial reporting	165	1.97	454	2.02	324	2.34	0.62	3.98	-4.51	3.35	12.66
Q14 Creativity	170	2.19	460	2.42	347	2.54	2.36	3.51	-1.62	0.95	6.07
Q14 Management of downside risk	178	3.17	463	3.16	396	3.27	-0.26	1.25	-2.01	1.99	2.12
Q14 Willingness to take on risky projects	176	3.07	464	3.06	380	3.18	-0.08	1.46	-2.02	1.95	2.26
Q14 Firm Value	180	3.39	467	3.40	387	3.42	0.21	0.40	-0.27	-0.27	0.09
Q14 Tax aggressiveness	176	3.26	467	2.99	383	3.25	-3.07	-0.19	-3.69	4.51	8.82
Q14 Compliance	174	3.54	466	3.49	391	3.52	-0.82	-0.25	-0.71	0.93	0.44

Table D.3:

Respondents by job title and firm size

This table provides the percentage of respondents by job title and firm size. Panel A summarizes when firm size is measured by number of employees and Panel B summarizes when firm size is measured by sales revenue. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B.

	Job Title		
Number of Employees	CEO	CFO	Other
1 = Fewer than 100	27%	45%	28%
2 = 100-499	10%	63%	27%
3 = 500-999	7%	52%	41%
4 = 1000-2499	13%	44%	43%
5 = 2500-4999	11%	42%	48%
6 = 5000-9999	28%	26%	45%
7 = More than 10,000	10%	23%	67%

	Job Title		
Sales Revenue	CEO	CFO	Other
1 = Less than \$25 million	29%	44%	27%
2 = \$25-\$99 million	16%	56%	28%
3 = \$100-\$499 million	7%	61%	33%
4 = \$500-\$999 million	7%	51%	42%
5 = \$1-\$4.9 billion	17%	34%	48%
6 = \$5-\$9.9 billion	21%	21%	57%
7 = More than \$10 billion	7%	20%	74%

Table D.4:

Culture measures by email source

This table provides tests of differences in mean response for the main sample of Duke CFO survey participants, Columbia alumni, and CFO magazine respondents. This table summarizes the cultural values (Q1, Q14), cultural norms (Q5, Q13), aggregate culture measures, culture in practice, and who is influential in setting the culture. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B. ***, ** and * indicate p -values from a joint F -test for mean differences of 1%, 5%, and 10%, respectively.

	Email Source		
	Duke (1)	Columbia (2)	Magazine (3)
<u>Cultural values (Q1, Q14)</u>			
Adaptability	0.22	0.31	0.19*
Collaboration	0.28	0.41	0.18***
Community-oriented	0.34	0.30	0.24**
Customer-oriented	0.20	0.12	0.19*
Detail-oriented	0.15	0.07	0.11*
Integrity	0.22	0.19	0.23
Results-oriented	0.43	0.44	0.39
<u>Cultural norms (Q6)</u>			
Agreement about goals and values	0.54	0.61	0.52
Consistency and predictability of actions	0.38	0.42	0.39
Coordination among employees	0.59	0.60	0.55
Decision-making reflects long-term	0.55	0.58	0.50
Employees comfort in suggesting critiques	0.39	0.48	0.44
New ideas develop organically	0.42	0.46	0.45
Trust among employees	0.71	0.77	0.63**
Urgency with which employees work	0.39	0.41	0.34
Willingness to report unethical behavior	0.43	0.39	0.42
<u>Aggregate cultural measures</u>			
Agg. cultural values (Q1, Q14)	0.26	0.26	0.22**
Agg. cultural norms (Q6)	0.49	0.52	0.47
<u>Culture in practice (1 = No, 4 = Yes)</u>			
Tracks stated values (Q4)	3.35	3.46	3.19***
Culture is exactly where it should be (Q4b)	2.79	2.85	2.66***
<u>Influential in setting the culture (Q5)</u>			
Current CEO	0.56	0.66	0.52**
Reputation	0.36	0.31	0.37
Founders	0.29	0.36	0.31
Internal policies and procedures	0.24	0.25	0.25
Incentive compensation	0.12	0.09	0.12
Board of Directors	0.11	0.08	0.14

Table D.5:

Business outcomes by email source

This table provides tests of differences in mean response for the main sample of Duke CFO survey participants, Columbia alumni, and CFO magazine respondents. This table summarizes formal institutions and leadership, the value of culture, actions influenced by culture, and the role of culture in business outcomes (Q14). The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B. ***, ** and * indicate p -values from a joint F -test for mean differences of 1%, 5%, and 10%, respectively.

	Email Source		
	Duke (1)	Columbia (2)	Magazine (3)
<u>Formal institutions and leadership (Q6, Q13)</u>			
Corporate governance	0.03	-0.05	-0.02
Finance function	0.03	-0.12	0.01
Hiring, firing, promotion	-0.02	0.16	-0.02
Incentive compensation	0.01	0.11	-0.04
Senior management behavior	0.07	0.18	-0.11***
<u>The value of culture</u>			
How important? (Q2)	3.55	3.69	3.46***
Top issue? (Q3)	3.26	3.44	3.13***
Improve culture increases value? (Q4c)	0.92	0.88	0.93
Discount for misaligned culture? (Q11)	3.72	3.55	3.68
Create or destroy value? (Q9)	2.08	2.00	2.01
<u>Actions influenced</u>			
Takes on the right amount of risk (Q7)	-0.20	-0.11	-0.17
Culture is reason for investment risk (Q7b)	2.78	2.65	2.62
Chooses NPV-superior project (Q8)	0.62	0.66	0.56*
Culture influences NPV project preference (Q8b)	0.80	0.82	0.80
Increases chance do something unethical (Q10)	0.86	0.82	0.84
Earnings management (Q12)	2.52	2.38	2.62**
<u>Business outcomes (Q14)</u>			
Growth rate	3.41	3.39	3.38
Profitability	3.46	3.34	3.44
Productivity	3.47	3.56	3.54
Leverage	2.51	2.13	2.46***
Quality of financial reports	2.92	2.76	3.01**
Creativity	3.39	3.60	3.42**
Management of downside risk	3.14	3.17	3.08
Willingness to take on risky projects	3.26	3.17	3.18
Firm Value	3.41	3.47	3.43
Tax aggressiveness	2.15	1.82	2.21***
Compliance	3.14	3.08	3.18

Table D.6:

Culture measures by influential factors in setting a firm's current culture

This table provides tests of differences in mean response by influential factors in setting a firm's current culture (Q5). Other factors include reputation or image in the marketplace, internal policies and procedures, hard times we experienced, changing needs of the market, non-management employees, owners, incentive compensation, board of directors, and peer firms. Panel A summarizes the corporate culture measures. Panel B summarizes the value of corporate culture. Panel C summarizes the actions influenced by corporate culture. Panel D summarizes business outcomes affected by corporate culture. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B.

	Founder & Past		Current				T-stat on Past vs.	T-stat on Past vs.	T-stat on Curr. vs.	T-stat on Curr. vs.	Joint F-test for Mean
Panel A. Cultural Measures	CEO N	Mean	CEO N	Mean	Other N	Mean	Curr.	Otr.	Otr.	Not	Differences
Q1/Q14 Aggregate cultural values	266	0.24	743	0.27	339	0.20	-3.84	3.54	-0.24	-3.54	8.37
Q6 Aggregate cultural norms	266	0.51	743	0.53	339	0.36	-6.42	4.77	0.99	-4.77	21.01
Q6/Q13 Aggregate formal institutions	266	0.36	743	0.43	339	0.31	-3.67	3.97	-0.96	-3.97	8.97
Q13 Leadership	266	0.49	743	0.54	339	0.36	-3.56	3.02	0.10	-3.02	6.80
Q4 Tracks stated values	258	3.22	729	3.37	332	3.17	-2.90	3.63	-1.37	-3.63	6.85
Q4b Culture is exactly where it should be	266	2.76	743	2.77	339	2.65	-2.16	1.59	0.38	-1.59	2.37
Panel B. The Value of Corporate Culture											
Q2 How important?	264	3.53	739	3.60	332	3.34	-4.87	4.13	0.12	-4.13	12.74
Q3 Top issue?	266	3.29	741	3.29	338	3.00	-4.61	3.02	1.22	-3.02	10.61
Q4c Improve culture increases value?	211	0.92	616	0.93	277	0.89	-2.21	1.93	0.00	-1.93	2.66
Q11 Discount for misaligned culture?	221	3.68	590	3.73	189	3.57	-1.07	0.88	-0.03	-0.88	0.62
Panel C. Actions Influenced by Corporate Culture											
Q7 Take right amount of investment risk	240	-0.22	663	-0.17	214	-0.17	0.14	0.82	-1.11	-0.82	0.63
Q7b Culture is reason for investment risk	185	2.62	514	2.79	161	2.49	-2.74	3.11	-1.10	-3.11	5.47
Q8 Choose greater NPV project	224	0.56	601	0.61	200	0.59	-0.29	1.28	-1.24	-1.28	0.98
Q8b Culture influences NPV project preference	127	0.79	385	0.82	117	0.74	-1.68	1.66	-0.39	-1.66	1.75
Q10 Increases chance do something unethical	242	0.83	667	0.84	217	0.88	1.57	-0.49	-0.92	0.49	1.38
Q12 Earnings management	237	2.59	657	2.54	209	2.56	0.11	-0.63	0.65	0.63	0.25
Panel D. Business Outcomes											
Q14 Our rate of growth	239	3.48	670	3.43	215	3.35	-1.60	0.24	1.25	-0.24	1.67
Q14 Profitability	242	3.45	674	3.46	221	3.36	-1.82	1.12	0.42	-1.12	1.66
Q14 Productivity	239	2.84	662	2.96	217	2.98	0.69	0.97	-1.82	-0.97	1.69
Q14 How much debt we use	245	3.41	673	3.43	218	3.42	-0.19	0.42	-0.32	-0.42	0.09
Q14 Quality of our financial reporting	224	2.11	602	2.11	194	2.27	2.03	-1.21	-0.47	1.21	2.05
Q14 Creativity	233	2.46	624	2.46	202	2.43	-0.40	0.24	0.10	-0.24	0.08
Q14 Management of downside risk	241	3.26	674	3.24	214	3.07	-2.96	1.50	1.03	-1.50	4.42
Q14 Willingness to take on risky projects	234	3.20	663	3.12	212	3.02	-1.97	0.18	1.68	-0.18	2.69
Q14 Firm Value	243	3.46	669	3.41	218	3.28	-2.47	0.68	1.55	-0.68	3.52
Q14 Tax aggressiveness	240	3.15	664	3.18	215	3.05	-1.61	1.32	-0.03	-1.32	1.40
Q14 Compliance	238	3.53	669	3.50	219	3.53	0.30	-0.50	0.32	0.50	0.13

Appendix E. Culture and business outcomes

In this appendix, we explore the relation between culture and business outcomes using the executive's self-reported measures exclusively. Given the rich set of questions that we asked, this approach has the advantage of being able to explore detailed responses for a large sample of 1,348 corporate executives. We realize that making statistical inferences based on within-survey analyses can be challenging for a number of reasons both conceptually and statistically. Nevertheless, we believe that highlighting potential associations is worthwhile given the economic importance of corporate culture.

We start by exploring the correlation between cultural values and norms and specific business outcomes in a univariate setting. In Tables E.1 and E.2, we consider the 11 business outcomes from Q14, which states, "To what extent does the corporate culture at your firm affect the following items." The potential responses are ordinal ranging from 1 = No effect, to 4 = Big effect. For each item, we divide the sample into a low (no or little effect) and high group (moderate or big effect) based on their response. We then report the mean value for that element of culture for each subsample as well as the statistical significance. We see meaningful variation in cultural values and norms across the business outcomes as well as intuitive variation that only the values and norms more closely related to the outcome matter.

At firms where executives indicate culture has a moderate or big effect on "creativity," the cultural value of adaptability is 0.23 compared to 0.04 for no or little effect. In contrast, at the same firms where executives indicate culture has a moderate or big effect on "creativity," the cultural value of integrity is 0.22 compared to 0.26 for no or little effect and is insignificant. Other business outcomes from Q14 are significantly associated with alternative cultural values and norms. For example, in firms where executives indicate that culture has a big effect on "being compliant," the cultural element of integrity is significantly correlated while adaptability is not. In some cases, we observe weaker cultural values for some business outcomes even when the influence of culture is high. For example, at firms where executives indicate culture has a moderate or big effect on "how much debt we use" adaptability is only 0.15

but it is 0.31 at firms with no or little effect. This suggests that the financial mystery of low leverage firms may in part be explained by a shared cultural value that emphasizes rigidity and conservatism.

Next, we extend this analysis by running multivariate regressions. We focus on “Being compliant” and “Creativity” as business outcomes. Prior studies argue integrity and trust are associated with compliance (Shleifer and Summers, 1988; Edmans, 2011; Guiso, Sapienza, and Zingales, 2015b). Panel A of Table E.3 presents results from regressing *BeingCompliant* on explanatory variables that include all of the cultural values, norms, and formal institutions, plus various control variables. Consistent with intuition and theory, we find evidence that firms with an integrity value accompanied by cultural norms that express integrity (willingness to report unethical behavior, trust among employees) have a culture positively correlated with executives perceiving their culture as being compliant.

Panel B focuses on creativity and shows correlations conditional on the same complete set of control variables. Previous research (Dessein and Santos, 2006) indicates that the creativity outcome should be tied to the adaptability value, which is what we find. The norms that are associated with creativity are employee comfort in suggesting critiques and new ideas develop organically (Bénabou, Ticchi, and Vindigni, 2015). In Column 2 of each panel, we attempt to correct for the potential error-in-variables problem that could be introduced via the halo effect. Controlling for the halo effect weakens the results.

Next, we investigate these correlations more broadly: do cultural values and norms relate to business outcomes? We use aggregate variables to address this question. Using aggregate data also helps address multicollinearity and the possibility that we failed to include some underlying values and norms. Multicollinearity can inflate variance, leading researchers to fail to reject the null hypotheses of no effect too often because the standard errors are large. We test for multicollinearity in our data in two ways. First, we analyze the variance inflation factors (VIFs) among the seven cultural values, nine cultural norms, four formal institutions, and leadership. The VIF estimates how much the variance of a coefficient is inflated because of linear dependence with other explanatory variables. Authorities differ on how high the

VIF has to be to constitute a problem, with an excess of 2.5 for key explanatory variables to an excess of 10 being considered problematic. Our average VIF is 4, and six cultural elements have VIFs greater than 10. Second, we analyze the eigenvalues in the correlation matrix of the explanatory variables. Eigenvalues close to zero indicate a problem and we have six eigenvalues less than 0.1. The condition index, which is the square root of the ratio of largest to smallest eigenvalues, is 16.9 for our data. A value above 10 indicates moderate multicollinearity problems while a value over 20 indicates a severe problem.

In Table E.4, we use OLS regressions with aggregate dependent variables that measure self-reported business outcomes broadly. The dependent variable in Column 1 measures an aggregation of all outcomes, while in Columns 2 through 4 the dependent variables separately aggregate, respectively, ethical, innovation, and productivity/value outcomes. The key explanatory variables are aggregate measures of cultural values and cultural norms. As additional explanatory variables, we include formal institutions, leadership, noise controls, demographic controls, and additional question controls.

As we report in Panel A of Table E.4, cultural norms are an important channel by which corporate culture connects to business outcomes. The coefficient estimates for aggregate cultural norms are positive and significant at the 1% level in all columns except for ethics outcomes. The economic magnitude of the point estimates are similar across all, innovation, and productivity/value outcomes. In contrast to the norms results, there is little aggregate evidence in Panel A that values independently enhance business outcomes. The statistical evidence is consistent with the theoretical prediction that having cultural values is a necessary but not sufficient condition for maximum corporate performance.

In Panel B of Table E.4, we test for complementarity between selected cultural values and the norms that express them on a day-to-day basis more explicitly by allowing for values to interact with norms. The evidence is consistent with the implication that the norms that reinforce cultural values enhance performance. The coefficient estimate on the interaction term is positive and significant at the 1% level for our aggregate “All” outcome. The coefficients on the cultural norms term also remain positive and significant at the 1% level. These findings

are consistent with the conclusion that broadly speaking, cultural values and norms have an important association with business outcomes. Moreover, the results support the theoretical argument that selecting cultural values in isolation is not as effective as when the day-to-day living of those values (that is, cultural norms) is functioning properly.

Next, we explore the channel by which these connections occur. We consider a two-step process in which 1) a company's values and norms and possibly formal institutions like compensation determine whether the firm has an effective culture, and 2) the effectiveness of the firm's culture determines whether business outcomes are positive or not.

In Panel A of Table E.5, we show that having an effective corporate culture is associated with ethics, productivity/value, and overall aggregate outcomes. In Panel B, we attempt to explain an effective corporate culture with values, norms, formal institutions, and leadership. Coefficients are standardized for comparison and suggest that enhancing leadership has an economic magnitude of about 60% of the effect of enhancing cultural norms in explaining variation in cultural effectiveness. In Table E.6, we repeat the analysis with the goal of determining which specific values and norms are associated with an effective culture.

These findings align with theory. We find that cultural values and norms tied to intrinsic motivation and expectation alignment are correlated with cultural effectiveness. Consistent with the intrinsic motivation theory by [Bénabou and Tirole \(2003\)](#), trust, coordination among employees, and collaboration are among the most important cultural values and norms. The norm of consistency and predictability of action is also significantly related to cultural effectiveness, which ties closely to theory suggesting that culture aligns expectations ([Akerlof and Kranton, 2005](#); [Van den Steen, 2010](#)). As [Kreps \(1990\)](#) first argued, “culture works in unforeseen events by giving hierarchical inferiors an idea before the event how the organization will react.”

Given that our inferences are derived from regressing survey data on survey data, we now explore out-of-sample predictive power using a 10-fold cross-validation procedure ([Efron, 2004](#)). While we again use only survey data in the analyses, the procedure rotates through 10 random partitions of the data to evaluate the stability of coefficient estimates. Our data

perform well out of sample. For the second step from effectiveness to outcomes, the mean absolute percentage error is only 12% for all outcomes, and in the first step the error is only 17%. We report these findings in Table E.7.

Next, given that we hand-code the written responses to the open-ended question 1 and question 14 into cultural values, we analyze two alternative cuts of the data. Table E.8 studies the subsample of firms that indicated that their current culture tracks stated culture. The evidence is somewhat weaker statistically, perhaps due to smaller sample size, but like the main results, documents the statistically significant role of cultural norms but lesser so for values. Table E.9 analyzes whether the culture closely tracking stated values. The results are similar. Together these results suggest that our measure of cultural effectiveness is reasonable.¹⁵

Finally, we note that we implicitly assumed the executives' answers to question 14 (which has the preamble "on this question, we'd like to learn about the effect of corporate culture") indicates a positive effect of culture. We confirm that this is a reasonable assumption by analyzing textual responses from the follow-on prompt, "Please provide a specific example of how culture affects firm value." We find only 7% of the responses describe a negative effect. We also obtain similar findings when we test the connection between cultural values and norms using survey responses that are not part of question 14: the responses to the survey questions about the value added by corporate culture. We present these findings in Table E.10.

¹⁵Also see [Appendix F](#) for a discussion of interpreting data, like that from Q14, in the context of analyzing an association between culture and business outcomes.

Table E.1:
Corporate culture and business outcomes

This table provides descriptive statistics of the values and norms that comprise corporate culture in relation to business outcomes. Q14 (which we use to measure business outcomes) states “To what extent does the corporate culture at your firm affect the following items:” and then lists 11 business outcomes. For each business outcome, we divide the sample into two subsamples based on low (no or little effect) and high (moderate or big), and we report the mean for each subsample. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B. ***, ** and * indicate *p*-values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Being compliant		Creativity		Firm value		How much debt we use		Management of downside risk	
	Low (1)	High (2)	Low (3)	High (4)	Low (5)	High (6)	Low (7)	High (8)	Low (9)	High (10)
<i>Cultural values (Q1, Q14)</i>										
Adaptability	0.22	0.21	0.04	0.23***	0.04	0.23***	0.31	0.15***	0.24	0.21
Collaboration	0.16	0.27***	0.15	0.26**	0.11	0.27***	0.31	0.21***	0.22	0.26
Community-oriented	0.24	0.30	0.13	0.31***	0.19	0.30*	0.37	0.24***	0.34	0.28
Customer-oriented	0.18	0.19	0.21	0.18	0.13	0.19*	0.22	0.17**	0.25	0.18**
Detail-oriented	0.04	0.15***	0.19	0.12*	0.07	0.13	0.14	0.12	0.10	0.13
Integrity	0.08	0.25***	0.26	0.22	0.12	0.23***	0.22	0.22	0.17	0.23*
Results-oriented	0.33	0.43**	0.35	0.42	0.30	0.42**	0.46	0.38**	0.44	0.41
<i>Cultural norms (Q6)</i>										
Agreement about goals and values	0.43	0.56***	0.41	0.55**	0.41	0.55**	0.58	0.51*	0.48	0.55
Consistency and predictability of actions	0.28	0.42***	0.27	0.40**	0.26	0.40**	0.45	0.35***	0.26	0.41***
Coordination among employees	0.55	0.58	0.44	0.59**	0.37	0.60***	0.65	0.53***	0.59	0.57
Decision-making reflects long-term	0.40	0.56***	0.36	0.55***	0.36	0.55***	0.58	0.50**	0.40	0.56***
Employees comfort in suggesting critiques	0.31	0.44***	0.16	0.45***	0.22	0.44***	0.48	0.38***	0.38	0.42
New ideas develop organically	0.42	0.44	0.13	0.47***	0.24	0.46***	0.48	0.41*	0.40	0.45
Trust among employees	0.55	0.71***	0.52	0.69***	0.50	0.70***	0.78	0.61***	0.68	0.68
Urgency with which employees work	0.33	0.38	0.13	0.40***	0.28	0.38	0.39	0.36	0.32	0.38
Willingness to report unethical behavior	0.29	0.45***	0.41	0.42	0.32	0.43**	0.46	0.39**	0.26	0.45***
<i>Aggregate cultural measures</i>										
Agg. cultural values (Q1, Q14)	0.18	0.26***	0.19	0.25**	0.14	0.25***	0.29	0.21***	0.25	0.24
Agg. cultural norms (Q6)	0.40	0.50***	0.31	0.50***	0.33	0.50***	0.54	0.45***	0.42	0.50**
<i>Culture in practice (1 = No, 4 = Yes)</i>										
Tracks stated values (Q4)	3.04	3.35***	3.13	3.31**	2.98	3.32***	3.39	3.23***	3.25	3.30
Culture is exactly where it should be (Q4b)	2.52	2.79***	2.59	2.75**	2.46	2.77***	2.83	2.68***	2.72	2.74

Table E.2:
Corporate culture and business outcomes

This table provides descriptive statistics of the values and norms that comprise corporate culture in relation to business outcomes. Q14 (which we use to measure business outcomes) states “To what extent does the corporate culture at your firm affect the following items:” and then lists 11 business outcomes. For each business outcome, we divide the sample into two subsamples based on low (no or little effect) and high (moderate or big), and we report the mean for each subsample. The sample consists of survey responses from executives at public and private North American firms. For a detailed description of each variable, see the definitions in Appendix B. ***, ** and * indicate *p*-values under the assumption of a single test of 1%, 5%, and 10%, respectively.

	Growth rate		Productivity		Profitability		Reporting quality		Tax aggressiveness		Willingness to take on risky projects	
	Low (1)	High (2)	Low (3)	High (4)	Low (5)	High (6)	Low (7)	High (8)	Low (9)	High (10)	Low (11)	High (12)
<i>Cultural values (Q1, Q14)</i>												
Adaptability	0.21	0.21	0.19	0.22	0.12	0.22*	0.21	0.22	0.27	0.16***	0.16	0.22
Collaboration	0.27	0.25	0.19	0.26	0.18	0.26	0.20	0.27*	0.30	0.20***	0.21	0.26
Community-oriented	0.30	0.29	0.28	0.29	0.20	0.30	0.29	0.29	0.36	0.22***	0.30	0.29
Customer-oriented	0.20	0.19	0.19	0.19	0.15	0.19	0.20	0.18	0.20	0.17	0.22	0.18
Detail-oriented	0.19	0.12*	0.15	0.12	0.05	0.13**	0.05	0.15***	0.14	0.12	0.12	0.13
Integrity	0.20	0.22	0.26	0.22	0.19	0.22	0.13	0.25***	0.22	0.22	0.25	0.22
Results-oriented	0.49	0.40	0.32	0.42	0.28	0.42**	0.34	0.44**	0.45	0.38*	0.45	0.41
<i>Cultural norms (Q6)</i>												
Agreement about goals and values	0.50	0.54	0.39	0.55**	0.48	0.54	0.52	0.54	0.59	0.49***	0.57	0.53
Consistency and predictability of actions	0.38	0.39	0.27	0.40**	0.33	0.40	0.34	0.41*	0.41	0.37	0.39	0.39
Coordination among employees	0.65	0.57	0.51	0.58	0.53	0.58	0.58	0.57	0.63	0.52***	0.62	0.57
Decision-making reflects long-term	0.57	0.53	0.45	0.54	0.47	0.54	0.48	0.55*	0.57	0.50*	0.49	0.54
Employees comfort in suggesting critiques	0.44	0.41	0.30	0.43*	0.27	0.43**	0.33	0.45***	0.47	0.37**	0.43	0.42
New ideas develop organically	0.43	0.44	0.30	0.45**	0.31	0.45**	0.39	0.46	0.48	0.40**	0.45	0.44
Trust among employees	0.70	0.67	0.56	0.69*	0.58	0.68	0.68	0.68	0.75	0.60***	0.71	0.67
Urgency with which employees work	0.42	0.36	0.16	0.39***	0.32	0.37	0.35	0.38	0.40	0.34*	0.35	0.37
Willingness to report unethical behavior	0.39	0.42	0.39	0.42	0.36	0.43	0.33	0.45***	0.44	0.40	0.40	0.42
<i>Aggregate cultural measures</i>												
Agg. cultural values (Q1, Q14)	0.26	0.24	0.23	0.24	0.17	0.25***	0.20	0.26***	0.28	0.21***	0.24	0.24
Agg. cultural norms (Q6)	0.50	0.48	0.37	0.49***	0.41	0.49*	0.45	0.50*	0.53	0.44***	0.49	0.48
<i>Culture in practice (1 = No, 4 = Yes)</i>												
Tracks stated values (Q4)	3.34	3.29	3.23	3.30	3.11	3.31**	3.19	3.33**	3.37	3.22***	3.27	3.29
Culture is exactly where it should be (Q4b)	2.79	2.73	2.69	2.74	2.65	2.75	2.67	2.76*	2.78	2.69*	2.75	2.74

Table E.3:

Specific values, norms, and outcomes

This table presents OLS estimates demonstrating an association between specific values and norms and company outcomes. Panel A shows an example ethics outcomes (i.e., being compliant) and Panel B shows an example innovation outcome (i.e., creativity). In Columns 1 and 2, the key explanatory variables are the displayed values and norms. Additional explanatory variables include all other values, norms, formal institutions, leadership, noise controls, and demographic controls. Column 2 includes our “halo effect” control (hypothetical Q11) and additional question controls (Q1, Q4, and Q4b). Robust standard errors clustered by industry are in parentheses under coefficient estimates. All explanatory variables are standardized, so that the coefficients can be interpreted as the conditional impact from a one-standard-deviation increase in the explanatory variable. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Dependent variable =	
	Being Compliant (Q14)	
Panel A. Example Ethics Outcome	(1)	(2)
<u>Cultural values (Q1, Q14)</u>		
Integrity	0.20*** (0.03)	0.11** (0.05)
<u>Cultural norms (Q6)</u>		
Consistency and predictability of actions	0.08*** (0.03)	0.04 (0.04)
Trust among employees	0.10* (0.06)	0.08 (0.06)
Willingness to report unethical behavior	0.08*** (0.03)	0.08** (0.03)
Other cultural values and norms	Yes	Yes
Noise and demographic controls	Yes	Yes
Industry fixed effects	Yes	Yes
Formal institution and leadership controls	No	Yes
Additional question controls	No	Yes
Halo effect specification	No	Yes
Observations	1115	937
Adjusted R-squared	22.5%	25.6%
	Dependent variable =	
	Creativity (Q14)	
Panel B. Example Innovation Outcome	(1)	(2)
<u>Cultural values (Q1, Q14)</u>		
Adaptability	0.06** (0.03)	0.03 (0.04)
<u>Cultural norms (Q6)</u>		
Employees comfort in suggesting critiques	0.11*** (0.03)	0.10** (0.04)
New ideas develop organically	0.11** (0.03)	0.14** (0.03)
Other cultural values and norms	Yes	Yes
Noise and demographic controls	Yes	Yes
Industry fixed effects	Yes	Yes
Formal institution and leadership controls	No	Yes
Additional question controls	No	Yes
Halo effect specification	No	Yes
Observations	1132	949
Adjusted R-squared	21.6%	26.5%

Table E.4:

Aggregate values, norms, and outcomes

This table presents OLS estimates connecting the values and norms that comprise corporate culture to company outcomes. Column 1 is the aggregate mean for all firm outcomes. The dependent variable in Columns 2 to 4 are, respectively, the aggregate among all ethical outcomes, innovation outcomes, and productivity/firm value outcomes. The key explanatory variables are the aggregate cultural values and cultural norms. Additional explanatory variables include noise controls (date, response delay, job title, and source of email), demographic controls (profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, and credit rating), and additional question controls (Q1, Q4, Q4b). Robust standard errors clustered by industry are in parentheses under coefficient estimates. All explanatory variables are standardized, so that the coefficients can be interpreted as the conditional impact from a one-standard-deviation increase in the explanatory variable. Panel A examines cultural values and norms in isolation while Panel B allows for an interaction. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Dependent variable = Self-reported aggregate outcome (Q14)			
	All	Ethics	Innovation	Productivity & Firm Value
Panel A. No interaction term	(1)	(2)	(3)	(4)
Aggregate cultural values (Q1, Q14)	-0.25** (0.10)	0.05 (0.14)	-0.36*** (0.11)	-0.28*** (0.06)
Aggregate cultural norms (Q6)	0.19*** (0.05)	0.07 (0.07)	0.20*** (0.03)	0.16*** (0.05)
Noise and demographic controls	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes
Additional question controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	1138	1128	1126	1129
Adjusted R-squared	20.7%	20.7%	15.3%	16.1%
	Dependent variable = Self-reported aggregate outcome (Q14)			
	All	Ethics	Innovation	Productivity & Firm Value
Panel B. Adding an interaction term	(1)	(2)	(3)	(4)
Aggregate cultural values (Q1, Q14)	-0.22** (0.10)	0.07 (0.15)	-0.35*** (0.10)	-0.25*** (0.06)
Aggregate cultural norms (Q6)	0.28*** (0.05)	0.15** (0.06)	0.26*** (0.05)	0.24*** (0.04)
Agg. cultural values x agg. cultural norms	0.28*** (0.08)	0.24*** (0.08)	0.16 (0.11)	0.20** (0.08)
Noise and demographic controls	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes
Additional question controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	1138	1128	1126	1129
Adjusted R-squared	21.6%	21.3%	15.6%	16.7%

Table E.5:

Two-step connection of corporate culture to outcomes

This table presents OLS estimates connecting an effective culture to company outcomes in Panel A. Panel B presents OLS estimates connecting cultural values, cultural norms, and formal institutions to an effective culture. In the survey, we define an effective culture as one that promotes the behaviors needed to successfully execute the firm's strategies and achieve its goals. The dependent variable in Column 1 of Panel A is the aggregate mean for all firm outcomes. The dependent variables in Columns 2 to 4 are, respectively, the aggregate among all ethical outcomes, innovation outcomes, and productivity/firm value outcomes. The key explanatory variable is "current culture is effective?" Additional explanatory variables include noise controls and demographic controls. In Panel B Columns 1 to 4, the key explanatory variable of interest is aggregate cultural values, cultural norms, formal institutions, and leadership, respectively. In Column 5, all explanatory variables are combined. Additional explanatory variables include noise controls (date, response delay, job title, and source of email), demographic controls (profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, and credit rating), and additional question controls (Q1, Q4). Robust standard errors clustered by industry are in parentheses under coefficient estimates. All explanatory variables are standardized, so that the coefficients can be interpreted as the conditional impact from a one-standard-deviation increase in the explanatory variable. For a detailed description of each variable, please see the definitions in Appendix B.

Dependent variable = Self-reported aggregate outcomes (Q14)					
	All	Ethics	Innovation	Productivity & Firm	
	(1)	(2)	(3)	(4)	
Panel A. Self-reported aggregate outcomes					
Culture is where it should be (Q4b)	0.08**	0.09***	-0.00	0.08*	
	(0.04)	(0.03)	(0.03)	(0.04)	
Noise and demographic controls	Yes	Yes	Yes	Yes	
Industry fixed effects	Yes	Yes	Yes	Yes	
Observations	1158	1148	1146	1149	
Adjusted R-squared	13.3%	15.9%	10.8%	11.2%	
Dependent variable = Our firm's corporate culture: (Q4b)					
	(1)	(2)	(3)	(4)	(5)
Panel B. Determinants of firm's corporate culture					
Aggregate cultural values (Q1, Q14)	0.28***				0.17***
	(0.05)				(0.06)
Aggregate cultural norms (Q6)		0.20***			0.14***
		(0.02)			(0.02)
Aggregate formal institutions (Q6, Q13)			0.11***		0.02
			(0.02)		(0.02)
Leadership (Q13)				0.14***	0.09***
				(0.02)	(0.02)
Noise and demographic controls	Yes	Yes	Yes	Yes	Yes
Additional question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	1310	1310	1310	1310	1310
Adjusted R-squared	58.8%	59.4%	58.9%	59.3%	60.4%
R-squared (excl. noise & demo. controls)	55.1%	54.4%	53.6%	54.0%	56.8%
R-squared (excl. all controls)	29.6%	18.2%	16.8%	23.1%	38.4%

Table E.6:

What cultural values and norms link to cultural effectiveness?

This table presents estimates connecting a firm's specific cultural values and norms to an effective culture using model selection econometric techniques. In the survey, we define an effective culture as one that promotes the behaviors needed to successfully execute the firm's strategies and achieve its goals. Column 1 presents Ridge Regression estimates (Hoerl and Kennard, 1970). Ridge Regression is like OLS but shrinks the estimated coefficients towards zero. Such a technique helps with the problem of picking out the relevant cultural values and norms from a larger set (i.e., variable selection) by pushing estimates of some coefficients to be exactly zero. Column 2 presents LASSO Regression estimates (Tibshirani, 1996). LASSO Regression is another variable selection technique. In each column, additional explanatory variables include noise controls (date, response delay, job title, and source of email), demographic controls (profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, and credit rating), and additional question controls (Q1, Q4). Bootstrapped standard errors using 100 replications are in parentheses under coefficient estimates. All explanatory variables are standardized, so that the coefficients can be interpreted as the conditional impact from a one-standard-deviation increase in the explanatory variable. We include all cultural values, norms, and formal institutions in our analysis. Ridge Regression selected four cultural variables, and LASSO Regression selected eleven cultural variables. For a detailed description of each variable, please see the definitions in Appendix B.

Dependent variable = Culture is where it should be (Q4b)	Variable Selection Approach	
	Ridge Regression (1)	LASSO Regression (2)
<u>Cultural Values (Q1, Q14)</u>		
Collaboration	0.05** (0.02)	0.04** (0.02)
<u>Cultural Norms (Q6)</u>		
New ideas develop organically	0.21*** (0.03)	0.02*** (0.01)
Urgency with which employees work	0.47*** (0.03)	0.02 (0.01)
Consistency and predictability of actions	0.03** (0.10)	0.02 (0.01)
Trust among employees	Not Selected	0.02 (0.03)
Coordination among employees	Not Selected	0.02 (0.03)
Other cultural values and norms	Yes	Yes
Noise and demographic controls	Yes	Yes
Additional question controls	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	1310	1310
Adjusted R-squared	59.5%	59.6%

Table E.7:

Robustness: Cross-fold validation of two-step connection

This table presents OLS estimates from a 10-fold cross-validation procedure connecting an effective culture to company outcomes in Panel A, and connecting cultural values, cultural norms, and formal institutions to an effective culture in Panel B. The 10-fold cross-validation procedure randomly partitions the data into 10 subsamples. Of the 10 subsamples, a single subsample is retained as the validation data for testing the model and the remaining 9 subsamples are used to train the data. This procedure is then repeated 10 times, with each subsample used exactly once as the validation data. The reported statistics are an average of the 10 tests of the model. The mean absolute percentage error measures how close the model predicted values are to the actual outcomes as a percentage deviation from the actual outcome. The dependent variable in Panel A, Column 1 is the aggregate mean for all firm outcomes. The dependent variables in Columns 2 to 4 are, respectively, the aggregate among all ethical outcomes, innovation outcomes, and productivity/firm value outcomes. The key explanatory variable in Panel A is “current culture is effective?” Additional explanatory variables include noise controls and demographic controls. In Panel B Columns 1 to 4, the key explanatory variable is aggregate cultural values, cultural norms, formal institutions, and leadership, respectively. Additional explanatory variables include noise controls (date, response delay, job title, and source of email), demographic controls (profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, and credit rating), and additional question controls (Q1, Q4). For a detailed description of each variable, please see the definitions in Appendix B.

Dependent variable = Self-reported aggregate outcomes (Q14)					
	All	Ethics	Innovation	Productivity & Firm Value	
Panel A. Culture and outcomes	(1)	(2)	(3)	(4)	
Culture is where it should be (Q4b)	0.08** (0.04)	0.09** (0.04)	0.00 (0.04)	0.08** (0.04)	
Cross-validation: Mean Absolute Percentage Error	12%	23%	16%	13%	
Noise and demographic controls	Yes	Yes	Yes	Yes	
Industry fixed effects	Yes	Yes	Yes	Yes	
Observations	1158	1148	1146	1149	
Adjusted R-squared	13.3%	15.9%	10.8%	11.2%	
Dependent variable = Culture is where it should be (Q4b)					
Panel B. Determinants of an effective culture	(1)	(2)	(3)	(4)	(5)
Aggregate cultural values (Q1, Q14)	0.20*** (0.07)				0.18** (0.07)
Aggregate cultural norms (Q6)		0.19*** (0.03)			0.13*** (0.04)
Aggregate formal institutions (Q6, Q13)			0.13*** (0.02)		0.01 (0.03)
Leadership (Q13)				0.14*** (0.02)	0.10*** (0.03)
Cross-validation: Mean Absolute Percentage Error	17%	17%	17%	17%	21%
Noise and demographic controls	Yes	Yes	Yes	Yes	Yes
Additional question controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	1310	1310	1310	1310	1310
Adjusted R-squared	58.1%	59.1%	59.0%	59.7%	59.7%

Table E.8:

Robustness: Subsample of firms that track stated values

This table presents OLS estimates connecting the values and norms that comprise corporate culture to company outcomes. Instead of using the full sample of firms, we only use firms that indicate in Q4 that they very closely track their stated values and in Q4b say that their culture is either exactly where it should be or close to where it should be. The dependent variable in Column 1 is the aggregate mean for all firm outcomes. The dependent variable in Columns 2 to 4 are, respectively, the aggregate among all ethical outcomes, innovation outcomes, and productivity/firm value outcomes. The key explanatory variables are the aggregate cultural values and cultural norms. Additional explanatory variables include noise controls (date, response delay, job title, and source of email), demographic controls (profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, and credit rating), and additional question controls (Q1 and Q4b). Standard errors that are robust to heteroskedasticity are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Dependent variable = Self-reported aggregate outcomes (Q14)			
	All	Ethics	Innovation	Productivity & Firm Value
	(1)	(2)	(3)	(4)
Aggregate cultural values (Q1, Q14)	-0.28 (0.27)	0.10 (0.32)	-0.53* (0.29)	-0.10 (0.14)
Aggregate cultural norms (Q6)	0.40*** (0.10)	0.13 (0.09)	0.41** (0.14)	0.39** (0.14)
Noise and demographic controls	Yes	Yes	Yes	Yes
Formal institution controls	Yes	Yes	Yes	Yes
Additional question controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Obs. (Sample limited to firms that very closely track stated values (Q4) and have a culture that is at least close to where it should be (Q4b))	575	570	572	573
Adjusted R-squared	34.7%	34.5%	25.8%	29.5%

Table E.9:

Robustness: Alternative definitions of cultural values

This table presents OLS estimates connecting cultural values to company outcomes. The dependent variable in column 1 is the aggregate mean for all firm outcomes. The dependent variable in Columns 2 to 4 are, respectively, the aggregate among all ethical outcomes, innovation outcomes, and productivity/firm value outcomes. Instead of using aggregate cultural values as the key explanatory variable, we examine the responses to question Q4 “how closely does your current corporate culture track with your stated firm values.” Additional explanatory variables include noise controls (date, response delay, job title, and source of email) and demographic controls (profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, and credit rating). Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Dependent variable = Self-reported aggregate outcomes (Q14)			
	All	Ethics	Innovation	Productivity & Firm Value
Panel A. Alternative culture measure	(1)	(2)	(3)	(4)
Current culture tracks stated values? (Q4)	0.06** (0.03)	0.07** (0.03)	-0.01 (0.03)	0.02 (0.02)
Noise and demographic controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	1138	1128	1126	1129
Adjusted R-squared	13.6%	16.0%	11.1%	11.6%

Table E.10:

Robustness: Internal validation of outcomes

This table provides a robustness check of our OLS estimates connecting the values and norms that comprise corporate culture to firm outcomes. Instead of using the items in Q14 as our outcome variables, we examine the responses to our direct questions about the “value of corporate culture.” The dependent variables are, respectively, Q2, Q3, Q4c, with the mean response to those three questions standardized to have the same scale. The key explanatory variables are the aggregate cultural values and cultural norms. Additional explanatory variables include noise controls (date, response delay, job title, and source of email), demographic controls (profitability, employee turnover, CEO turnover, family firm, ownership (public vs. private), firm location, CEO age, CEO tenure, CEO incentive compensation, revenue, number of employees, industry competitiveness, and credit rating), and additional question controls (Q1, Q4, Q4b). Robust standard errors clustered by industry are in parentheses under coefficient estimates. For a detailed description of each variable, please see the definitions in Appendix B. ***, ** and * indicate p -values for a single test of 1%, 5%, and 10%, respectively.

	Dependent variable = Other survey-based measures of the value-added from culture			
	Q2	Q3	Q4c	Avg. of survey-based questions
Panel A. Alternative value-added measures	(1)	(2)	(3)	(4)
Aggregate cultural values (Q1, Q14)	-0.22* (0.12)	-0.07 (0.08)	-0.04 (0.10)	-0.14** (0.05)
Aggregate cultural norms (Q6)	0.13** (0.04)	0.22*** (0.06)	0.00 (0.05)	0.13*** (0.04)
Noise and demographic controls	Yes	Yes	Yes	Yes
Formal institution and leadership controls	Yes	Yes	Yes	Yes
Additional question controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	1297	1307	1075	1310
Adjusted R-squared	29.0%	40.1%	11.4%	34.4%

Appendix F. Culture and Firm Value

Given that the preamble to Q14 (which we use to measure business outcomes) states “on this question, we’d like to learn about the effect of corporate culture,” our respondents may be telling us about the slope between outcomes and culture rather than the outcome level. This appendix assesses what can and cannot be learned from analyzing these data. We use firm value as an example of a business outcome but the results generalize across responses: “Does culture affect firm value?” Let V represent value, C represent culture, and β represent the effect of culture on expected firm value. Assume this conditional expectation takes the standard linear form:

$$E[V|C] = C\beta \tag{F.1}$$

We are interested in the null hypothesis:

H_0 : Culture does not affect firm value, i.e. $E[V|C] = 0 \Leftrightarrow \beta = 0$.

The standard test for this null hypothesis would be observing data vectors V and C for many firms, and solving for β as the least squares estimator for the regression:

$$V = E[V|C] + \epsilon = C\beta + \epsilon \tag{F.2}$$

where the least squares estimator of β is given by $\beta^{OLS} = (C'C)^{-1}C'V$. And we can use the mean ($E[\beta^{OLS}|C] = \beta$) and variance ($Var[\beta^{OLS}|C] = (C'C)^{-1}Var(\epsilon^{OLS})$ where $\epsilon^{OLS} = V - C\beta^{OLS}$ are the regression residuals) of this estimator to test the null hypothesis that the true β is equal to zero. Under the standard identification condition $E[\epsilon|C] = 0$, then $E[V|C] = 0 \Leftrightarrow \beta = 0$.

In our case, we do not have data on firm value V , but we have data from the question “To what extent does the culture at your firm affect firm value?” to test whether the effect β is nonzero. The potential responses are: “0 = No effect,” “1 = Little effect,” “2 = Moderate effect,” and “3 = Big effect.” There are two ways we can use this:

1. First, we can use it directly. We can create an indicator variable representing a selection other than “0 = No effect.” That is, we have data of the indicator $\mathbf{1}_{\{\beta \neq 0\}}$. Let $\beta := \alpha \mathbf{1}_{\{\beta \neq 0\}}$ where $\alpha \neq 0$ is a (constant) scale of β .¹⁶ Then it is clear that $\beta = 0 \Leftrightarrow \mathbf{1}_{\{\beta \neq 0\}} = 0$. So we can test the original null hypothesis directly by testing the equivalent null hypothesis:

H_0 : Culture does not affect firm value, i.e. $\mathbf{1}_{\{\beta \neq 0\}} = 0$.

This test can be done directly with two pieces of data, using the mean ($E[\mathbf{1}_{\{\beta \neq 0\}}]$) and variance ($Var[\mathbf{1}_{\{\beta \neq 0\}}]$). The results of the direct test are included below. The direct tests reject the null hypotheses that culture has no effect on business outcomes at a significance level of 1% for all business outcomes.

Direct Test of $H_0: \beta = 0$	$\mathbf{1}_{\{\beta \neq 0\}}$
Being Compliant	0.92*** (0.01)
Creativity	0.98*** (0.00)
Firm Value	0.97*** (0.00)
How much debt we use	0.80*** (0.01)
Management of downside risk	0.96*** (0.01)
Our rate of growth	0.98*** (0.00)
Productivity	0.99*** (0.00)
Profitability	0.99*** (0.00)
Quality of our financial reporting	0.91*** (0.01)
Tax aggressiveness	0.76*** (0.01)
Willingness to take on risky projects	0.96*** (0.01)

2. Second, we could extend the idea above to the full range of survey values and make inferences that incorporate additional data and controls for noise, as we do in the body of the

¹⁶That α is nonzero is without loss of generality; the functional form here and the linear form above are not. This proof generalizes to other reasonable functional forms, but for simplicity the setup here seems sufficient.

paper. One reason to do this would be to determine whether the null hypothesis holds after a survey respondent's perception of their own culture or other observable explanatory variables have been accounted for. To understand how to interpret such tests, consider a proof of unbiasedness for an OLS estimator under the standard identification condition $E[\epsilon|C] = 0$. We have $E[\hat{\beta}] = E[(C'C)^{-1}C'V] = (C'C)^{-1}C'E[V] = (C'C)^{-1}C'C\beta = \beta$. If in our case, we have $E[V] = C\theta$ rather than $E[V] = C\beta$, when $\theta = \beta$, tests of the original null hypothesis go through exactly. If $\theta = \alpha\beta$ where $\alpha \neq 0$ is a (constant) scale of β , then $E[V] = C\alpha\beta$ and $E[\hat{\beta}] = \alpha\beta$. Again the original null hypothesis can be tested. In this case, however, alternative hypotheses cannot be tested because respondents did not report a sign for the effect. For example, $[H_a:]$ Culture positively affects firm value, (i.e. $E[V|C] > 0$ is not testable.) Hence, the appropriate interpretation of the conditional tests is that they reject the null hypotheses that culture has no effect on business outcomes.