

**Antecedents to financial statement misreporting:
The influence of organizational business strategy, ethical culture and climate**

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Abstract: Using organizational theory, this research study examines whether a firm's business strategy influences the ethical culture and climate within the organization, and thus explains *why* a firm's business strategy may ultimately contribute toward an increased risk of financial misreporting. This study develops from recent research which finds that companies following an innovative, risk-oriented Prospector business strategy are significantly more likely to experience financial reporting irregularities, despite increased audit effort levels (Bentley, Omer, and Sharp 2011). Using a large-scale research survey, I find two subset groups of Prospector firms where a smaller (larger) group is significantly associated with a negative (positive) culture and climate, which offers insights into *why* Prospectors continue to experience irregularities despite auditors' efforts. Results suggest auditors may not be able to distinguish between the two sets of Prospectors and thus may direct higher audit efforts too generally at Prospector firms rather than at the smaller set of firms with negative cultures and climates—i.e., firms more prone to rationalizing unethical behavior. I also find that firms pursuing a second type of strategy, a transitory Reactor strategy, are consistently associated with a negative ethical culture and climate. I find evidence to suggest that companies with less (more) ethical climates are associated with an increased (reduced) risk of financial misreporting while controlling for incentive and opportunity factors. I continue to find evidence that companies following a Prospector business strategy are associated with greater risks of misreporting (confirming Bentley et al. 2011). Altogether, my findings suggest several antecedents for firms experiencing greater risk of financial statement misreporting and provide evidence regarding the third leg of the auditing fraud triangle (rationalization).

Keywords: business strategy; financial reporting irregularities; organizational ethical climate; organizational ethical culture

JEL Classifications: D21, L21, L22, M14, M40

Data Availability: Proprietary survey and archival data except where noted.

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1. Introduction

This research study examines whether a firm's organizational business strategy influences its ethical culture and climate, thus explaining *why* a firm's business strategy may ultimately contribute toward an increased risk of financial misreporting. Business strategy defines how a company competes within its industry (Hambrick 1983). Organizational culture refers to a pattern of shared beliefs and expectations within an organization and is long-term in nature while climate refers to attitudes or perceptions within an organization and is relatively short-term and transitory in nature (Schwartz and Davis 1981; Treviño, Butterfield, and McCabe 1998). The risk of financial statement misreporting refers to the likelihood that financial statement information contains false or misleading information. I develop and test a conceptual model linking organizational business strategy to the risk of financial statement misreporting based on Cohen's 1995 model for understanding how criminal business practices arise in organizations. I adapt Cohen's model to incorporate the fraud triangle theory (Cressey 1953) used by Statement on Auditing Standards No. 99 (*SAS No. 99*) (American Institute of Certified Public Accountants [AICPA] 2002).

Using Miles and Snow's (1978, 2003) organizational theory, recent research studies have linked firms following certain business strategies to aggressive financial reporting behavior (Bentley, Omer, and Sharp 2011; Higgins, Omer, and Phillips 2011). Specifically, companies following an innovative, risk-oriented Prospector strategy are more likely both to experience financial reporting irregularities, despite increased audit effort levels (Bentley et al. 2011) and to be more tax aggressive (Higgins et al. 2011). The current study seeks to determine whether the choice of business strategy is associated with the development of unethical organizational cultures and climates within organizations. I expect to provide some insight into *why* a company's business strategy may ultimately contribute toward an increased risk of financial misreporting. This study is motivated by Zahra, Priem, and Rasheed's 2005 concern that

“accounting research, by and large, has focused on identifying potential indicators or ‘red flags’ rather than establishing direct causes or antecedents [of financial statement misreporting]” (813).

This study is also motivated by Hogan et al.’s 2008 call for more research in analyzing *SAS No. 99*’s third fraud risk factor: the attitudes of a company’s directors/managers/employees toward financial reporting, and their ability to rationalize fraudulent behavior (i.e., “attitudes/rationalizations”). Despite the lack of evidence in academic research (Hogan et al. 2008), anecdotal evidence suggests that management’s attitudes and rationalization or “tone at the top” is of primary importance in establishing and maintaining an effective control environment (Committee of Sponsoring Organizations of the Treadway Commission (COSO) 1999; Hermanson, Ivancevich, and Ivancevich 2008). Results from PricewaterhouseCoopers’ (2009, 13) global fraud survey emphasize the importance of “tone at the top” when they suggest “fundamental to the fight against fraud is the attitude and ethical stance demonstrated by those at the top [and] if organizations want to get the ‘tone at the top’ right, senior executives need to be better informed about the fraud risks they are facing”.

An organization’s ethical climate may provide insight into management’s attitudes toward financial reporting (i.e., “tone at the top”) because ethical climate captures the shared perceptions or *collective attitudes* of individuals within the organization (James, James, and Ashe 1990; Kopelman, Brief, and Guzzo 1990) regarding ethical policies and may be the vehicle through which fraudulent behavior is rationalized (as implied by Cohen’s 1995 framework). I use ethical climate as a proxy for *SAS No. 99*’s third fraud risk factor (*attitudes/rationalizations*) and examine whether ethical climate and culture mediate the relationship between business strategy and the risk of material financial misstatement while controlling for a firm’s incentives and opportunities to misreport. Using ethical climate as a proxy for management’s tone toward financial reporting appears reasonable because risk factors reflective of *SAS No. 99*’s third leg of the fraud triangle include “ineffective communication, implementation, support, or enforcement of the entity’s values or ethical standards by management or the communication of inappropriate values or ethical standards” (AICPA 2002, AU §316.85). Furthermore, the ethical climate literature consistently finds evidence that the ethical philosophies and value systems perpetuated by

management significantly impact organizational behavior (refer to Martin and Cullen's 2006 meta-analysis), and a few studies find that the ethical climate or management's tone specifically impacts financial reporting decisions (e.g., D'Aquila 2003; Murphy, Free, and Branson 2011).

Drawing from prior organizational theory (e.g., Miles and Snow 1978, 1988; Victor and Cullen 1987, 1988; Joyce and Slocum 1990), I hypothesize that firms following two types of business strategies (Prospectors and Reactors) are at greater risk of developing negative ethical cultures and ethical climates, which are in turn linked with unethical organizational behavior (e.g., Treviño et al. 1998; Martin and Cullen 2006). I use surveys to collect information on organizational business strategies, ethical cultures and climates from a broad cross-section of companies. I first analyze the relationship between each of Miles and Snow's (1978, 2003) four business strategies (Prospectors, Analyzers, Defenders, and Reactors) and the types of ethical cultures and climates evident in those organizations. My findings broadly suggest that firms' business strategies are associated with the evolution of ethical cultures and climates. Further analysis shows that the relationship between a firm's strategy and its ethical climate is directly mediated by the firm's ethical culture.

I find that firms following a Prospector business strategy generate different ethical cultures and climates. A relatively small set of Prospector firms develops an unethical culture and climate (consistent with theoretical expectations) while a larger set of Prospector firms develops a positive ethical culture and climate. This result provides insight into *why* Bentley et al. 2011 find that Prospectors continue to experience financial irregularities despite the increased auditor effort that tends to be associated with these higher risk firms. While auditors may be able to distinguish business strategies and the differences in their risks as suggested by Bentley et al. 2011, auditors may *not* be able to distinguish between Prospectors with different types of ethical cultures and climates. Thus, the increase in audit effort directed at Prospector clients may be too generally applied rather than directed at the set of Prospectors with negative cultures and climates—i.e., firms more prone to rationalizing unethical behavior. Comparatively, I find that the smaller set of unethical Prospectors have lower levels of employee job satisfaction and organizational commitment, suggesting that auditors may need to pay particular attention

to Prospector clients with these attributes. I also find that firms pursuing a transitory Reactor strategy are associated with negative ethical cultures and climates. Thus, I provide evidence of a factor that may help explain why the Reactor strategy is not considered viable in the long-term (Miles and Snow 1978, 2003).

Using the relationship between a firm's business strategy and its ethical climate and culture established from my survey data, I investigate, for a subset of public companies, the relation between a firm's business strategy, ethical climate and culture, and the risk of financial misreporting. I use a risk measure developed by Audit Integrity (Accounting and Governance Risk) that represents the likelihood that financial statements contain false or misleading information. I provide evidence linking firms with negative (positive) ethical climates to increased (reduced) risks of financial misreporting, while controlling for firms' incentives and opportunities to misreport. Thus, ethical climate may be an important factor in the rationalization aspect of the fraud triangle and likely provides incremental information beyond the incentive and opportunity aspects. I continue to find evidence that Prospector firms have higher risks of financial misreporting, consistent with Bentley et al.'s 2011 results. Finally, in sensitivity tests I find evidence that validates the Bentley et al. 2011 archival strategy measure classifications of business strategy.

This study makes three contributions to both the accounting and management literatures. First, although theory predicts an association between organizational strategies and ethical cultures and climates, there is little empirical research to support these predictions. My study provides empirical evidence linking specific strategies to certain ethical culture and climate dimensions. Second, using a combination of survey and external archival measures, I provide insight into *why* recent research (i.e., Bentley et al. 2011; Higgins et al. 2011) finds a significant association between certain business strategies and aggressive reporting behavior. Specifically, I find that certain business strategies appear to cultivate unethical cultures and climates. Finally, I provide some evidence that companies with less ethical climates (i.e., a proxy for the third fraud risk factor under SAS No. 99) are more prone to financial misreporting while companies with stronger ethical climates are less prone to financial misreporting. Altogether, my study provides empirical support for a theoretical framework identifying *why* business

strategy is an underlying antecedent for financial statement misreporting by linking business strategy to an organization's ethical culture and climate (a proxy for the third and final risk factor under *SAS No. 99*).

The remainder of this paper is organized as follows. Section 2 develops my theoretical framework and hypotheses. Section 3 describes my model and measures. Section 4 describes my data and methodology. Section 5 describes my empirical results while section 6 provides additional analysis. Section 7 provides my concluding remarks.

2. Theory and Hypothesis Development

Conceptual Framework

Figure 1 provides a theoretical framework linking organizational business strategy, ethical culture, ethical climate, and the risk of deviant organizational behavior. This framework is based on Cohen's 1995 model for understanding how criminal business practices arise in organizations and has been adapted to incorporate the fraud triangle theory (Cressey 1953) used by *SAS No. 99* (AICPA 2002). Cohen's 1995 model is rooted in Merton's sociological anomie theory dating from 1938, which emphasizes that social structures are important determinants in explaining non-conforming behavior.¹

Cohen 1995 applies Merton's theory to business organizations and outlines the following framework: social values influence management strategy, which influences organizational culture. Organizational culture then influences both the ethical climate and opportunity structure where the combination of a negative ethical climate and an opportunity structure results in deviant business practices. For example, the combination of a negative ethical climate, which focuses on advancing the organization's goals regardless of the consequences, with employees' perception that organization's goals can only be met using illegitimate means is likely to result in criminal business practices (Cohen 1995). In

¹ Although other theorists argue that criminal motivations are due to individual biological characteristics, Cohen provides a counterargument discussion. For instance, strong empirical evidence suggests that criminal behaviors are more prevalent when individuals feel frustrated within the social system; thus in an effort to predict criminal activity, "it is certainly defensible to measure the degree to which individuals feel frustrated and disillusioned, regardless of which other variables one may also choose to assess" (Cohen 1995, 193). Furthermore, Cohen argues that since "individual *institutions* have distinct cultural values, norms, and beliefs agreed upon by members to... [where] typically, employees who disagree with management values, or who do not 'fit in' to the culture ultimately leave the firm...information about an organization's value system *can* be extremely useful in predicting employee behavior" (193). Refer to Cohen 1995 for a complete discussion.

addition, a negative ethical climate can trigger a psychological response called “anomie” through which deviant behavior is more likely to occur. Anomie describes a state where an individual experiences a sense of “futility, alienation, powerlessness, and mistrust of the institution [which] are predicted to occur when individuals perceive the social system to be inconsistent and morally unstable, operating outside the framework of legitimate conduct” (Cohen 1995, 199). Because a negative ethical climate directly triggers a psychological anomie response, Cohen’s framework appears to suggest that a negative ethical climate provides a mechanism through which deviant behavior can be rationalized.²

Cohen’s model appears to provide insight into antecedents of *SAS No. 99*’s fraud risk framework (AICPA 2002), which collectively form the fraud triangle (Cressey 1953). One can infer from Cohen’s model that the incentive, opportunity, and rationalization mechanisms necessary for fraudulent behavior to occur are ultimately caused by an organization’s strategy. In Figure 1, these three fraud risk factors are portrayed as antecedents directly influencing organizational behavior, consistent with *SAS No. 99* (AICPA 2002). Recent research by Bentley et al. 2011 uses organizational theory to link organizational business strategies to incentive and opportunity fraud risk factors. This study attempts to directly link organizational business strategies to the third and final fraud risk factor (*attitudes/rationalizations*), thus addressing Hogan et al.’s 2008 call for more research in this area. I specifically examine whether ethical climate, serving as a proxy for *attitudes/rationalizations*, mediates the relationship between business strategies and the risk of financial misreporting (as shown by the dotted arrows in Figure 1). I also consider that organizational ethical culture may serve as an additional mediator in this relationship as suggested by prior research.

In the following subsections, I summarize the prior research that supports the individual linkages in Cohen’s 1995 framework (as referenced in Figure 1) and then use this framework to develop my specific hypotheses.

² Cohen 1995 describes anomie as a state of “disillusionment”, “normlessness” or “powerlessness”. Disillusionment or detachment from the organization “reduces the likelihood of making prosocial moral judgments [where] an inability to assume the stakeholder’s point of view is often a critical factor in many business decisions with profoundly damaging consequences” (Cohen 1995, 190). Further, a sense of powerlessness (i.e., a perception that superiors cannot be challenged) is often linked to “crimes of obedience” (Cohen 1995, 191).

[Insert Figure 1 here]

Effects of business strategy on organizational culture and climate

Prior organizational research (e.g., Schwartz and Davis 1981; Kopelman et al. 1990; Kotter and Heskett 1992) suggests that organizational culture emerges directly from management strategy and that organizational climate then emerges from culture, supporting Cohen's 1995 model which shows that a firm's culture serves as a mediating variable between its strategy and climate (shown as linkages 2 and 6 in Figure 1).³ Culture is concerned with "a shared system of beliefs, expectations, and meanings" (Mirvis, and Sales 1990, 348) and is "long-term and strategic" (Schwartz and Davis 1981, 33) while climate "reflects individual perceptions of the organization" (Rousseau 1990, 159) and is "transitory, tactical, and manageable over [the] relatively short term" (Schwartz and Davis 1981, 33).⁴ Treviño et al. 1998 present a metaphor for distinguishing between climate and culture:

The term 'climate' suggests meteorological climate and qualities such as temperature, humidity, precipitation, wind, and other atmospheric conditions that can affect individuals (e.g., feelings)... In this metaphorical sense, ethical climate may characterize organizations in terms of broad normative characteristics and qualities that tell people what kind of organization this is— essentially what the organization values...[and so] is likely to be associated with attitudes.... In contrast, the notion of 'culture' evokes notions of rules, codes, rewards, leadership, rituals.... [and] characterizes the organization in terms of formal and informal control systems (e.g., rules, reward systems, and norms)... (453).

Although organizational theory suggests that business strategy directly influences culture and culture then influences climate, business strategies ultimately influence the types of *climates* that develop

³ Business strategy remains consistent for companies over time because of the development of "certain internal consistencies...[which] tend to perpetuate the strategies" (Hambrick 1983, 7). Companies are reluctant to change their strategies because the significant resources "required to develop the distinctive competencies, technologies, structures, and management processes needed to pursue a particular strategy...[therefore] when faced with external change or pressure, [companies] tend to *adjust* rather than *change* their strategies" (Snow and Hambrick 1980, 529).

⁴ Refer to Reichers and Schneider 1990 for an overview of how culture and climate evolve as two separate constructs.

because the “strategic context imposes a variety of choices and constraints on structure, processes, and control systems within organizations [where] the resulting structural differences across organizations...are hypothesized to yield collective climates with differing attributes in terms of consistency, consensus, and congruity” (Joyce and Slocum 1990, 145). Theoretically, Joyce and Slocum (1990) link each of the business strategies based on Miles and Snow’s typology (Prospectors, Defenders, Analyzers, and Reactors) to specific organizational climate attributes (e.g., consensus, consistency and congruity). For instance, firms pursuing an efficiency-oriented Defender strategy (which strives for cost or quality leadership in a niche market), require the formation of a hierarchical, centralized decision-making organizational structure to achieve their strategic objectives (Miles and Snow 1978, 2003). Because Defenders’ centralized/ bureaucratic organizational structure promotes adherence to the consistent application of rules and procedures over their heavily mechanized and routinized processes, organizational climate perceptions are expected to be highly consistent and collective where employees encounter the same “reality” within the organization (Joyce and Slocum 1990). The founders of ethical climate theory, Victor and Cullen (1987, 1988), make similar predictions by suggesting that traditionally bureaucratic, centralized organizations promote strong adherence to rules, laws and codes which fosters a *principle*-based ethical climate.

Conversely, firms pursuing an innovative Prospector strategy (which strives for innovation in numerous product-market orientations), typically utilize decentralized decision-making in order to encourage risk-taking and creativity (Miles and Snow 1978, 2003). Prospectors promote innovation through the use of multiple performance-based reward structures which, when combined with the failure to enforce adherence to any of these systems, results in low climate consistency and consensus where employees experience different ‘realities’ within the same company. Thus, Joyce and Slocum 1990 predict that Prospectors perpetuate an individualistic climate. Victor and Cullen 1988 make similar predictions by suggesting that firms with an entrepreneurial, innovative focus produce an individualistic, *egoism*-based ethical climate because “self-interested behavior is the social norm” (120).

Joyce and Slocum 1990 predict that companies pursuing the hybrid Analyzer strategy (firms exhibiting characteristics of both Prospectors and Defenders—i.e., a mix of innovation and efficiency), promote organizational climates with a moderate degree of consensus and internal consistency. Because most organizational attributes in Analyzer firms are moderate (e.g., moderate formalization and moderate performance-based reward structures), Joyce and Slocum 1990 suggest that ethical climate tendencies will also be moderate. Therefore, I expect that since Analyzers appear neither as likely as Prospectors to display an individualistic, *egoism*-based ethical climate nor are as likely as Defenders to display a rule-oriented *principle*-based ethical climate, Analyzers likely produce a *benevolence*-based climate, which exists between the two climate extremes (egoism and principle). Benevolence climates emphasize making decisions in relation to a broad group of stakeholders (e.g., employees, customers and the community at large) (Victor and Cullen 1987, 1988).⁵

Finally, companies employing the Reactor strategy (which only *respond* to environmental change and do not follow any internally consistent strategy) are expected to exhibit organizational climates with “low degrees of consensus, high inconsistency, and a lack of congruity” because disagreement often arises about what and how things are accomplished (Joyce and Slocum 1990, 144). Joyce and Slocum 1990 posit that in situations where no agreement in climate perceptions exists, Reactors can actually become “climateless” or “normless” (i.e., analogous to Merton’s theoretical state of ‘anomie’), which is an environmental prescription for criminal organizational behavior (Cohen 1995). Using organizational theory, Cohen 1995 specifically predicts that an individualistic, *egoism*-based ethical climate likely produces anomic organizations; therefore, Reactors, similar to Prospectors, are likely to foster an individualistic *egoism*-based ethical climate. As discussed in detail in the next subsection, an *egoism*-

⁵ Victor and Cullen’s ethical climate theory builds from Kohlberg’s 1984 theory of moral development, in which individuals reach higher-levels of ethical reasoning as they progress from self-interested to principle-based reasoning (Fritzsche 2000). Victor and Cullen describe three primary types of ethical climate (egoism, benevolence and principle) which are based on the ethics criterion that people use to make decisions. Victor and Cullen then further subdivide the ethical climates into the ‘locus of analysis’ (e.g., perspective) used as a referent in decision-making (individual, local and cosmopolitan). Therefore there are actually nine theoretical climates (3 ethics criterion intersected with 3 locus of analysis)--see Figure 2, panel A. Cohen (1995, 188) indicates that “norms of the *local* reference group are expected to exert the strongest impact on behavior [because] for many business professionals, the firm becomes the principal local referent” (emphasis added).

based ethical climate is the only type of climate consistently linked to unethical organizational behavior (see Martin and Cullen 2006 for a review).

In summary, prior theoretical research (e.g., Victor and Cullen 1978, 1988; Joyce and Slocum 1990; Cohen 1995) suggests that Prospectors and Reactors will exhibit individualistic, *egoism*-based ethical climates in direct contrast to tendencies of Defenders to exhibit a rule-oriented, *principle*-based ethical climate and Analyzers' tendencies to perpetuate more moderate and likely *benevolence*-based ethical climates.⁶ Although business strategies are expected to ultimately influence the development of ethical climates within organizations, organizational culture likely mediates this relationship as suggested by Cohen's 1995 model and other theoretical research (e.g., Schwartz and Davis 1981; Kopelman et al. 1990; Kotter and Heskett 1992). Therefore, I formally state my first hypothesis:

HYPOTHESIS 1: Business strategies are associated with organizational ethical climates after controlling for organizational culture.

To complete testing of the conceptual framework shown in Figure 1, I describe how organizational business strategy may be the *primary* antecedent linking culture, climate and the remaining factors (i.e., opportunities and incentives) to the risk of irregular financial reporting.

Organizational business strategy, ethical culture and climate as antecedents to financial misreporting

Bentley et al. 2011 provide some empirical support for the beginning and end points of Cohen's 1995 model by linking certain organizational business strategies with significantly more frequent financial reporting irregularity occurrences. Using Miles and Snow's (1978, 2003) business typology, Bentley et al. 2011 find that firms following an innovative Prospector strategy are more likely to experience financial reporting irregularities compared to firms following the other two viable business

⁶ Miles and Snow 1994 describe examples of different business strategies. For instance, within the computer/electronics industry, National Semiconductor, a Defender, focuses "narrowly on efficient chip production utilizing advanced process technologies" (14) while Hewlett-Packard, a Prospector, pursues product lines only while the company has a "distinct technological or design advantage" but abandons this arena when products reach the stage of competing on price (33). IBM, an Analyzer, has a complex matrix organization which allows them to "achieve global efficiency as well as local responsiveness" (36). Finally, a high proportion of Reactors (i.e., firms lacking "strategy, structure, and process fit") were present in the airline industry prior to deregulation, which failed or went bankrupt (e.g., Pan Am) without governmental protection (77).

strategies (i.e., Defenders and Analyzers). Miles and Snow's (1978, 2003) organizational theory suggests business strategies influence multiple facets of the organization, which Bentley et al. 2011 suggest include organizational characteristics consistent with two of SAS No. 99's fraud risk factors—incentives and opportunities to misreport. For instance, Bentley et al. 2011 describe how Prospector companies' characteristics embody several of the following SAS No. 99 incentive risk factors: the propensity to grow rapidly and sporadically, to encounter lower profitability more frequently, and to engage in riskier compensation incentives (e.g., (Miles and Snow 1973, 2003; Hambrick 1983; Ittner, Larcker, and Rajan 1997; Rajagopalan 1997; Singh and Agarwal 2002). Furthermore, Prospector firms have complex organizational designs and lack organizational stability, both of which are opportunity-related risk factors (AICPA 2002).⁷

This study attempts to establish organizational business strategy as an underlying antecedent for all three SAS No. 99 fraud risk factors by using ethical climate to proxy for the third fraud risk factor (*attitudes/rationalizations*). Using ethical climate as a proxy for this third risk factor appears reasonable because risk factors reflective of SAS No. 99's third leg of the fraud triangle include: “ineffective communication, implementation, support, or enforcement of the entity's values or ethical standards by management or the communication of inappropriate values or ethical standards” (AICAP 2002, AU §316.85). A recent working paper by Murphy et al. 2011, using a sample of witnesses and perpetrators of fraudulent activity (e.g., fraudulent reporting and asset misappropriation), find a significant correlation between individual rationalization measures and ethical climate measures (specifically those associated with an egoism-based climate), thus giving some empirical support for the use of ethical climate as a proxy for SAS No. 99's third fraud risk factor (*attitudes/rationalizations*).⁸

⁷ Bentley et al. (2011) discuss how companies following a Defender strategy have different incentives and opportunities to commit financial reporting irregularities but to a much lesser extent.

⁸ Murphy et al. 2011 specifically find that the rationalization measures most strongly correlated with an egoism-based climate include rationalizing the behavior by placing blame on the organization (e.g., the fraud suspect rationalized their behavior because s/he was instructed to perform the fraudulent action, was helping the company or was performing a similar fraudulent act as others within the company). However, ethical climate, an organizational-level construct is separate from individual-level rationalization (Murphy et al. 2011).

One explanation for why Prospectors engage in aggressive reporting behavior (e.g., financial reporting irregularities; tax aggressiveness) may be that these firms also develop ethical cultures and climates that perpetuate this type of aggressive behavior. Specifically, Prospectors, due to their innovative, risk-taking focus and decentralized organizational structure, appear more likely to perpetuate an *egoism*-based climate, which is the *only* type of climate shown to be positively related to deviant organizational behavior such as lying, stealing and falsifying reports (Martin and Cullen 2006).⁹ Theoretically, self-interested egoism-based climates should be associated with unethical behavior, whereas rule-oriented principle-based climates should be associated with ethical behavior, consistent with both Wimbush and Shepard's 1994 conceptual model and Kohlberg's 1984 theory of moral development (Treviño et al. 1998; Fritzsche 2000). In egoism-based climates "flagrant types of crime, such as fraud and outright deception, may be more likely to occur" (Cullen, Victor, and Stephens 1989, 60) because "individuals are less likely to weight the interests of others...or rules, laws and codes...when making decisions regarding ethical dilemmas" (Barnett and Vaicys 2000, 354). An organization which is less likely to consider "rules, laws and codes" in decision-making is identified by *SAS No. 99* as an organization more at risk of fraudulent activity where "known history of violations of securities laws or other laws and regulations, claims against the entity, its senior management, or board members alleging fraud or violations of laws and regulations" (AICPA 2002, AU §316.85) are specific risk factors reflective of the third leg of the fraud triangle (*attitudes/rationalizations*).

Appelbaum, Deguire, and Lay's 2005 review on deviant behavior indicates that turnover is higher in deviant firms while Ferrell and Skinner 1988 find that centralization is related to higher perceived ethical behavior. Because Prospectors are both more likely to experience significant management turnover and also be *decentralized* (Miles and Snow 1978, 2003), this lends additional structural evidence for Prospectors to exhibit more deviant organizational behavior. In addition, because innovative firms are also more likely to deemphasize adherence to rules and procedures (Victor and Cullen 1987, 1988), I

⁹ Note that the prior section also indicates that firms following a second type of strategy, a transitory Reactor strategy, are also likely to be associated with an egoism-based climate and thus are also expected to experience deviant organizational behavior (e.g., Joyce and Slocum 1990; Cohen 1995).

expect Prospectors to deemphasize ethics code implementation compared to rule-oriented Defenders (where code implementation is an ethical *cultural* element).¹⁰ Cohen 1995 posits that a difference between organizations likely to perpetuate deviant behavior is in the *implementation* of the ethics code where “in highly anomic institutions...codes are often poorly distributed and inadequately enforced, communicating to employees that management is not genuinely serious about their implications” (197). Anecdotally, it is interesting to note that Enron’s board of directors allowed management to violate the firm’s written ethics code. Specifically, “Enron’s board of directors voted three times to suspend the conflict of interest provisions in Enron’s code of ethics to permit CFO Andrew Fastow to establish and operate entities that transacted business with Enron and profited at Enron’s expense” (Schwartz et al. 2005, 85).¹¹

Conversely, an ethical climate characterized by benevolence-based ideals factors concern for others into the ethical decision-making process (e.g., employees, customers and other stakeholders) and thus should result in less ethically questionable behavior (Barnett and Vaicys 2000). Similarly, an ethical climate characterized by principle-based ideals should result in more ethical decisions because relatively inflexible principles of right or wrong (e.g., professional ethics codes or societal regulations regarding ethics) are fostered into the ethical decision-making process (Barnett and Vaicys 2000).¹² Martin and Cullen’s 2006 meta-analysis on the ethical climate literature reveals that the benevolence- and principle-based ethical climates are negatively correlated with deviant organizational behaviors.

As discussed in the previous section, Analyzers are expected to have benevolence-based climates while Defenders are expected to have principle-based climates. Since neither of these types of climates is

¹⁰Ethical culture elements include formal mechanisms like reward and punishment structures and procedures for implementing an organizational ethical code; ethical culture also includes informal elements such as rigid authority structures where subordinates feel unable to challenge authority figures and ethics codes inconsistent with organizational norms (i.e., ethics code to maintain a public image) (Treviño et al. 1998).

¹¹Enron appeared to be a Prospector firm with an egoism-based climate. Enron was known for innovation and risk-taking, promoted “self-interest above any other interest” and focused on “winning-at-all costs.... with little regard to ethics” (Sims and Brinkmann 2005, 250). For example, a former Enron vice president in describing Enron’s reward structure remarks that: “The moral of this story is break the rules, you can cheat, you can lie, but as long as you make money, it’s all right (quoted after Schwartz, 2002)” (Sims and Brinkmann 2005, 250).

¹² However, Cullen et al. 1989 indicates there are still risks of unethical behavior in other types of climates besides those climates rooted in egoism. For instance, employees in a benevolent climate may offer a bribe when faced with losing a contract because the contract may help others in the firm. Employees in a rules-oriented climate may downplay their individual judgment, which could lead to a conflict between various rules and regulations.

expected to be negatively associated with deviant behavior, the organizational literature provides further support for why Bentley et al. 2011 find that *neither* Analyzers nor Defenders are more likely to experience financial reporting irregularities. Further, bureaucratic Defender-like firms which are oriented toward principle-based ethical climates (Joyce and Slocum 1990) may be more likely to use rigid authority structures to enforce strong adherence to ethical rules and procedures. Note that Cohen 1995 suggests that rigid authority structures are only negative cultural attributes in situations where employees feel pressured by management to violate the law.¹³

In conclusion, both theoretical and empirical research associate firms that display individualistic, egoism-based climates (e.g., likely Prospector and Reactor type firms) with deviant organizational behaviors while associating firms that display either benevolence- or principle-oriented climates (e.g., likely Analyzer and Defender type firms) with more ethical organizational behaviors. Altogether, Cohen's 1995 model suggests that the relationship between business strategy and deviant organizational behavior is mediated by both ethical culture and climate. Based on Hogan et al.'s 2008 review of the fraud literature, both opportunity and incentive factors are found to be strongly associated with financial misstatement. Thus, to test whether ethical climate (serving as a proxy for *attitudes/rationalizations*) and ethical culture mediate the relationship between business strategy and the risk of financial misstatement and is not confounded by relevant opportunity and incentive factors, I control for all these factors in the model. Formally I state my hypothesis:

HYPOTHESIS 2: Ethical climate (as a proxy for the third fraud risk factor, *attitudes/rationalizations*) and ethical culture mediate the relationship between business strategy and the risk of financial misstatement, after controlling for opportunity and incentive factors.

¹³ Anecdotally, WorldCom provides anecdotal evidence where drivers for fraudulent behavior included "a systematic attitude conveyed from the top down that employees should not question their superiors, but simply do what they were told" (WorldCom's 2003 Directors' Report as quoted by Schwartz et al. 2005, 80).

3. Model and Measures

Main Model

I examine whether ethical culture and climate significantly mediate the relationship between organizational business strategy and the risk of financial misstatement, while controlling for relevant opportunity and incentive factors. The measures for my model are obtained using a combination of survey and archival data. The primary theoretical model is as follows:

$$\text{Risk of financial misstatement} = f(\text{Strategy, Culture, Climate, Opportunity, Incentive}) \quad (1)$$

Measures

Risk of financial misstatement

My dependent variable is the Accounting and Governance Risk (*AGR*) measure produced by Audit Integrity. This measure is constructed from publicly available information, and is intended to represent the likelihood that financial information contains false or misleading information (refer to Price, Sharp, and Wood 2011). *AGR* is scored discretely from 0 (high risk of material misstatement) to 100 (low risk of material misstatement) and, similar to Price et al. 2011, I reverse score the measure such that higher scores represent greater risks of financial statement misreporting.

I use the Audit Integrity risk measure over alternative measures for several reasons. First, I use an *archival* rather than a survey measure to represent financial misreporting risk because asking participants to disclose fraudulent or irregular reporting behavior would incriminate survey participants and thus is not permissible.¹⁴ Even if it were permissible to ask these types of survey questions, answers would likely be severely biased if participants feared retaliation for reporting sensitive information. Second, I use this risk measure over actual irregularity occurrences because the infrequency of financial statement irregularities that align with my survey sample would limit my ability to test any association underlying my hypotheses.¹⁵ Audit Integrity's risk measure is available for a large cross-section of companies and is

¹⁴ Special thanks to both workshop participants and an outside professional organization in identifying this problem.

¹⁵ Refer to Price et al. 2011 for evidence documenting the low frequencies of certain types of irregularities in recent years.

reported every year, including the year in which the surveys are conducted (e.g., 2010 or 2011 depending on the latest available set of financial statements). Finally, I use this measure rather than existing academic risk measures (e.g., Dechow, Sloan, and Sweeney's 1996 modified Jones model; Dechow et al.'s 2011 fraud score) because Price et al. 2011 find that Audit Integrity's AGR measure generally outperforms the academic measures in detecting and predicting financial reporting irregularities.

Strategy

I develop firm strategy classifications based on my survey instrument. I adapt Conant, Mokwa, and Varadarajan's 1990 11-item validated scale, which captures the multi-dimensional attributes of Miles and Snow's (1978, 2003) business strategy typology.¹⁶ For each of the 11 strategy questions, participants select one of four options that best describe their organization relative to industry competitors where each of the options corresponds to a different strategy classification (Reactor, Prospector, Analyzer, or Defender). I classify an organization's overall business strategy following Conant et al.'s 1990 'majority rule'. For instance, if a participant answers the majority of the questions with a 'Prospector' response, then the organization is classified as having an overall 'Prospector' strategy.

Culture and climate

I also use the survey instrument to obtain measures of an organization's ethical culture and climate. I use Treviño et al.'s 1998 21-item ethical *culture* scale and Victor and Cullen's (1987, 1988) 36-item ethical *climate* scale, which are empirically distinct (see Treviño et al. 1998). The ethical culture scale indicates how an organization implements its ethics code and how strongly authority figures are obeyed within the organization, and also identifies characteristics about the organization's overall ethical environment—e.g., whether ethical behavior is rewarded and unethical behavior is punished. The ethical climate scale indicates what the organization *values* that corresponds to the ethics criterion that people use to make decisions (egoism, benevolence, and principle). For example, does the organization primarily value maximizing individual or company self-interest, fostering concern for a broad set of stakeholders

¹⁶ This scale was validated by Conant et al. 1990 using a panel of organizational theory and strategy experts and continues to be used in the management literature (e.g., DeSarbo et al. 2005; Song Di Benedetto, and Nason 2007).

(e.g., employees or customers), or requiring strong adherence to rules or external laws? All questions are measured using a 7-point Likert scale.

Opportunity and incentive factors

I collect archival data to control for the incentive and opportunity risk factors identified by the prior financial irregularity literature (e.g., Summers and Sweeney 1998; Beneish 1999; Dechow et al. 2011; Price et al. 2011; Bentley et al. 2011; McGuire, Omer, and Sharp 2012). Because Bentley et al. 2011 provide an extensive discussion linking business strategies to the relevant incentive and opportunity factors that are included in their irregularity model, I control for these same factors in my model and maintain similar sign predictions.¹⁷ Specifically, I control for firm size, profitability, growth, mergers and acquisitions, leverage, *ex ante* financing needs, industry type and concentration, discretionary accruals, and the presence of external monitors such as dedicated institutional investors and Big N audit firms.

Other controls

Because prior research provides evidence that individual characteristics have a direct effect on ethical decision-making, I include the following individual characteristics obtained from the survey as controls in my model: gender, age, education, tenure, and U.S. citizenship (McNichols and Zimmerman 1985; Ford and Richardson 1994; Wimbush, Shepard, and Markham 1997). I control for job satisfaction and organizational commitment measures (measured using 7-point Likert scales) because Martin and Cullen's 2006 meta-analysis reveals that these measures may directly mediate the relationship between organizational ethical climate and dysfunctional behavior.¹⁸ Based on the findings in McGuire et al. 2012 that show an association between higher levels of religiosity and less frequent occurrences of financial reporting irregularities, I control for the survey participants' level of religiosity (measured using a 7-point Likert scale). I also control for other participant-related information—e.g., their position in the company

¹⁷ I do not control for the Bentley et al. 2011 firm age measure because requiring the presence of this variable eliminates too many observations when aligned with the survey data.

¹⁸ I measure job satisfaction (*JOB SATISFY*) with a single item following Treviño et al. 1998. I measure organizational commitment with two items which capture different dimensions of organizational commitment: the extent to which the individual identifies with the organization's goals and attitudes (*COMMIT 1*) and internalizes the organization's perspective (*COMMIT 2*) (O'Reilly and Chatman 1986; Treviño et al. 1998).

and their department's responsibilities (accounting, finance, management, and marketing). Refer to Appendix 1 for a brief description of all of the survey and archival variables used in the model.

4. Survey methodology and data

Survey methodology

I followed Dillman's 1978 'total design approach' recommendations to develop my survey instrument and to maximize response rates. I first pre-tested the instrument with research colleagues and then pilot-tested it with people drawn from the actual survey population.¹⁹ I conducted my survey using two approaches: via the Internet and mail.²⁰ The purpose of the survey approach conducted via the Internet was to reach a broad network of business professionals (e.g., staff, managers, and executives) in a variety of industries and firms (e.g., public and private), thus improving the generalizability of the results. I rely on this survey data exclusively to test my first hypothesis, which examines the association among business strategies, ethical climates and cultures. The Internet survey was conducted through the access of two organizations: the Institute of Management Accountants (IMA) and a large, public university's alumni center with relevant survey populations of 5,000 and 4,600, respectively.²¹ The Internet survey was commenced on September 9, 2011 and held open for a three week period. I received a 7 percent overall response rate with a higher response rate via the university alumni center (11.5 percent) than via the IMA (4.0 percent).²² The overall response rate is consistent with several other accounting/finance

¹⁹ I pre-tested my survey instrument in a research workshop setting at another institution. After implementing the suggested changes, I pre-tested the instrument again among several other research colleagues. I conducted a pilot study through a university alumni center and received 107 survey responses (representing a 9 percent response rate).

²⁰ The survey instruments conducted via the Internet and mail are identical except that the Internet survey is conducted anonymously while the mail survey contains coded company identifiers to link survey responses to archival data. Internet survey participants have the option to voluntarily disclose the name of their organization at the conclusion of the survey. Approximately 37 percent of participants provide voluntary disclosure where over 50 of these responses can be linked to archival data. In addition, because the mail survey responses are linked to archival data, questions related to firm size and industry classification are omitted on the survey and are obtained via public data. The survey instrument is available upon request.

²¹ Although the university alumni center had a total relevant survey population of 4,600, 25 percent of this population is randomly selected to serve as the pilot study; therefore, the total relevant population is 3,450.

²² To increase response rates, both organizations *directly* sent their members a recruitment email containing the survey link and reminder emails were sent by both organizations the following week encouraging their members to participate. Financial incentives (i.e., an opportunity to win an iPad) were offered to survey participants.

research studies; for instance, Trahan and Gitman 1995; Graham, Harvey and Rajgopal 2005; and Graham and Harvey 2001 have 12 percent, 10 percent and 9 percent response rates, respectively.

I also collected mail-based survey data allowing surveys to be coded with company identifiers, thus providing a link between survey responses and archival data (e.g., *AGR* risk measure). I supplement my mail-based survey data with Internet survey observations where participants voluntarily disclosed the name of their organization *and* these organizations are included in my archival dataset. I use this archivally-linked survey data to test how business strategy, ethical culture and climate are related to the archival *AGR* risk measure (i.e., testing Hypothesis 2). In sensitivity tests, I compare an organization's strategy classification via survey results to Bentley et al.'s 2011 archival strategy (*STRATEGY*) measure to test the validation of their measure. I randomly selected my mail-based survey sample based on a population intersecting both the *AGR* and *STRATEGY* datasets (see Price et al. 2011 and Bentley et al. 2011 for a description of these datasets, respectively).

I restricted the available population to observations in the merged *AGR-STRATEGY* dataset to calendar year 2008 (the last overlapping year for both datasets). I then obtained updated *AGR* measures from Audit Integrity (now Risk Metrics) and *STRATEGY* measures (via replication of Bentley et al. 2011) for the years 2008 to 2011 for these firms to facilitate comparison with my survey data.²³ To identify and eliminate firms in the sample that were acquired by another company or were privatized since 2008, I restricted observations to firms present and active in Compustat in fiscal year 2010 (i.e., the last reporting period available on Compustat at the time I conducted my surveys). Finally, in an effort to improve response rates, my sample is restricted to organizations with a United States mailing address. My total potential sampling population is 2,007 companies. Refer to Table 1, panel A for details on the mail-based survey selection.

²³ Note that Audit Integrity periodically updates how these risk measures are computed (see Price et al. 2011). I allow the voluntarily disclosed Internet observations to match only current *AGR* measures and not the *STRATEGY* dataset (to maximize the archivally-linked sample size) in my main analysis because the *STRATEGY* dataset is only used in sensitivity analysis. However, inferences remain the same if I use this additional restriction.

[Insert Table 1 here]

I randomly selected 667 companies from my archival dataset (representing 33 percent of the total dataset population) and mailed three surveys to each organization for a total of 2,000 surveys. Surveys were mailed to three departments (accounting, finance and marketing) and were directed to the attention of the department heads—e.g., Controller, Chief Financial Officer or Director of Marketing.²⁴ To increase response rates, a team of graduate business students obtained specific company contact information via the phone and Internet resources (e.g., company website, Edgar and Hoovers) allowing approximately 90 percent of surveys mailed to be directed to *specific* individuals in the organization while the remaining 10 percent were directed to generic department title positions.²⁵ Following Dillman’s 1978 ‘total design method’ recommendations to increase response rates, I implemented a three-wave survey mailing. The first survey packet mailing was sent on September 21, 2011 with a reminder postcard mailing sent to all participants a week later. The final reminder survey packet mailing was sent to non-respondents on October 11, 2011. I received survey responses from 76 different companies, representing an 11 percent response rate from each of the 667 companies that were mailed surveys (or about a 4 percent overall response rate from the 2,000 total surveys mailed).

Data cleansing

Out of the 675 total survey responses received via the Internet and mail, 577 are usable responses after employing several data cleansing techniques (see Table 1, panel B). First, I employ *listwise deletion* by omitting observations with any missing data (Kline 2005, 53).²⁶ Similar to prior research (e.g., Conant et al. 1990; DeSarbo et al. 2005), I exclude observations where participants indicate low confidence in

²⁴ I target respondents from the same firm in different firms to reduce potential measurement bias (Zahra and Pearce 1990; Golden 1997). In addition, “multiple methods and sources can provide a means of validating strategy classifications” (Zahra and Pearce’s 1990, 761).

²⁵ Approximately 50 companies contacted via the telephone indicated that company policy prohibits employees from participating in research surveys. These organizations were substituted randomly without replacement from the archival dataset. The bias likely is small due to the small percentage of non-participating organizations (approximately 7 percent of the sample population) and also because these organizations may still be represented in the Internet surveys since those participants may have been unaware of their company’s policy.

²⁶ Kline (2005) suggests that listwise deletion is appropriate if the data appear to be missing randomly and the missing observations constitute a very small percentage of the total responses. I find insignificant demographical differences between observations with missing data versus observations without missing data; further, the missing observations constitute only a small percentage of total responses.

answering strategy and ethical culture and climate questions (i.e., where participants score below 6 on an 11-point Likert scale). I also eliminate multivariate outlier observations identified using Mahalanobis distance (p -value < 0.001), which is a common technique used to identify unusual response patterns in multivariate data (see Kline 2005, 51).²⁷

I randomized the order of the questions within blocks on the survey instrument to avoid order effects. For example, the business strategy questions appeared in random order in the first survey section while ethical climate questions appeared in random order in the second survey section. Using multivariate analysis of variance (MANOVA), I find no statistical differences ($p < 0.05$) in the main variables of interest (i.e., strategy, culture and climate constructs) between the two mail-based survey versions. I do not formally test differences for the Internet surveys because the Internet-survey software program completely randomizes each survey that is sent. To test for potential non-response bias, similar to prior research (e.g., DeSarbo et al. 2005; Van der Sted, Chow, and Lin 2006) I use MANOVA and find no statistical differences in either the Internet or mail-based samples between early and late respondents in the main variables of interest (i.e., strategy, culture and climate constructs), thus suggesting that non-response bias is less of a concern.

5. Results

Descriptive statistics

Survey demographics

Table 2 presents the demographic statistics for the Internet and mail surveys. The Internet sample shows broad representation among participant, firm, and industry level demographics. Table 2, panel A, indicates that men and women are equally represented and a variety of company tenure, positions and departments are evident. Approximately 60 percent of companies are privately owned and both large and small companies are represented in the sample. Analyzers represent the most frequent business strategy employed by companies, followed by similar percentages of Prospectors and Defenders while Reactors

²⁷ In sensitivity tests I confirm that outliers are not heavily influencing my main OLS results using robust regression (i.e., OLS coefficients are less than one robust standard error from the corresponding robust regression coefficients).

represent the least frequent strategy. As shown in Table 2, panel B, a wide array of industries is represented with some of the largest segments focused in manufacturing (18 percent), finance (12 percent), and business services (10 percent). Industries appear to be approximately evenly distributed across the four business strategies.

Unlike the Internet survey, the mail survey is not broadly representative for several reasons. First, because firms are randomly selected from a population of public companies, companies in the mail survey sample tends to be much larger (i.e., only 6 percent of companies have less than 100 employees and no companies have annual revenue less than \$1 million). Second, because surveys are mailed directly to department heads, the sample is biased toward executive level participants (54 percent), which may explain why these participants tend to be male, older, and have longer company tenure. Table 2, panel B shows concentrated industry segmentation where manufacturing represents the largest industry (59 percent), consistent with Bentley et al. 2011.

[Insert Table 2 here]

Factor analysis of ethical climate and culture

Following prior ethical climate and culture research, I use exploratory factor analysis to determine the dimensionality of the ethical climate and culture constructs. I use the principle-axis factor method with a Varimax rotation separately on my climate and culture items (where some items are transformed to adjust for skewness). I eliminate items with factor loadings less than 0.50 and/or cross-loadings more than 0.40, consistent with decision criteria used by Victor and Cullen (1987, 1988) and Treviño et al. 1998. Factor loadings show reasonable reliability because all Cronbach alpha measures exceed 0.70 (Nunnally 1978). I test and find acceptable model fit of the data using confirmatory factor analysis.²⁸ Appendix 2 presents the factor loadings (for the Internet sample only) and a description of the individual survey items contained in each factor.

²⁸Model fit measures for the ethical climate (culture) construct using the Internet survey sample include: CFI=0.917 (0.947); TLI= 0.907 (0.933); SRMR=0.058 (0.052); RMSEA=0.060 (0.069). The data show reasonable model fit since the Comparative Fit Index (CFI) and Tucker Lewis Index (TLI) values are above 0.90; the standardized root

My ethical *climate* factor results closely resemble commonly derived factors based on the empirical literature; however, I derive four instead of five ethical climate dimensions (out of the nine potential theoretical dimensions). Note that prior research never empirically derives all nine theoretical dimensions (see Martin and Cullen's 2006 meta-analysis). Figure 2 presents a schematic of the nine theoretical dimensions (panel A), five commonly derived dimensions (panel B), and my four derived ethical climate dimensions (panel C). My first factor captures an egoism-based climate (*EGOISM*) focused on maximizing the individual's or company's welfare; my second and third factor capture different types of benevolent-based climates where one climate is focused internally on promoting employee welfare (*BENV-CARING*) and the other climate is focused externally on being socially responsible to the customer and community (*BENV-SOCIAL*); my fourth factor captures a principle-based climate (*PRINCIPLE*) focused on strict adherence to company rules/procedures and external laws.

[Insert Figure 2 here]

Next I use factor analysis to derive the number of ethical *culture* dimensions. Using my full Internet sample, I derive two empirical dimensions of ethical culture: the overall tone of the ethical environment (*ENVIRONMENT*) and how strongly the organization requires strict obedience to authority figures (*OBEDIENCE*). There is a third dimension of culture, ethics code implementation (*IMPLEMENT*), which is only applicable to organizations which have a written code of ethics.^{29,30}

mean square residual (SRMR) values are below 0.08 and root mean square error of approximation (RMSEA) are approximately at 0.06. Refer to Brown 2006 for a summary of model fit guidelines.

²⁹ Public companies are required to have a written code of ethics (or explain why they do not have one) under the Sarbanes-Oxley Act of 2002. Thus whether companies have a written code of ethics provides more of an indication of a firm's statutory compliance rather than offering significant insights into their ethical culture. Because my archivally-linked subsample is constructed of only public companies, I derive this third cultural component (*IMPLEMENT*) for all observations in this sample (except for three observations which are excluded from the analysis). However, because my Internet sample consists of non-public companies, I find that over 25 percent of organizations in the Internet sample do not have a written code of ethics. Because I find no statistical differences (mean and median tests) between ethical culture factor scores applicable to all organizations (*ENVIRONMENT*; *OBEDIENCE*) constructed on separate code and non-code subsamples, I determine that it is appropriate to pool code and non-code organizations in the analysis. I construct an indicator variable for whether the organization has a code of ethics (*CODE*) and use this as a control variable in subsequent analyses.

³⁰ I perform separate MANOVA procedures to compare (1) the two Internet-based survey populations (IMA and alumni center), (2) Internet survey participants who voluntarily disclosed the name of their organization and those who did not disclose, and (3) mail-based surveys and Internet sample with voluntary disclosures that can be linked to the archival dataset. I find no significant differences ($p < 0.05$) among the main constructs of interest (i.e.,

Pearson correlations

In Table 3, I present Pearson correlations for both the useable Internet survey sample and the combined mail/voluntarily disclosed archivally-linked survey sample with populations of n=512 and 124, respectively. Overall, I find that the correlations among ethical culture and climate attributes are consistent with both prior theoretical and empirical research where an egoism climate is the only climate associated with negative ethical cultural attributes and the benevolence and principle climates are associated with positive cultural attributes. For example, *EGOISM* is the *only* climate negatively correlated with an ethical cultural environment (*ENVIRONMENT*) while the remaining climates (*BENV-CARING*, *BENV-SOCIAL* and *PRINCIPLE*) are positively correlated with *ENVIRONMENT*. In addition, firms with a *PRINCIPLE* climate are positively correlated with having a code of ethics (*CODE*) and stronger ethics code implementation (*IMPLEMENTATION*). Reactors are positively correlated with an egoism climate, consistent with theoretical expectations. However, contrary to expectations, Prospectors are negatively correlated with an egoism climate and rather are positively correlated with benevolent climates. Defenders and Analyzers do not overall show a strong positive correlation to any particular climate. Because organizational theory predicts that culture *mediates* the relationship between business strategy and ethical climate, I do not place strong emphasis on the direct correlation between strategy and climate without controlling for organizational culture in the model.

[Insert Table 3 here]

Multivariate results

Hypothesis 1 - Relationships among business strategy, ethical culture and climate

To test my first hypothesis, I use ordinary least squares (OLS) regression and regress each of the climate factor scores (*EGOISM*, *BENV-CARING*, *BENV-SOCIAL*, and *PRINCIPLE*) on the strategy indicator variables (*REACTOR*, *PROSPECTOR*, and *DEFENDER*), while controlling for the culture factor scores (*ENVIRONMENT*, *OBEDIENCE*). All results are interpreted relative to Analyzers. I use the

strategy, climate and culture factor constructs), suggesting that it is appropriate to pool these various groups of observations.

Internet sample (n=512) as the primary sample to test this relationship in order to increase the generalizability of the results. Because I pool code and non-code organizations, I also control for whether the organization has a written code of ethics (*CODE*). I control for participant and firm level variables in the models and cluster observations by industry. Refer to Appendix 1 for a description of each of these controls.³¹ In Table 4, each of the four columns reports the results estimating the model when the *EGOISM*, *BENV-CARING*, *BENV-SOCIAL*, and *PRINCIPLE* climate factor scores serve as the dependent variable, respectively.

I focus my discussion on the results related to Prospector firms in light of Bentley et al. 2011's finding that Prospector firms continually experience financial irregularities despite the increase in auditor efforts related to this business strategy. The coefficient on *PROSPECTOR* is positive and significant (p=0.04, one-tailed (henceforth all p-values for predicted OLS coefficients are reported one-tailed)) in the *EGOISM* model where *EGOISM* is the only type of climate also associated with a less ethical cultural environment as shown by the *negative* and significant (p<0.01) *ENVIRONMENT* coefficient (see Table 4, column 1). Thus, as predicted, Prospector firms appear to be associated with an individualist, egoism-based ethical climate –i.e., a climate characterized by an unethical environment. However, the coefficient on *PROSPECTOR* is also positive and significant (p<0.01) in the *BENV-SOCIAL* model where *BENV-SOCIAL* is a climate associated with a more ethical cultural environment as shown by the *positive* and significant (p<0.01) *ENVIRONMENT* coefficient (see Table 4, column 3). Thus, Prospector firms also appear to be associated with a benevolence climate focused on being socially responsible, which is a climate characterized by an ethical environment.

Because of these contradictory results I investigate whether the results relate to *different* sets of Prospector firms. Untabulated results reveal that a smaller (larger) set of Prospector firms have *EGOISM*

³¹ Although I collect two size-related firm measures from the surveys (approximate number of employees (*EMPLOYEES*) and firm's annual revenue (*REVENUE*)), I rely on the *EMPLOYEES* measure because there are enough missing observations for the *REVENUE* measure to impose a selection bias in the results (as determined from a MANOVA analysis on the survey demographics). Further, the two measures are very highly correlated (0.87, p<0.001) and thus appear to capture the same size construct. Note that *REVENUE* is the only survey measure I allowed to be missing.

factor scores above (below) the median and also have *BENV-SOCIAL* factor scores that are below (above) the median. Therefore, these results suggest that there are two separate groups of Prospector firms with the smaller set being associated with an egoism ethical climate. Untabulated mean and median tests reveal that the set of Prospectors with higher *EGOISM* factor scores relative to Prospectors with higher *BENV-SOCIAL* factor scores have less ethical environments, impose greater obedience to authority figures and have lower levels of job satisfaction and organizational commitment. I find no statistically significant differences based on firm level attributes (e.g., firm size and whether the company was publicly traded) between the two sets of Prospectors.³² Because prior empirical research has consistently shown that unethical behavior—e.g., lying, cheating and falsifying reports—arises in organizations with an egoism climate and in organizations with lower levels of job satisfaction and organizational commitment, one can infer from these results that the smaller set of Prospector firms associated with an unethical cultural environment and egoistic climate may then be more prone to financial misreporting.

Next I briefly discuss the OLS results of the remaining strategy classifications in Table 4. Overall, I find that Reactor firms are associated with an egoism ethical climate, consistent with Joyce and Slocum's 1990 theoretical expectations. Specifically, I find that the coefficient on *REACTOR* is positive and significant in the *EGOISM* model ($p=0.04$), similar to Prospector firms. Furthermore, the strong association that Reactors have with the egoism climate may give insight into why the organizational literature predicts that the Reactor strategy is considered non-viable in the long-term.

Finally, I examine the OLS results related to the Defender strategy. Contrary to expectations that Defenders have a rule-oriented, principle-based climate, the coefficient on *DEFENDER* is not statistically significant in the *PRINCIPLE* climate model (column 4). The insignificant association between Defenders and a principle-based climate may be due to a lack of variation in responses among participants regarding these types of questions, as responses to survey questions related to this climate are heavily skewed

³² There is a third set of Prospectors that have both *EGOISM* and *BENV-SOCIAL* factor scores above the median. These observations are excluded from this sub-analysis in order to isolate only those Prospector firms that are exclusively “egoistic” or “benevolent”.

(relative to responses in the other climate dimensions). Furthermore, *none* of the business strategies show a significant association with a principle-based climate. The *DEFENDER* coefficient is negative and statistically significant ($p < 0.01$) in the *BENV-CARING* model as shown in column 2, suggesting that relative to the Analyzer strategy, Defenders are less likely to have a benevolence climate. This finding is consistent with expectations that Analyzers due to their moderate tendencies may be more likely to exhibit a benevolence climate. Because the *DEFENDER* coefficient is not positive and significant in any of the climate models, climate differences between Defenders and Analyzers appear to be otherwise indistinguishable. This result may partially explain why Bentley et al. 2011 find that neither Defenders nor Analyzers are likely to experience financial reporting irregularities.

[Insert Table 4 here]

The results in Table 4 provide evidence that substantiates predicted relationships between business strategies and ethical climates (while controlling for ethical culture), supporting my first hypothesis. Next I test whether ethical culture *mediates* the relationship between business strategy and ethical climate, as posited by prior research. I test for mediation results using two approaches. In the first approach, I employ a bootstrapping-based method advocated by recent research (e.g., Preacher and Hayes 2008; Hayes 2009) as a more powerful and statistically valid way to test for mediation over the traditional Baron and Kenny 1986 approach. In the second approach I use simultaneous equation modeling (SEM) to perform the mediation analysis.³³

Untabulated results from the bootstrapping approach reveal that culture mediates the effect of business strategy on ethical climate. The relative mediation effects are statistically significant using a 95 percent bias-corrected bootstrap confidence interval based on a 5,000 bootstrap sample for both Prospector and Reactor firms in all ethical climates. However, the relative mediation effects are not statistically significant for Defender firms, suggesting that differences between Defenders and Analyzers are not statistically distinct. I find that ethical *ENVIRONMENT* *negatively* mediates the relationship

³³ I obtain adequate model fit using SEM analysis where CFI=0.91, TLI=0.90, SRMR=0.07 and RMSEA=0.05. Refer to footnote 28 for a description of model fit benchmarks.

between Prospector firms and an egoism climate while ethical *ENVIRONMENT* positively mediates the relationship between Prospector firms and all other ethical climates (*BENV-CARING*, *BENV-SOCIAL*, and *PRINCIPLE*). Using SEM, I confirm that that ethical culture partially mediates the relation between business strategy and ethical climate; thus, a negative ethical *ENVIRONMENT* results in an *EGOISM* climate while a positive ethical *ENVIRONMENT* results in any of the remaining ethical climates. In addition, I find that Prospector firms continue to be positively associated with an *EGOISM* and *BENV-SOCIAL* ethical climate, confirming the OLS results.

Overall, my results reveal that ethical culture significantly mediates the relationship between business strategy and ethical climate, supporting Hypothesis 1. I find that a set of Prospector firms perpetuates a more unethical organizational culture and climate providing additional insight into why Prospectors demonstrate aggressive reporting behavior. In addition, my findings also provide insight into *why* Bentley et al. 2011 find that Prospector firms, on average, continue to experience financial irregularities despite the increased audit effort directed at these firms. Specifically, auditors may be unable to distinguish between “good” and “bad” Prospectors. If this is true, then the increase in auditors’ efforts toward Prospector clients observed by Bentley et al. 2011 may be directed too generally across *all* Prospectors rather than being targeted more directly at the smaller set of unethical Prospectors that are more prone to financial misreporting. The relatively small set of unethical Prospectors appear to have low levels of employee job satisfaction and organizational commitment and thus auditors may need to pay particular attention to these Prospector clients. Ultimately, the financial irregularities observed by Bentley et al. 2011 may be attributable primarily to the set of *unethical* Prospector firms.

Hypothesis 2 - Linking business strategy, ethical culture and climate to the risk of financial misreporting

Hypothesis 2 examines the complete theoretical framework as shown in Figure 1 by analyzing whether ethical culture and ethical climate (a proxy for *attitudes/rationalizations*) mediate the relationship between business strategy and the risk of material financial misstatement, while controlling for relevant opportunity and incentive factors. To test Hypothesis 2, I utilize the survey sample that can be linked to

the external *AGR* measure of misreporting risk (i.e., combined mail surveys/applicable voluntarily disclosed Internet surveys) for a total of 124 survey observations. I match the survey data (business strategy, ethical culture and climate) with the *AGR* external measure of reporting risk and with archival incentive and opportunity risk factor measures. I include controls for the survey participant's level of job satisfaction and organizational commitment because these measures typically mediate the relationship between ethical climate and organizational behavior (see Martin and Cullen 2006).³⁴ To increase statistical power, I employ a pooled regression model where I merge the 124 survey data observations with several years of recent, non-missing archival data (i.e., fiscal years 2008-2011). To prevent firms with earlier reporting periods from incrementally influencing the results (i.e., firms with non-December year end fiscal dates could have four firm-years of archival information between fiscal years 2008-2011), I only retain the three most recent firm-year observations for a total of 296 observations.^{35, 36} I double-cluster standard errors by firm and industry and employ year fixed effects.

Table 5 presents the OLS results. I regress the *AGR* risk measure on ethical climate (my proxy for the third leg of the fraud triangle, *attitudes/rationalizations*), business strategies and ethical culture, while controlling for opportunity/incentive factors and participant-level controls. Altogether, the results provide some evidence that ethical climate, serving as a proxy for *attitudes/rationalizations*, is significantly associated with the risk of financial misstatement. Specifically, Table 5 shows that the coefficient on *EGOISM* is positive and marginally significant ($p=0.06$), indicating that firms with egoism climates are

³⁴ The job satisfaction and organizational commitment measures are highly correlated and demonstrate multicollinearity in my regression models. Thus I use Principle Components Analysis (PCA) to reduce the dimensionality and find that all three measures load highly on one factor (i.e., factor loadings above 0.90 for all factors). I use this factor, termed '*JOB_COMMIT*', in my multivariate analysis.

³⁵ Because both organizational strategy and culture are long-term in nature, matching these constructs with several years of recent archival firm data appears reasonable. Although ethical climate is more transitory in nature, climate is directly influenced by the more time invariant strategy and culture constructs and thus is expected to remain relatively constant over a short period of time. In sensitivity tests I restrict my model to the most recent archival firm data (e.g., fiscal year 2010 or 2011) in order to better align survey measures with data in the same reporting year. I note that due to low statistical power the results do not appear to be reliable. Thus, as expected many of my coefficients of interest become insignificant although generally maintaining the same sign as my tabulated results in Table 5. However, even in this model, some of the ethical climate variables – namely *EGOISM* and *BENV-CARING* – maintain significance.

³⁶ I follow Bentley et al. 2011 and only winsorize book-to-market (*BTM*) and discretionary accruals (*DAP*) at the 1st and 99th percentiles in my tabulated results. However, inferences in the OLS model remain the same when winsorizing all continuous archival control variables.

associated with *greater* risks of misreporting. In addition, the coefficients on *BENV-CARING* and *PRINCIPLE* are negative and significant ($p=0.02$ and $p=0.09$, respectively), indicating that benevolence and principle ethical climates are *negatively* associated with the risk of misreporting. However, the *positive* coefficient sign on the second type of benevolence climate (*BENV-SOCIAL*) which is inconsistent with expectations is insignificant (i.e., t-stat of 2.21 is insignificant based on one-tailed test with opposite sign prediction).

Consistent with Bentley et al. 2011, I find that Prospector firms are positively associated with the risk of misreporting indicated by the positive and statistically significant *PROSPECTOR* coefficient ($p=0.04$) in Table 5, even while controlling for ethical culture and climate in the model. Thus this finding suggests that culture and climate do not fully mediate the relationship between business strategy and the risk of financial misstatement. Untabulated bootstrapping mediation results reveal that only the *BENV-CARING* climate serves as a significant mediator for Prospector firms and both the *EGOISM* and *BENV-CARING* climates serve as significant mediators between Reactor firms and the risk of *AGR*.³⁷

[Insert Table 5 here]

Overall, my results provide some evidence supporting Hypothesis 2 that the relationship between business strategies and the risk of financial misreporting is mediated by ethical climate (a proxy for fraud *attitudes/rationalizations*). Specifically I find evidence that firms with an egoism-based climate are associated with a *greater* risk of financial misreporting while firms with a principle-based climate and a type of benevolence climate (i.e., a benevolence climate focused internally on promoting employee welfare) are associated with a *reduced* risk of financial misreporting, consistent with theoretical expectations. In addition, I continue to find evidence that Prospector firms are more likely to encounter a greater risk of financial misstatement, consistent with Bentley et al. 2011. Altogether, my results provide some evidence that ethical climate may serve as a proxy for the rationalization portion of the fraud

³⁷ I cannot test for mediation using SEM because there are not enough degrees of freedom with the number of parameters required for this smaller subsample.

triangle, thereby providing incremental information beyond both the incentive and opportunity to misreport. These tests and results address Hogan et al.'s 2008 call for more research in this area.

6. Additional Analysis

For my final analysis, I test the validity of Bentley et al.'s 2011 archival measure of business strategy by replicating this measure over the most current time period and comparing it to the survey responses. Using Miles and Snow's (1978, 2003) business strategy typology, Bentley et al. 2011 develop a discrete *STRATEGY* measure, constructed entirely from publicly available data which capture different attributes of the firm (e.g., historical growth patterns, marketing and R&D activities). Firms with higher *STRATEGY* scores represent Prospector-type firms (e.g., greater levels of growth, marketing and R&D activities *relative* to industry competitors) while firms with lower *STRATEGY* scores represent Defender-type firms (e.g., lower levels of growth, marketing and R&D activities *relative* to industry competitors). Firms with mid-level scores are classified as hybrid Analyzer-type firms. Reactor-firms are not categorized since organizational theory predicts that these firms are generally not viable in the long-term and are difficult to identify (e.g., Miles and Snow 1978, 2003).

I examine the correlations between the archival *STRATEGY* measure and strategy classifications based on my survey responses. I partition my sample on survey participants who are the most likely to correctly assess their firm's strategy, as suggested by prior strategy research: senior-level executives associated with either management or marketing activities.³⁸ I find that *STRATEGY* is positive and significantly correlated ($p=0.03$) with Prospector firms and negative and significantly negatively correlated ($p<0.01$) with Defender firms. Although, *STRATEGY* is positively correlated with Analyzer firms, the correlation is slightly above marginal significance ($p=0.105$), consistent with the notion that Analyzers occupy the middle of the *STRATEGY* measure continuum. Altogether, these findings support the validation of the Bentley et al. 2011 archival *STRATEGY* measure where firms on the upper (lower)

³⁸ The primary respondents targeted in prior business strategy questionnaires are CEOs or marketing directors, because CEOs are generally viewed as the most qualified to assess the firm's strategy (Conant et al. 1990; Golden 1997), and marketing directors "often play an active role both in business-level and marketing strategy formulation" (Conant et al. 1990, 371) and "should be knowledgeable about the importance that the business attaches to the marketing activities and thus, should be reliable informants" (Slater and Olson 2001, 1058).

end of the continuum are properly classified as Prospector (Defender) firms. I also find that *STRATEGY* is not significantly associated with Reactors, consistent with Bentley et al.'s 2011 decision to only model the three *viable* strategies (Prospectors, Analyzers, and Defenders).

7. Conclusion

This study examines whether a firm's organizational business strategy influences its ethical culture and climate, thus explaining *why* a firm's business strategy may ultimately contribute to an increased risk of financial misstatement. Using organizational theory and empirical evidence from recent research (e.g., Bentley et al. 2011), I identify that business strategy may be the primary antecedent linking the third and final fraud risk factor under *SAS No. 99 (attitudes/rationalizations)* through an organization's ethical climate to the risk of financial misstatement. Using a large-scale research survey, I find empirical evidence to support my hypothesis that firms' business strategies are associated with the evolution of ethical cultures and climates. I find evidence that the relationship between a firm's business strategy and ethical climate is directly mediated by ethical culture.

My findings provide insight into *why* Bentley et al. 2011 find that firms following a Prospector business strategy continue to experience financial irregularities despite the increase in auditors' efforts. I find that firms following a Prospector business strategy generate different ethical cultures and climates where a relatively smaller set of Prospector firms develops a negative ethical culture and climate (consistent with theoretical expectations) and a larger set of Prospector firms develops a positive ethical culture and climate. While auditors may be able to distinguish business strategies and their risks as suggested by Bentley et al. 2011, auditors may *not* be paying enough attention to ethical cultures and climates. Thus, the increase in auditors' efforts toward Prospector clients observed by Bentley et al. 2011 may be directed generally to *all* Prospector firms rather than being focused on the set of less ethical Prospectors, which are firms at greater risk to commit unethical behavior. Comparatively, I find that the smaller set of less ethical Prospectors have lower levels of employee job satisfaction and organizational commitment, suggesting that auditors may need to pay particular attention to Prospector clients with these attributes. I also find that firms following a second type of strategy, a transitory Reactor strategy, tend to

have negative ethical cultures and climates, giving insight into why organizational theory predicts that a Reactor strategy is not generally viable in the long-term.

I then combine my survey results with archival data, for a subset of public companies, to examine the relationship between a firm's business strategy, ethical climate and culture, and the risk of financial misreporting (while controlling for incentive and opportunity factors). Specifically, I examine the relationship between my survey measures (business strategy, ethical culture and climate) and an external risk measure developed by Audit Integrity that captures the likelihood that financial statements contain false or misleading information. Using a combination of survey and archival data, I replicate Bentley et al.'s 2011 results indicating that Prospector firms are significantly more likely to experience higher levels of financial misreporting. In addition, I find some evidence that firms with less (more) ethical climates are associated with an increased (reduced) risk of financial misreporting. Thus, ethical climate may be an important factor in the rationalization aspect of the fraud triangle and likely provides incremental information beyond the incentive and opportunity aspects. I find limited evidence to suggest that either organizational culture or climate directly mediates the relationship between business strategy and misreporting risk.

Altogether, this study identifies business strategy as a primary antecedent linking ethical culture and climate to the risk of financial misreporting, thus addressing previous calls for research (e.g., Zahra et al. 2005 and Hogan et al. 2008) involving the fraud triangle and underlying antecedents for financial misreporting. This study makes several contributions to both the accounting and management literatures. First, although theory predicts an association between organizational strategies and ethical cultures and climates, there is little empirical research to support these predictions. My study provides empirical evidence linking specific strategies to certain ethical culture and climate dimensions. Second, using a combination of survey and external archival measures, I provide insight into *why* recent research (i.e., Bentley et al. 2011; Higgins et al. 2011) finds a significant association between certain business strategies and aggressive reporting behavior. Specifically, I find that certain business strategies appear to cultivate unethical cultures and climates. Finally, I provide some evidence that companies with more unethical

climates (again, my proxy for the third and final *SAS No. 99* risk factor) are more prone to financial misreporting while companies with stronger ethical climates are less prone to financial misreporting. Altogether, my study provides empirical support for a theoretical framework identifying *why* business strategy is an underlying antecedent for financial statement misreporting. These findings, along with the links I document between business strategy and an organization's ethical culture and climate, provide important evidence regarding the third leg of the auditing fraud triangle (rationalization).

Appendix 1: Variable definitions

	Variable		Description
Survey variables (primary):			
<i>Strategy classifications:</i>	<i>REACTOR</i>	=	Indicator variable equal to 1 (and 0 otherwise) if the company is classified as a Reactor, whose strategy focuses on responding to environmental conditions;
	<i>PROSPECTOR</i>	=	Indicator variable equal to 1 (and 0 otherwise) if the company is classified as a Prospector, whose strategy focuses on being an innovative product/service leader in a wide range of markets;
	<i>ANALYZER</i>	=	Indicator variable equal to 1 (and 0 otherwise) if the company is classified as a Analyzer, whose strategy focuses on balancing efficiency in producing products/services while also maintaining an innovative product/service sector;
	<i>DEFENDER</i>	=	Indicator variable equal to 1 (and 0 otherwise) if the company is classified as a Defender, whose strategy focuses on efficiently producing a narrow set of products/services;
<i>Ethical climate classifications: (also refer to Appendix 2)</i>	<i>EGOISM</i>	=	Higher factor loadings indicate an egoism-based ethical climate where organizational values are dominated by maximizing self-interests;
	<i>BENV-CARING</i>	=	Higher factor loadings indicate a benevolent-based ethical climate where organizational values are dominated by considering the consequences to others in the organization (i.e., internally-focused on employees' welfare);
	<i>BENV-SOCIAL</i>	=	Higher factor loadings indicate a benevolent-based ethical climate where organizational values are dominated by considering the consequences to customers and outside community (i.e., externally focused on social responsibility) ;
<i>Ethical culture classifications: (also refer to Appendix 2)</i>	<i>PRINCIPLE</i>	=	Higher factor loadings indicate a principle-based ethical climate where organizational values are dominated by adherence to company policies and laws;
	<i>ENVIRONMENT</i>	=	Higher factor loadings indicate the organization has a strong ethical environment (e.g., unethical behavior is punished while ethical behavior is rewarded);
	<i>OBEDIENCE</i>	=	Higher factor loadings indicate the organization demands obedience to authority figures without question;
	<i>IMPLEMENT</i>	=	Higher factor loadings indicate the organization has strong ethical code implementation (applicable only for companies with a written ethical code);
Survey variables (secondary):			
	<i>JOB SATISFY</i>	=	Higher scale ratings indicate greater job satisfaction;
	<i>COMMIT 1</i>	=	Higher scale ratings indicate greater organization commitment related to the participant identifying with organizational goals and attitudes;
	<i>COMMIT 2</i>	=	Higher scale ratings indicate greater organization commitment related to the participant internalizing the organization's perspective;
	<i>JOB_COMMIT</i>	=	Constructed of <i>JOB SATISFY</i> , <i>COMMIT 1</i> and <i>COMMIT 2</i> using PCA where higher factor loadings indicate greater job satisfaction and organizational commitment;

Survey controls (firm-level):

<i>CODE</i>	=	Indicator variable equal to one if the company has a written code of ethics, and 0 otherwise;
<i>EMPLOYEES</i>	=	Ordinal variable where higher values indicate greater number of employees;
<i>REVENUE</i>	=	Ordinal variable where higher values indicate greater annual revenue;
<i>PUBLIC</i>	=	Indicator variable equal to one if the firm is publicly listed, and 0 otherwise;

Survey controls (participant-level):

<i>RELIGIOSITY</i>	=	Higher scale ratings indicate greater importance religion holds to the individual in daily life;
<i>FEMALE</i>	=	Indicator variable equal to one for female, and 0 otherwise;
<i>US</i>	=	Indicator variable equal to one for a United States citizen, and 0 otherwise;
<i>AGE</i>	=	Ordinal variable where higher values indicate an older age;
<i>EDUCATION</i>	=	Ordinal variable where higher values indicate completing a higher level of education;
<i>TENURE</i>	=	Ordinal variable where higher values indicate longer employment tenure in the company;
<i>POSITION</i>	=	Ordinal variable where higher values indicate a more senior position in the organization;
<i>DEPT</i>	=	Categorical variable for employment in the accounting, finance, management, marketing, or other departments;

Archival Variables:

<i>AGR</i>	=	Audit Integrity's Accounting and Governance Risk measure ranging from 0 to 100 (high risk of financial misstatement) constructed from public information (refer to Price et al. 2011);
<i>ln(ASSETS)</i>	=	Natural logarithm of total assets;
<i>ROA</i>	=	Return on assets equal to income before extraordinary items divided by total assets;
<i>LOSS</i>	=	Indicator variable equal to one if a loss occurred within the current or previous two fiscal years, and 0 otherwise;
<i>BTM</i>	=	Book-to-market ratio;
<i>SALES GROWTH</i>	=	Percentage change in sales from the prior to the current year;
<i>M&A</i>	=	Indicator variable equal to one if a merger or acquisition occurred in prior five years, and 0 otherwise;
<i>LEVERAGE</i>	=	Financial leverage equal to total debt divided by total assets;
<i>FINANCING</i>	=	Indicator variable equal to one if the firm has an <i>ex ante</i> financing need, and 0 otherwise (refer to Dechow et al. 1996);
<i>HERF</i>	=	Herfindahl Index measuring industry concentration (refer to Bentley et al. 2011);
<i>LITIGIOUS</i>	=	Indicator variable equal to one if the company is in a litigious industry (refer to Bentley et al. 2011);
<i>DAP</i>	=	Discretionary accruals using a performance-adjusted modified Jones model (see Larcker and Richardson 2004);
<i>BIGN</i>	=	Indicator variable equal to one for Big N auditor, and 0 otherwise;
<i>DED IO</i>	=	Lagged value of a dedicated institutional investor variable (refer to Bentley et al. 2011);
<i>STRATEGY</i>	=	Archival business strategy measure developed by Bentley et al. 2011 where high (middle) [low] scores represent Prospector (Analyzer) [Defender] strategies, respectively;

Appendix 2: Factor loadings for ethical climate and culture constructs

Panel A: Ethical climate factor loadings for Internet sample (N=512)

Construct	Items	Factor Loadings				Cronbach Alpha
		1	2	3	4	
<i>EGOISM</i>	In this company, people are mostly out for themselves. (EL1)	-0.331	-0.105	0.735	-0.161	0.825
	In this company, people protect their own interest above other considerations. (EI10)	-0.252	-0.071	0.742	-0.185	
	People in this company are very concerned about what is best for themselves. (EI33)	-0.140	-0.010	0.662	-0.123	
	People are expected to do anything to further the company's interests. (EL4)	-0.005	-0.136	0.596	-0.033	
	Work is considered sub-standard only when it hurts the company's interests. (EL8)	-0.048	-0.121	0.569	-0.099	
<i>BENV-CARING</i>	In this company, people look out for each other's good. (BI5)	0.634	0.159	-0.345	0.151	0.892
	In this company, our major concern is always what is best for the other person. (BI16)	0.544	0.204	-0.036	0.229	
	What is best for each individual is a primary concern in this company. (BI32)	0.636	0.115	0.078	0.200	
	It is expected that each individual is cared for when making decisions here. (BI35)	0.727	0.168	-0.169	0.263	
	The most important concern is the good of all the people in this company. (BL12)	0.764	0.107	-0.164	0.033	
	Our major consideration is what is best for everyone in the company. (BL21)	0.737	0.207	-0.130	0.061	
	People in this company view team spirit as important. (BL27)	0.509	0.120	-0.280	0.354	
People are very concerned about what is generally best for employees in the company. (BL31)	0.671	0.158	-0.211	0.247		
<i>BENV-SOCIAL</i>	It is expected that you will always do what is right for the customer and public. (BC26)	0.190	0.234	-0.175	0.694	0.856
	People in this company have a strong sense of responsibility to the outside community. (BC28)	0.311	0.206	-0.241	0.545	
	People in this company are actively concerned about the customer's, and the public's interest. (BC30)	0.252	0.153	-0.164	0.738	
	The effect of decisions on the customer and the public is a primary concern in this company. (BC34)	0.262	0.219	-0.112	0.704	
<i>PRINCIPLE</i>	It is very important to follow strictly the company's rules and procedures. (PL7)	0.128	0.634	-0.066	0.063	0.874
	Everyone is expected to stick by company rules and procedures. (PL15)	0.056	0.774	-0.061	0.070	
	Successful people in this company go by the book. (PL18)	0.262	0.627	0.004	-0.010	
	Successful people in this company strictly obey the company policies. (PL23)	0.252	0.662	-0.073	0.027	
	The first consideration is whether a decision violates any law. (PC13)	0.148	0.548	-0.104	0.157	
	People are expected to comply with the law/professional standards above other considerations. (PC14)	0.075	0.698	-0.098	0.280	
	In this company, people are expected to strictly follow legal or professional standards. (PC20)	0.062	0.670	-0.177	0.217	
	In this company, the law or ethical code of their profession is the major consideration. (PC24)	0.122	0.607	-0.120	0.289	

Panel B: Ethical culture factor loadings for Internet sample (N=512)

Construct	Items	Factor Loadings		Cronbach Alpha
		1	2	
<i>ENVIRONMENT</i>	Management in this organization disciplines unethical behavior when it occurs. (EE5)	0.765	-0.056	0.920
	Penalties for unethical behavior are strictly enforced in this organization. (EE6)	0.718	-0.048	
	Unethical behavior is punished in this organization. (EE7)	0.666	0.007	
	Top management of this organization represents high ethical standards. (EE8)	0.680	-0.131	
	People of integrity are rewarded in this organization. (EE9)	0.739	-0.215	
	Top management of this organization regularly shows that they care about ethics. (EE10)	0.811	-0.189	
	Top management of this organization is a model of unethical behavior (<i>item is reverse-coded</i>). (EE11)	0.541	-0.266	
	Ethical behavior is the norm in this organization. (EE12)	0.793	-0.182	
	Top management of this organization guides decision making in an ethical direction. (EE13)	0.828	-0.125	
	Ethical behavior is rewarded in this organization. (EE14)	0.683	-0.154	
<i>OBEDIENCE</i>	This organization demands obedience to authority figures, without question. (OTA1)	-0.137	0.713	0.775
	People in this organization are expected to do as they are told. (OTA2)	-0.009	0.653	
	The boss is always right in this organization. (OTA3)	-0.206	0.695	
<i>IMPLEMENT*</i>	Employees are required to acknowledge that they have read and understood the ethics code. (IMP1)	n/a	n/a	
	This organization has established procedures for employees to ask questions about ethics code requirements. (IMP2)	n/a	n/a	
	The code of conduct is widely distributed throughout the organization. (IMP3)	n/a	n/a	
	Employees are regularly required to assert that their actions are in compliance with the ethics code. (IMP4)	n/a	n/a	

Note: Refer to Cullen et al. 2003 and Treviño et al. 1998 for the full ethical climate and culture questionnaires, respectively. Participants rate the extent to which each statement is true about their organization on a 7-point Likert scale. Using the principle-axis factoring method and Varimax rotation, items from the questionnaire are removed if factor loadings are below 0.50 and/ cross loadings exceed 0.40. Item coding is omitted on the survey instrument.

*Factor loadings are not applicable in the full Internet sample since this sample contains organizations with and without ethics codes; code implementation questions are only applicable for the archivally-linked sample of where all the public companies have written ethics codes.

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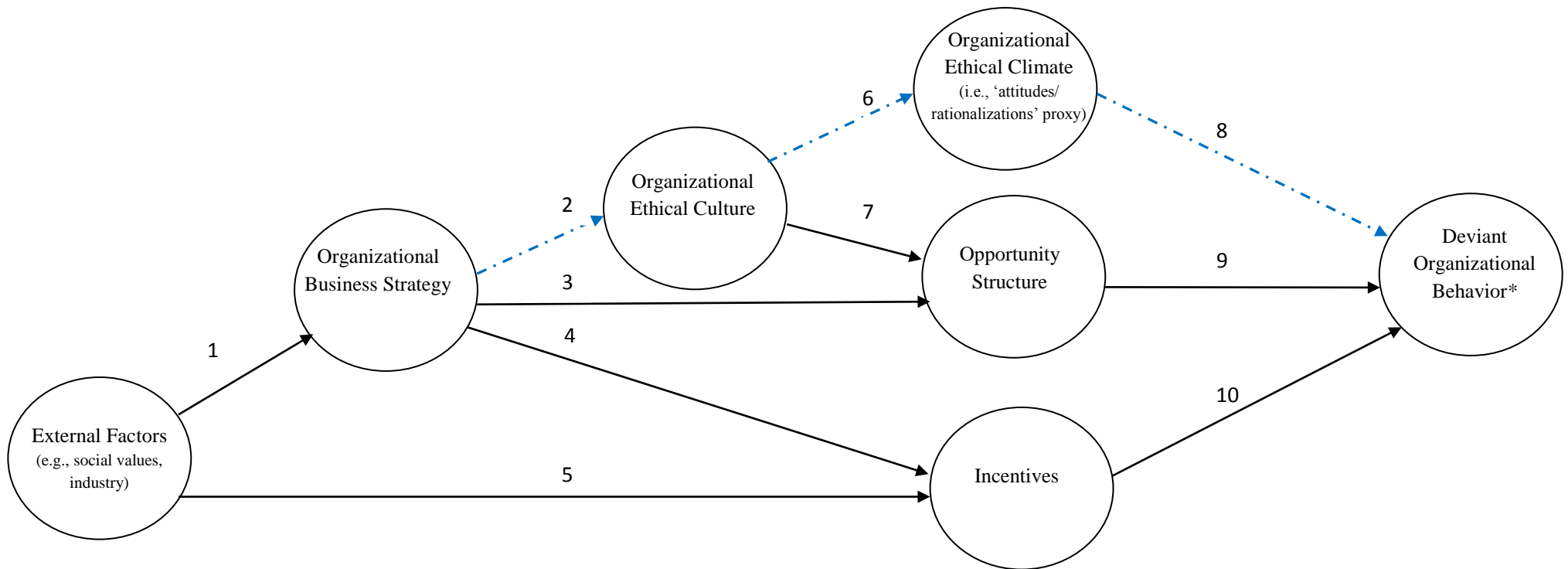
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FIGURE 1
Theory Representation

This conceptual theoretical framework is based on Cohen's 1995 framework for analyzing the antecedents on criminal business practices and the fraud triangle framework (Cressey 1953) as adopted by SAS No. 99 (AICPA 2002). The blue dotted line indicates the primary linkages tested in this paper.



*Unlike prior research which focuses on actual behavior, I extend the framework to include the *risk* of financial misreporting.

Prior empirical research supports the following individual linkages:

- (1) [Miles and Snow 1978, 2003; Hambrick 1983]
- (2) [Schwartz and Davis 1981; Kotter and Heskett 1992]
- (3) [Simons 1987; Bentley et al. 2011]
- (4) [Ittner et al. 1997; Rajagopalan 1997; Singh and Agarwal 2002; Bentley et al. 2011]
- (5) [Dechow et al. 1996; Summers and Sweeney 1998; Beneish 1999; Efendi et al. 2007]³⁹
- (6) [Schwartz and Davis 1981; Kopelman et al. 1990; Treviño et al. 1998; Barnett and Vaicys 2000]
- (7) [refer to Cohen's 1995 theoretical model]
- (8) [Kopelman et al. 1990; Wimbush and Shepard 1994; Wimbush et al. 1997; Fritzsche 2000; Petersen 2002]⁴⁰
- (9) [Dechow et al. 1996; Beasley 1996; Dechow et al. 2011]⁴¹
- (10) [Dechow et al. 1996; Summers and Sweeney 1998; Beneish 1999; Dechow et al. 2011]⁴²

³⁹ See Hogan et al. 2008 for a review.

⁴⁰ See O'Fallon and Butterfield 2005 and Martin and Cullen 2006 for a review.

⁴¹ See Hogan et al. 2008 for a review.

⁴² Ibid.

FIGURE 2
Ethical climate illustration

Panel A: Theoretical ethical climates (Victor and Cullen 1987, 1988), which is reproduced Figure 1 from Martin and Cullen 2006

		<i>Locus of Analysis</i>		
		Individual	Local	Cosmopolitan
<i>Ethical Theory</i>	Egoism	Self-Interest	Company Profit	Efficiency
	Benevolence	Friendship	Team Interest	Social Responsibility
	Principle	Personal Morality	Company Rules and Procedure	Laws and Professional Codes

Panel B: Common empirical derivations of ethical climates (Victor and Cullen 1987, 1988), which is reproduced Figure 1 from Martin and Cullen 2006

		<i>Locus of Analysis</i>		
		Individual	Local	Cosmopolitan
<i>Ethical Theory</i>	Egoism	Instrumental		
	Benevolence	Caring		
	Principle	Independence	Rules	Law and Code

Panel C: Empirical derivations of ethical climates based on current study

		<i>Locus of Analysis</i>		
		Individual	Local	Cosmopolitan
<i>Ethical Theory</i>	Egoism	<i>EGOISM</i>		
	Benevolence	<i>BENV-CARING</i>		<i>BENV-SOCIAL</i>
	Principle		<i>PRINCIPLE</i>	

TABLE 1
Survey data selection

Panel A: Sample selection for archival-linked mail survey sample

Description	Observations
STRATEGY score dataset (Bentley et al. 2011)	57,517 firm-year observations
Less: Firms present in AGR score dataset (Price et al. 2011)	(27,380) firm-year observations
Less: Firms prior to calendar year 2008	(27,811) firm observations
Less: Firms inactive in or otherwise not present in Compustat as of fiscal year 2010	(319) firm observations
Total archival-based survey population	2,007 firm observations (calendar year 2008)
Randomly selected survey sample	667 firm observations (33% of archival population)

Panel B: Usable survey sample responses for main analysis

Description	Internet survey	Mail survey	Total surveys
Total survey sample	597	78	675
Less observations with any missing data (listwise deletion)	(13)	(11)	(24)
Less observations with low confidence score in answering business strategy and/or ethical climate and culture questions	(43)	(2)	(45)
Less outlier observations (Mahalanobis distances)	(29)	(0)	(29)
Usable survey sample	512	65	577

TABLE 2
Descriptive statistics

Panel A: Survey demographics

<i>Participant-level</i>	<i>Internet</i> (N=597)	<i>Mail</i> (N=78)	<i>Firm-level</i>	<i>Internet</i> (N=597)	<i>Mail</i> (N=78)
<i>Gender:</i>			<i>Ownership:</i>		
Male	49%	79%	Public	39%	100%
Female	51%	21%	Private	61%	0%
<i>Citizenship:</i>			<i>Voluntary disclosure:</i>		
US	97%	99%	Yes	37%	N/A
Non-US	3%	1%	No	63%	N/A
<i>Age:</i>			<i>Employees:*</i>		
<30	16%	3%	<100	26%	6%
30-39	34%	15%	100-499	17%	19%
40-49	26%	34%	500-999	8%	13%
50-59	19%	36%	1,000-9,999	20%	36%
>59	5%	12%	>10,000	29%	26%
<i>Education:</i>			<i>Annual Revenue:*</i>		
High school degree	1%	0%	<\$1 million	7%	0%
Undergraduate degree	52%	58%	\$1 million-\$99 million	35%	19%
Master degree	46%	38%	\$100 million-\$499 million	9%	22%
Doctorate degree	1%	4%	\$500 million-\$999 million	9%	18%
			\$1 billion-\$9 billion	19%	35%
<i>Company tenure:</i>			>\$10 billion	21%	6%
<1 year	10%	5%	<i>Code of Ethics:</i>		
1-2 years	18%	10%	Yes	73%	96%
3-4 years	17%	16%	No	19%	3%
5-9 years	26%	27%	Unsure	8%	1%
>9 years	29%	42%			
<i>Company position:</i>			<i>Strategy:</i>		
Staff	24%	4%	Reactor	12%	14%
Manager	55%	42%	Prospector	21%	24%
Executive	21%	54%	Analyzer	38%	38%
			Defender	29%	24%
<i>Department:</i>					
Accounting	41%	44%			
Finance	20%	24%			
Management	13%	10%			
Marketing	16%	17%			
Other	10%	5%			

*Since the mail-based survey is linked to public archival data, firm information (e.g., employees, annual revenue and industry classification) was obtained via the archival dataset rather than from the survey instrument.

TABLE 2 (Continued)

Panel B: Industry affiliation

<i>Industry</i>	<i>Reactors</i>		<i>Prospectors</i>		<i>Analyzers</i>		<i>Defenders</i>		<i>Total</i>	
	<i>Internet (N=72)</i>	<i>Mail (N=11)</i>	<i>Internet (N=123)</i>	<i>Mail (N=19)</i>	<i>Internet (N=227)</i>	<i>Mail (N=29)</i>	<i>Internet (N=175)</i>	<i>Mail (N=19)</i>	<i>Internet (N=597)</i>	<i>Mail (N=78)</i>
Business services	11%	0%	11%	0%	8%	0%	9%	0%	10%	0%
Construction, mining & agriculture	6%	9%	4%	0%	3%	14%	5%	5%	4%	8%
Education	7%	0%	2%	0%	2%	0%	7%	0%	4%	0%
Finance	7%	0%	15%	0%	14%	0%	10%	0%	12%	0%
Government	6%	0%	0%	0%	1%	0%	5%	0%	2%	0%
Healthcare	6%	0%	2%	0%	8%	0%	6%	0%	6%	0%
High tech	7%	9%	7%	11%	9%	4%	3%	16%	7%	9%
Insurance	1%	0%	2%	0%	2%	0%	1%	0%	2%	0%
Manufacturing	12%	55%	22%	68%	18%	66%	15%	42%	18%	59%
Media and entertainment	1%	0%	1%	5%	4%	3%	2%	0%	2%	3%
Nonprofit	4%	0%	1%	0%	2%	0%	6%	0%	3%	0%
Pharmaceuticals & biotechnology	0%	0%	2%	0%	2%	0%	1%	11%	1%	3%
Real estate	3%	0%	3%	0%	3%	0%	4%	0%	3%	0%
Transportation, communications & utilities	3%	9%	2%	0%	3%	7%	3%	5%	3%	5%
Wholesale & retail	7%	18%	5%	16%	1%	3%	6%	16%	4%	11%
Other	19%	0%	21%	0%	20%	3%	17%	5%	19%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

TABLE 3

Pearson correlations: Internet-based sample represented above diagonal (n=512) / Archival-linked sample (mail/ applicable Internet) represented below diagonal (n=124)

Variable	<i>REACTOR</i>	<i>PROSPECTOR</i>	<i>ANALYZER</i>	<i>DEFENDER</i>	<i>EGOISM</i>	<i>BENV-CARING</i>	<i>BENV-SOCIAL</i>	<i>PRINCIPLE</i>	<i>ENVIRONMENT</i>	<i>OBEDIENCE</i>	<i>IMPLEMENT/ CODE*</i>	<i>JOB SATISFY</i>	<i>COMMIT 1</i>	<i>COMMIT 2</i>	<i>RELIGIOSITY</i>	<i>EMPLOYEES</i>	<i>REVENUE</i>
<i>REACTOR</i>	1	-0.19	-0.29	-0.23	0.19	-0.18	-0.03	-0.12	-0.20	0.15	-0.08	-0.25	-0.21	-0.25	-0.03	-0.03	-0.08
<i>PROSPECTOR</i>	-0.20	1	-0.41	-0.32	-0.08	0.13	0.18	0.08	0.21	-0.16	0.10	0.13	0.17	0.23	-0.04	0.12	0.16
<i>ANALYZER</i>	-0.34	-0.46	1	-0.50	-0.06	0.07	-0.11	0.07	-0.01	-0.05	0.04	0.02	0.01	0.00	0.04	0.16	0.15
<i>DEFENDER</i>	-0.20	-0.28	-0.46	1	0.00	-0.07	-0.03	-0.06	-0.04	0.09	-0.08	0.04	-0.01	-0.03	0.02	-0.26	-0.26
<i>EGOISM</i>	0.34	-0.27	-0.12	0.13	1	-0.06	-0.06	-0.01	-0.35	0.51	-0.04	-0.36	-0.39	-0.44	0.00	0.09	0.07
<i>BENV-CARING</i>	-0.29	0.26	0.00	-0.03	-0.03	1	0.07	0.03	0.43	-0.13	-0.04	0.44	0.50	0.48	0.15	-0.20	-0.21
<i>BENV-SOCIAL</i>	-0.14	0.20	-0.03	-0.05	-0.07	0.10	1	0.06	0.34	-0.10	0.11	0.26	0.25	0.33	0.07	0.01	0.04
<i>PRINCIPLE</i>	-0.13	-0.04	0.24	-0.15	-0.03	0.04	0.06	1	0.51	0.12	0.31	0.21	0.21	0.32	0.13	0.27	0.28
<i>ENVIRONMENT</i>	-0.45	0.29	0.18	-0.14	-0.49	0.42	0.19	0.41	1	-0.07	0.19	0.58	0.61	0.69	0.11	0.01	0.04
<i>OBEDIENCE</i>	0.11	-0.05	-0.11	-0.10	0.46	0.09	-0.02	-0.04	-0.06	1	-0.04	-0.31	-0.30	-0.29	0.01	-0.02	-0.03
<i>IMPLEMENT/ CODE*</i>	-0.08	0.06	-0.05	0.08	-0.08	-0.03	0.27	0.32	0.09	0.00	1	0.05	0.05	0.11	-0.01	0.40	0.41
<i>JOB SATISFY</i>	-0.41	0.20	0.14	-0.04	-0.30	0.45	0.17	0.31	0.69	-0.23	0.13	1	0.78	0.76	0.13	-0.09	-0.08
<i>COMMIT 1</i>	-0.45	0.28	0.07	-0.01	-0.44	0.40	0.20	0.22	0.67	-0.24	0.14	0.81	1	0.73	0.11	-0.08	-0.07
<i>COMMIT 2</i>	-0.40	0.25	0.11	-0.05	-0.45	0.40	0.26	0.32	0.69	-0.32	0.14	0.77	0.78	1	0.11	-0.04	-0.05
<i>RELIGIOSITY</i>	0.07	0.03	-0.01	-0.08	0.07	0.16	0.04	0.09	0.03	0.01	-0.06	0.09	0.07	0.06	1	-0.02	-0.03
<i>EMPLOYEES</i>	0.09	0.07	0.12	-0.28	-0.05	-0.19	0.07	0.17	-0.07	0.01	0.27	-0.03	0.01	0.01	-0.08	1	0.87
<i>REVENUE</i>	-0.05	0.10	0.18	-0.28	-0.06	-0.05	0.11	0.23	0.07	-0.02	0.26	0.08	0.08	0.10	0.01	0.80	1

Significant correlations ($p < 0.05$) are indicated in bold.

**IMPLEMENT (CODE)* is applicable to the archival-linked (Internet) sample only.

TABLE 4

OLS analysis: Regressing ethical climate dimensions on business strategy, controlling for ethical culture (Hypothesis 1).

Full Internet sample

Dependent Variables: (Ethical climate dimensions)	<i>EGOISM</i>	<i>BENV- CARING</i>	<i>BENV- SOCIAL</i>	<i>PRINCIPLE</i>
	(1)	(2)	(3)	(4)
<i>INTERCEPT</i>	-0.37 (-1.12)	0.91** (2.49)	0.25 (0.66)	-0.48 (-1.42)
<i>Business strategy:</i>				
REACTOR	0.20** (1.73)	-0.36*** (-2.95)	0.18 (1.42)	-0.07 (-0.59)
PROSPECTOR	0.16** (1.75)	0.00 (0.01)	0.31*** (3.05)	-0.08 (-0.84)
DEFENDER	0.00 (0.05)	-0.29*** (-3.10)	0.06 (0.65)	-0.00 (-0.02)
<i>Ethical culture:</i>				
ENVIRONMENT	-0.29*** (-7.98)	0.38*** (9.38)	0.30*** (7.09)	0.49*** (12.92)
OBEDIENCE	0.52*** (12.97)	-0.11** (-2.47)	-0.12*** (-2.64)	0.20*** (4.84)
<i>Firm-level controls:</i>				
CODE	-0.03 (-0.36)	-0.09 (-0.93)	0.07 (0.75)	0.27*** (3.08)
EMPLOYEES	0.04 (1.56)	-0.10*** (-3.44)	0.02 (0.69)	0.09*** (3.31)
PUBLIC	0.08 (0.94)	-0.11 (-1.19)	-0.11 (-1.16)	0.06 (0.74)
Participant-level controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	512	512	512	512
Adj R-squared	0.37	0.29	0.16	0.38

Note: Coefficient values (t-statistics) are shown.***, **, * indicate statistical significance at the 1%, 5% and 10% levels, respectively two-tailed (one-tailed if predicted). The dependent variables represent different ethical climate dimensions based on factor scores (see Appendix 2 for factor loadings). Industry fixed effects are based on the industry categories shown in Table 2, panel B. Refer to Appendix 1 for variable definitions.

TABLE 5

OLS analysis: Regressing ethical climate, business strategy and ethical culture on the risk of financial misstatement (*AGR*), controlling for opportunity and incentive factors (Hypothesis 2).

Archival- linked sample

Dependent Variable:	Predicted Sign	<i>AGR</i>
<i>INTERCEPT</i>	?	49.98*** (2.65)
<i>Ethical climate:</i>		
<i>EGOISM</i>	+	3.94* (1.56)
<i>BENV-CARING</i>	-	-11.68*** (-5.53)
<i>BENV-SOCIAL</i>	-	3.26 (2.21)
<i>PRINCIPLE</i>	-	-2.72* (-1.38)
<i>Business strategy:</i>		
<i>REACTOR</i>	+	-2.69 (-0.51)
<i>PROSPECTOR</i>	+	7.30** (1.77)
<i>DEFENDER</i>	-	5.11 (0.98)
<i>Ethical culture:</i>		
<i>ENVIRONMENT</i>	-	8.41 (4.40)
<i>OBEDIENCE</i>	?	-2.43* (-1.86)
<i>IMPLEMENT</i>	-	-2.94 (-1.28)
<i>Opportunity & Incentive controls:</i>		
<i>ln(ASSETS)</i>	?	5.14*** (7.35)
<i>ROA</i>	-	11.79 (0.71)
<i>LOSS</i>	+	0.30 (0.09)
<i>BTM</i>	-	-7.50*** (-2.90)
<i>SALES GROWTH</i>	?	-0.16* (-1.86)
<i>M&A</i>	+	-6.29 (-1.81)
<i>LEVERAGE</i>	?	27.08*** (3.69)
<i>FINANCING</i>	+	-11.43 (-1.03)
<i>HERF</i>	+	-14.96 (-1.24)
<i>LITIGIOUS</i>	+	2.09 (0.33)
<i>DAP</i>	?	-12.65 (-0.48)
<i>BIGN</i>	-	-24.21*** (-3.25)
<i>DED IO</i>	?	6.29 (0.26)
Participant-level controls		Yes
Year fixed effects		Yes
Observations		296
Adj R-squared		0.27

Note: Coefficient values (t-statistics) are shown with standard errors clustered by firm and industry (industry groups as defined on Ken French's website). ***, **, * indicate statistical significance at the 1%, 5% and 10% levels, respectively, two-tailed (one-tailed if predicted). The dependent variable is an Accounting and Governance (*AGR*) risk measure produced by Audit Integrity which is measured discretely from 0 to 100 (where higher values indicate an increased risk in misreporting). Refer to Appendix 1 for variable definitions.