



The Joint Effect of Ethical Idealism and Trait Skepticism on Auditors' Fraud Detection

Inez G. F. Verwey¹ · Stephen K. Asare²

Received: 15 November 2019 / Accepted: 22 December 2020
© The Author(s), under exclusive licence to Springer Nature B.V. part of Springer Nature 2021

Abstract

Although regulators have identified ethical lapses as a key factor contributing to auditors' failure to detect their clients' fraudulent financial reporting (fraud), research using ethical theory to examine auditors' fraud detection remains limited. We provide evidence on the joint effect of ethical idealism and trait skepticism on auditors' fraud judgments. Ethical idealism reflects an individual's concern for the welfare of others while trait skepticism reflects an individual's disposition to validating a proposition. Forsyth (J Pers Soc Psychol 39:175–184, 1980) theorizes that there is an association between ethical idealism and tolerance for deception. Drawing on that insight, we posit that ethical idealism and trait skepticism have a complementary effect on auditors' fraud planning performance. This is because the former determines an auditor's tolerance for allowing a client to get away with an ethically questionable act while the latter is important in determining how evidence is generally sought and evaluated. We used the Forsyth (1980) ethical position questionnaire to measure ethical idealism and the Hurr (Auditing: A J Pract Theory 29(1):149–171, 2010) scale to measure trait skepticism. Our results indicate that there is a significant positive association between trait skepticism and the number of effective audit procedures but only for auditors who have high ethical idealism. The results highlight the importance of measuring and controlling for the effects of these traits when evaluating fraud detection performance. The paper also contributes by showing that an ethics theory can generate additional understanding of and insights into an important accounting phenomenon.

Keywords Audit planning · Fraud detection · Trait skepticism · Ethical position

JEL Classification M42 · C91 · D91

Introduction

Fraudulent financial reporting (fraud) has severe consequences for various stakeholders in the financial reporting space (Beasley et al. 2010). As such, auditors are required to plan their audits to provide reasonable assurance of detecting fraud (PCAOB 2010, 2011; IAASB 2010a). Nevertheless, prior research shows that auditors rarely detect fraud even though its incidence continues to grow (Nallareddy and Ogneva 2017). Effective evaluation of fraud requires evidence that an intentional misstatement occurred and

an assessment of the consequences of the potential fraud. While determining whether an intentional misstatement has occurred is ultimately an evidential question, evaluating the consequences of a potential fraud requires an ethical judgment. The latter judgment is further complicated because the consequences for various stakeholders may vary, requiring balancing these competing interests. In particular, an auditor who suspects questionable accounting must choose between challenging or not challenging the accounts. The former choice potentially harms his fee-paying client while the later choice potentially harms faceless investors. It has been suggested that this tension may unconsciously tip the scale in favor of not challenging the accounts (Bazerman et al. 2002).

Regulators have identified ethical lapses as a key factor contributing to auditors' failure to detect their clients' fraud (e.g., SEC 2019; FRC 2019; Arirail and Crumbley 2019). Prior research has also identified ethical and skeptical traits

✉ Inez G. F. Verwey
i.verwey@nyenrode.nl

¹ Nyenrode Business Universiteit, P.O. Box 130,
3620 AC Breukelen, The Netherlands

² University of Florida, Gainesville, USA

as potential determinants of professional skepticism, defined as “audit judgments and decisions that reflect a heightened assessment of the risk that an assertion is incorrect” (Nelson 2009). Several studies have used skeptical trait theory as a lens for examining auditors’ fraud planning judgments (e.g., Popova 2013; Carpenter and Reimers 2013; Quadackers et al. 2014). However, there have been limited attempts to apply ethical trait theory to gain insights into auditors’ fraud planning judgments, notwithstanding long-standing theorizing suggesting a possible association between ethical idealism and tolerance for deception (Forsyth 1980).

The purpose of this research is to examine the joint effect of auditors’ ethical idealism and trait skepticism on their fraud planning judgments. Ethical idealism reflects an individual’s attitudes toward the consequences of an action and how the consequences affect the welfare of others while trait skepticism relates to an individual’s disposition to acquiring evidence before concluding that an assertion is fairly stated (Forsyth 1980; Nelson 2009).

The study is important for several reasons. First, prior research and professional standards have identified the importance of auditor traits as potential determinants of professional skepticism, which is assumed to be a key determinant of audit quality (e.g., Nelson and Tan 2005; Nelson 2009; AICPA 2016a; IAASB 2016). The joint examination of ethical idealism and trait skepticism could yield additional insights into the cross-sectional variation in auditors’ fraud planning performance. It also allows us to gauge the explanatory power of the ethical position theory in a practice setting, with a history of ethical lapses (Greenwood and Freeman 2018). Second, because the accounting profession has come under criticisms for ethical lapses in a variety of financial scandals, examining how ethical traits, individually and jointly with the trait skepticism, affect fraud planning judgments is timely and can shed insights that are valuable to regulators and researchers (see, e.g., SEC 2019). Third, understanding how ethical and skeptical traits affect fraud planning judgments offer some potential for screening employees on these traits for training, task assignment and team formation. Fourth, while more studies are now beginning to focus on the influence of trait skepticism on audit judgments, fewer studies examine how it interacts with other traits, such as ethical idealism to influence audit quality (Hurt et al. 2013; Robinson et al. 2018). Given that auditors are likely to bring multi-traits to audit tasks, such a joint focus is an important step in developing a complete understanding of traits’ influence on audit judgments. Fifth, considering that prior research on the effect of trait skepticism on fraud detection performance has produced mixed results, the current study can provide some insight into whether the effect of trait skepticism can be augmented or curtailed by the auditor’s ethical idealism. To our knowledge, this is the first empirical study that examines the joint effect of the two

traits on fraud planning judgments. By focusing on skepticism and ethical idealism, the study contributes to the literature in both accounting and business ethics.

It seems intuitive that an individual’s ethical and skeptical dispositions will affect her fraud planning performance. Ethical idealism is important in that it determines an auditor’s tolerance for allowing a client to get away with an ethically questionable act while skeptical disposition is important in determining how evidence is generally sought and evaluated. For instance, controlling for skepticism, auditors’ evidential appetite may be influenced by their concern for the welfare of others (i.e., ethical idealism). An auditor with a relatively high ethical idealism may want more evidence to assess the consequence of an action while one with lower ethical idealism may decide on relatively less evidence. Similarly, controlling for ethical idealism, auditors’ evidential appetite may be influenced by their innate skepticism. In effect, ethical idealism and trait skepticism may independently lead to a demand for more evidence. Thus, the two traits can affect evidential acquisition and evaluation albeit through different mechanisms, providing additional grounds for examining their joint effect.

Individual differences in ethical positions are believed to play a key role in ethical judgment of business practices (Forsyth 1980). Ethics position theory classifies reaction to morally challenging situation along two dimensions that emphasize concern for principles (relativism) and outcomes (idealism) (Forsyth 1980; Forsyth and O’Boyle 2011; Forsyth and O’Boyle 2013). Idealism refers to one’s emphasis on consequences as guides for determining wrong and right. Highly idealistic individuals assume that desirable consequences can, with the right action, always be obtained (Forsyth 1980). Those who are less idealistic assume that in some cases harm is unavoidable and, in such cases, one must choose between the lesser of two evils (Forsyth 1980, 1981, 1992).

Prior research suggests that ethical position does not only affect an employee’s propensity to engage in deviant behavior but also her tolerance of such behavior from others and the likelihood of reporting same to management (Henle et al. 2005). A few studies have identified the importance of auditors’ personal ethical orientation, as conceptualized by Forsyth (1980), in understanding their fraud detection performance (e.g., Shaub et al. 1993; Strand and Lancaster 2001; Norman et al. 2008; IAASB 2016). Thus, auditors who are less idealistic may therefore be less likely to question ethical choices that they perceive can produce good outcomes for some stakeholders, such as the client, even if others, such as investors, are harmed by the choices. For instance, less idealistic auditors are more likely to waive a questionable accounting practice that has positive consequences for some stakeholders while more idealistic auditors will be less likely to compromise on consequences (see, e.g., Johnson et al.

2012). The considerable leeway to account for business transactions facilitates such waiving (Bazerman et al. 2002).

While theory suggests that trait skepticism may trigger different audit responses holding constant the fraud scheme, empirical evidence on the association is decidedly mixed (e.g., Hurtt 2010; Hammersley 2011; Carpenter and Reimers 2013; Popova 2013; Quadackers et al. 2014; Fullerton and Durtschi 2004; Carpenter and Reimers 2013; Quadackers et al. 2014; Popova 2013; Peytecheva 2014). The mixed findings raise the possibility that the effect of trait skepticism on audit judgments may depend on other factors, such as ethical idealism (see also, Eutsler et al. 2018; Guénin-Paracini et al. 2015; Nolder and Kadous 2018).

Drawing on the underlying psychology and accounting literatures, we hypothesize that the effect of trait skepticism on the number of effective fraud audit procedures selected by auditors depends on the extent of ethical idealism. To test the hypothesis, 86 Dutch auditors evaluated the comprehensive case developed by Asare and Wright (2004), which was based on an actual company whose management had employed an innovative marketing strategy to deliberately and materially overstate revenue. In the task, auditors were asked to plan audit procedures, which were evaluated against a benchmark suggested by prior research and augmented by a panel of forensic experts (Asare and Wright 2004; Hoffman and Zimbelman 2009).

We use the Ethical Position Questionnaire (EPQ) (Forsyth 1980, 1992) and Hurtt scale (Hurtt 2010; Hurtt et al. 2013) to measure participants' ethical idealism and trait skepticism, respectively. Thus, each participant completed the EPQ and Hurtt scale, the scores on which served as the measured independent variables. The dependent variable was the number of planned procedures that conform to the developed benchmark.

We find, consistent with our hypothesis, that ethical idealism interacts with trait skepticism to influence the number of effective fraud audit procedures. Specifically, we find a significant positive association between trait skepticism and number of effective procedures for auditors who score 1 standard deviation above the mean of ethical idealism. However, the association between trait skepticism and number of effective procedures for auditors who score 1 standard deviation below the mean of ethical idealism is not significant. Similarly, there is a significant positive association between ethical idealism and the number of effective procedures for auditors who score 1 standard deviation above the mean of trait skepticism. However, the association between ethical idealism and number of effective procedures for auditors who score 1 standard deviation below the mean of trait skepticism is not significant.

We contribute to the literature in accounting and business ethics by showing that ethical idealism can augment the effect of trait skepticism in fraud planning judgments.

We highlight that ethical idealism is important to evaluating the consequences of fraud while trait skepticism is important to determining the fairness of financial statement assertions, thus making both traits important to planning fraud judgments. Our results suggest that firms may benefit from investing in programs that allow them to measure the ethical and skeptical dispositions of their auditors and to strategically match auditors to higher fraud risk engagements. Whether firms are open to investing in such programs is, however, a different question. Fraud imposes a huge cost on organizations and society and are rarely detected (Hammersley et al. 2010; Free and Murphy 2015; ACFE 2016). As such, evidence on whether auditors' traits affect fraud detection is important from both a theoretical and practical perspective. Our results also show that ethical position theory is a viable theoretical approach that can generate new insights into auditors' fraud detection performance.

We review relevant literature on fraud detection, usefulness of studying traits in audit settings, ethical position, and professional skepticism in the next section. This section is followed by a description of the research method. The penultimate section presents the results followed by concluding comments.

Theory and Hypotheses

The Audit Process

Auditors' value proposition is to provide reasonable assurance that the audited financial statements are free from material misstatements. Professional standards identify several steps that auditors should take when evaluating whether financial statements are free of material fraud, including (i) identifying risks that may result in fraud; (ii) assessing the identified risks after taking into account an evaluation of the entity's programs and controls; (iii) responding to the results of the assessment; (iv) evaluating audit evidence that results from the response; (v) communicating about fraud to management; and (vi) taking the findings from the preceding activities into account when reporting on the financial statements (IAASB 2010b (ISA 240); PCAOB 2015 (AS 2401); AICPA 2016b (AU-C Section 240)).

Prior research suggests that task features (e.g., Asare and Wright 2004; Hoffman and Zimbelman 2012), incentives (e.g., Asare et al. 2015), training, knowledge, and experience (e.g., Hammersley 2011; Hoffman and Zimbelman 2009, 2012), social interaction with the client (Guénin-Paracini et al. 2014, 2015) and individual characteristics (Nelson and Tan 2005; Hammersley 2011) affect fraud detection performance. Our study focuses on individual characteristics that are theoretically linked to assessing consequences or evidential attitude and that can therefore affect audit quality

(e.g., Nelson and Tan 2005; Hurtt et al. 2012; PCAOB 2012; AICPA 2016a; IAASB 2016).

Usefulness of Studying Traits in Audit Settings

Nelson and Tan (2005) suggest four principles to evaluate the usefulness of studies involving individual characteristics: (1) relevance of individual characteristic to the issue; (2) presence of theory linking the individual characteristic to the task at hand; (3) validity and reliability of the individual characteristic construct; and (4) ease with which the individual characteristics can be captured in practice. Undoubtedly, auditors' ethical and skeptical traits are relevant to fraud planning considering their potential impact on evidential activities (Free and Murphy 2015; Guénin-Paracini et al. 2014, 2015; Maroney and McDevitt 2008). Our study meets the second principle in that there are theories that link ethical idealism and trait skepticism to fraud planning performance. Both ethical idealism and trait skepticism have been studied in psychology and accounting, thus their validity as constructs and reliability in their measurement are high (e.g., Nelson 2009; Hurtt 2010; Hurtt et al. 2012, 2013; Eutsler et al. 2018; Nolder and Kadous 2018; Schlenker and Forsyth 1977; Forsyth 1992; Norman et al. 2008; Johnson et al. 2012). While there is no evidence that audit firms currently use these constructs in their recruiting or assigning practices, sustained evidence on their importance might lead firms to consider innovative ways of measuring and using them. Moreover, examining the joint effect of ethical idealism and trait skepticism sheds light on whether the latter can compensate for the absence of the former.

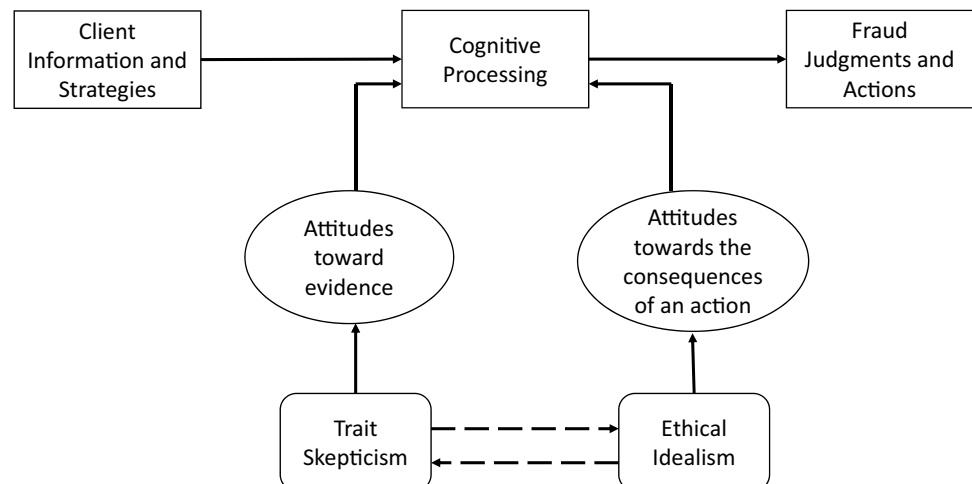
The Joint Effect of Ethical Idealism and Trait Skepticism on Fraud Planning Judgments

Conceptual Framework

Nelson (2009) provides a model that highlights that auditors' traits, knowledge and incentives all combine to produce judgment that reflects professional skepticism. Professional skepticism is an approach to evidential activities, including gathering and evaluation, that reflects a heightened assessment of the risk that a financial statement assertion is misstated, conditional on the available information (Cushing 2000; Nelson 2009; Hurtt 2010; Hurtt et al. 2012, 2013; Peytcheva 2014; Quadackers et al. 2014). It is revealed by auditors' judgment and decisions and has long been used as an attribute of auditor performance. Focusing on traits, Nelson (2009) suggests that ethical predisposition and trait skepticism are related to professional skepticism in judgment and action (Nelson 2009). Trait skepticism is therefore distinguished from professional skepticism in that the former is one of many inputs to the judgment process that manifests in the latter (see Nelson 2009, link 4).

Our conceptual formulation of the fraud planning task and how it is likely to be affected by traits draws on Nelson's model and is presented in Fig. 1. We rely on Nelson's model because it accommodates traits relevant to both ethical and evidential considerations and how they affect skeptical judgment and actions, which are important determinants of fraud detection performance. Consistent with Nelson (2009), evidential input triggers the judgment process. The input is characterized as client information and strategies (CIS) and represents all the evidence that the auditors has gathered up to the point of making fraud judgments and decisions. Thus, this includes obtaining an understanding of the client, evaluating the client's strategic risks, performing some basic analytical procedures, prior year's knowledge and the auditor's cumulative audit knowledge and experience with the client.

Fig. 1 Effects of traits on evaluating management fraud



The auditor processes the CIS to make fraud judgments and decisions, which could take the form of modifying audit programs or concluding that fraud has occurred. Our focus is on modifications to the audit programs. We assume that more effective modification reflects more professional skepticism.

Figure 1 also shows that the processing of the CIS is influenced by the auditors' attitude to the consequences of the fraud and predisposition to gather evidence. In turn, the former is influenced by the auditor's ethical idealism and the latter by trait skepticism (Forsyth 1980; Hurr 2010; Hammersley 2011). Auditors' pre-existing knowledge and situational factors, such as incentives, regulatory pressures, and are obviously important influences on cognitive processing but are held constant in this study (see Nelson 2009). Lastly, while we assume that traits are independent of each other, the model raises the possibility that they could influence each other. For instance, an auditor who tends to believe that it is unnecessary or wrong to pursue a cause of action that harms others (high ethical idealism) may, over time, develop a skeptical attitude to achieve his consequential orientations.

Ethical Idealism

Ethical idealism reflects an individual's attitudes toward the consequences of an action and how the consequences affect the welfare of others (Forsyth 1980, 1992; Barnett et al. 1994; Henle et al. 2005). Forsyth (1980) proposes that those who are highly idealistic in their moral orientation insists that one must always avoid harming others, whereas those who are low idealist assume that harm will sometimes be necessary to produce good (Forsyth 1992; Barnett et al. 1994). Highly idealistic persons tend to believe harming others is universally wrong and are committed to avoid harming others, even in cases of situational urgency (Henle et al. 2005). In contrast, those low in idealism recognize that moral actions do not always lead to desirable outcomes and that harm to others is sometimes necessary to produce the greatest good for the greatest number affected by a decision (Forsyth 1992; Barnett et al. 1994; Henle et al. 2005; Achilles 2006). Ethical theory suggests that people who score high on idealism are more likely to feel that deception should be avoided since it has harmful consequences (Forsyth 1980). On the other hand, those who score low on idealism are more likely to feel that deceptions can sometimes be tolerated to produce good outcomes (Forsyth 1980).

Prior empirical research finds that the idealism is associated with ethical decision-making (e.g., Schlenker and Forsyth 1977; Shaub et al. 1993; Barnett et al. 1994; Douglas and Wier 2000; Douglas et al. 2001; Henle et al. 2005). These studies show that ethical predisposition can explain differences in models of individual ethical decision-making in business settings. In these studies, a higher score on idealism is positively related to the recognition of unethical

behavior, such as theft or slack creation behavior (Barnett et al. 1998; Swaidan et al. 2003; Henle et al. 2005). For instance, Barnett et al. (1998) found that respondents with higher scores on idealism rated the actions of marketing professionals as more unethical than did other respondents.

Ethical idealism has also been deployed in the accounting setting to predict earnings management. In particular, Greenfield et al. (2008) find that individuals who are more idealistic are less likely to engage in earning management practices. Further, Greenfield et al. (2008) find that idealists tend to move towards more strongly idealistic position when faced with an opportunity to personally benefit from a business decision. Shaub et al. (1993) investigated whether an auditor's ethical position is related to the ability to recognize ethical issues. They found that individuals who score higher on idealism are more able to identify ethical issues.

Ethical idealism has also been used to explain workplace deviance (Henle et al. 2005). For instance, Henle et al. (2005) find that employees lower in idealism are more likely to act deviantly towards others in the work environment. They also find that employees higher in idealism are less likely to engage in deviant behaviors, targeting their organization, while those in lower in idealism are more likely to do so. The latter finding suggests that misappropriation risks may be related to ethical idealism.

Henle et al. (2005) suggest that employees with particular ethical position may not only be willing to behave deviantly but also may be tolerant of others' deviance and less willing to report these behaviors to management. This suggestion will imply that auditors' ethical idealism will impact how they respond to clients' financial deviance behavior, such as fraud. Similarly, Forsyth (1980) suggests that those who are highly idealistic are likely to condemn deception because it violates the principles of honesty and fairness. Consistent with this notion, Norman et al. (2008) find that idealistic auditors are more sensitive to fraud cues.

Fraud has harmful consequences and it is apposite to study its detection with an ethical position lens (Free and Murphy 2015; ACFE 2016; Forsyth 1980; Henle et al. 2005). The calculus of harm is particularly salient in the fraud detection setting because not challenging the pre-audit reports can be potentially harmful to investors and other stakeholders who rely on the audited statements. The auditor, however, faces an ethical dilemma in that challenging the pre-audit reports potentially harms the fee-paying client, who typically prefers and will argue for a non-fraud report. In some cases, the latter challenge may even be harmful to the auditor.

Ceteris paribus, we expect highly idealistic auditors who believe that it is always unnecessary or wrong to pursue a cause of action that harms to require more evidence before making a fraud judgment. On the other hand, we expect less idealistic auditors, who are more believe that harmful

consequences may sometimes be necessary in a pursuit of a greater good, to require relatively less evidence before making a fraud judgment (Forsyth 1992; Barnett et al. 1994). Thus, we propose that less idealistic auditors will likely make less effective fraud judgments because they tip the balancing scale in favor of their clients (Bazerman et al. 2002).

At first, it may sound puzzling that less idealistic auditors would tip the balance for their clients when the objective cost for other stakeholders is seemingly higher. That is, why would an auditor accept this tradeoff when undetected fraud is more negatively impactful on investors and society as a whole? First, psychology research shows that people are more willing to harm strangers than individuals they know (Bazerman et al. 2002). Second, while the harm done to the client is immediate and certain, the consequences of a clean report when a fraud report is called for is both delayed and uncertain (Bazerman et al. 2002). Third, auditors have economic incentives not to harm fee-paying clients who can fire them when they are unhappy with the audit outcome. Thus, auditors may avoid harming their clients to avoid harming themselves, at least when analyzed with a short-term lens (Johari et al. 2017).

Trait Skepticism

Auditors are required to exercise professional skepticism as part of due professional care (PCAOB 2007a, b, 2008, 2010, 2011, 2012, 2020). Prior empirical research shows that professional skepticism improves audit quality (Carpenter et al. 2011; Hurtt 2010; Hammersley 2011; Eysenck et al. 1987; Eutsler et al. 2018).

Accounting researchers' interest in trait skepticism arises because of its perceived potential to enhance professional skepticism (Nelson 2009; Hurtt 2010). Trait skepticism relates to an individual's disposition to acquiring convincing evidence before concluding that an assertion is fairly stated. There seems to be some conceptual consensus that persons with higher trait skepticism have a tendency, attitude or a mindset that lets them perform relatively more and effective procedures to gather persuasive evidence prior to validating the client's assertion (e.g., Mautz and Sharaf 1961; Beasley et al. 1999; Elliott, 2002). *Ceteris paribus*, we expect auditors with a higher level of trait skepticism to acquire more effective fraud procedures in satisfaction of their in-built evidential appetite.

However, prior empirical research has produced mixed results on whether trait skepticism is associated with effective fraud judgments and decisions. For instance, while Carpenter and Reimers (2013) find that partners' emphasis on professional skepticism positively influences fraud planning judgments, it does not influence trait skepticism as measured by the Hurtt (2010) scale. Further, they find that trait

skepticism did not affect the identification of relevant fraud risk factors, fraud risk assessments or the development of relevant fraud audit procedures. Quadackers et al. (2014) report that trait skepticism is not associated with fraud risk judgments when control environment risk is high. Similarly, other studies have not found an association between trait skepticism and fraud risk assessments (e.g., Popova 2013; Peytecheva 2014).

On the other hand, Popova (2013) finds that auditors with high trait skepticism evaluate evidence more critically and Quadackers et al. (2014) find some support for an association between trait skepticism and fraud judgments when control environment risk is low. Fullerton and Durtschi (2004) found that internal auditors with a higher level of trait skepticism desired more information in relation to fraud symptoms. Quadackers (2009) found that the relationship between alternative skeptical characteristics and skeptical judgments and decisions varies significantly. For instance, interpersonal trust is significantly associated with the likelihood of fraud but only marginally so with evaluating management explanations. Need for control is significantly associated with number of error explanations but in the unexpected direction and locus of control is not significant in any of the models. A few recent studies have also shown that the auditors' social relationship with management can influence the exercise of skeptical judgments (Eutsler et al. 2018; Guénin-Paracini et al. 2015; Nolder and Kadous 2018).

Joint Influence of Idealism and Trait Skepticism

The preceding discussion about ethical and skeptical predispositions raises the question of whether and how auditors' ethical idealism and trait skepticism jointly affect their fraud planning judgments. Ethical position theory suggests that idealism is positively associated with fraud planning performance. Skeptical disposition, on the other hand, suggests that skeptical auditors have a tendency to gather more evidence to address the possibility of misstatements (Glover and Prawitt 2014).

We are unaware of any theory or research that has examined the potential interaction between ethical idealism and trait skepticism. We examine this possibility by considering the potential implications for fraud planning performance arising from the various combinations of ethical idealism and trait skepticism. We summarize the potential implications in Table 1, which crosses ethical idealism (high or low) and trait skepticism (high or low).

Table 1 shows that skeptical idealists require more convincing evidence and strive to produce the best consequence possible. Therefore, the two traits drive their evidential decisions: a questioning mind when testing a client's assertion and a desire to avoid harming others when evaluating the consequences of an incorrect fraud report. The joint effect

Table 1 Taxonomy of approach to deception based on idealism and trait skepticism

	Low skepticism	High skepticism
Low idealism	<p>Trusting pragmatist</p> <p>They are predisposed to require relatively less convincing evidence before concluding that an assertion is fairly stated. They are pragmatic in orientation towards consequences and believe that harmful consequences may sometimes be necessary in a pursuit of a greater good</p> <p>Their fraud planning is likely to be relatively less effective because they are both predisposed to not questioning evidence and tend to be willing to accept the bad consequences of fraud if it produces good</p>	<p>Skeptical pragmatist</p> <p>They are predisposed to require relatively more convincing evidence before concluding that an assertion is fairly stated. They are pragmatic in orientation towards consequences and believe that harmful consequences may sometimes be necessary in a pursuit of a greater good</p> <p>Their fraud planning is likely to be relatively less effective because even though they are predisposed to questioning evidence, they tend to be willing to accept the bad consequences of fraud if it produces good</p>
High idealism	<p>Trusting idealist</p> <p>They are predisposed to require relatively less convincing evidence before concluding that an assertion is fairly stated. They are less pragmatic in orientation towards consequences and believe that it is always unnecessary or wrong to pursue a cause of action that harms others</p> <p>Their fraud planning is likely to be relatively less effective because even though they tend to be less willing to accept the bad consequences of fraud, they are predisposed to not questioning evidence</p>	<p>Skeptical idealist</p> <p>They are predisposed to require relatively more convincing evidence before concluding that an assertion is fairly stated. They are less pragmatic in orientation towards consequences and believe that it is always unnecessary or wrong to pursue a cause of action that harms others</p> <p>Their fraud planning is likely to be relatively more effective because they are both predisposed to questioning evidence and tend to be less willing to accept the bad consequences of fraud</p>

The first two sentences in each cell define the individual's approach to evidence and consequences. The third sentence applies an individual's skeptical and ethical predispositions to the fraud planning task

is for these auditors to seek more effective fraud detection procedures. Thus, we propose that effective fraud planning judgment is characterized by high levels of both trait skepticism and ethical idealism.

On the other hand, the other 3 cells suggest a decline in the relative effectiveness of fraud planning judgments either because of a relatively lower questioning mind when testing the client's assertions or a desire to accept some harm, for some perceived good outcomes, when evaluating the consequences of an incorrect fraud report. For instance, skeptical pragmatists are predisposed to being critical in evaluating the client's assertions. However, their ethical approach tilts towards accepting bad consequences to produce good, which implies that they might be less willing to intensely probe a potential fraud, which produces a good (e.g., to maintain a good relationship with the client), even if there is a risk that an incorrect fraud report can have negative consequences (Bazerman et al. 2002).

Similarly, trusting pragmatists require less evidence for both testing the client's assertions and evaluating the consequences of an incorrect fraud report. They are less likely to engage in effective testing because they are predisposed to accepting the bad consequences of fraud if it produces a good, such as avoiding disagreement with the client as well as being predisposed to be less critical in testing the client's

assertions. Lastly, while trusting idealists strive to produce the best consequence possible, from the ethical judgment perspective, they are predisposed to be less critical in testing the client's assertions. Therefore, while they will probe a potential fraudulent transaction to avoid harming others, their search for evidence tends to be limited by their predisposition to have a less questioning mindset for hypothesis testing purposes.

Considering that effective fraud planning requires a predisposition to doubt the client's assertion and to avoid harmful consequences, we pose the following interaction hypotheses:

H1 The association between either trait skepticism or ethical idealism and the number of effective fraud audit procedures depends on the other trait.

Research Method

Task and Design

The case used was adapted, with permission, from Asare and Wright (2004). The information was based on a real fraud case (SEC 1997) and the case materials had been

deployed in several prior studies (Hoffman and Zimbelman 2009; Boritz et al. 2015; Hammersley 2011; Verwey 2014; Verwey and Asare 2018) and, thus, is reliable for measuring fraud planning judgments. The management of the company fraudulently and materially overstated net income due to improper revenue recognition.

Each participant received background information, which included the company's products and markets, financial statements, revenue cycle, and the marketing program. They then provided risk assessments. Consistent with prior studies, we found no association between fraud risk and planning of effective fraud audit procedures and fraud risk is not discussed further (Zimbelman 1997; Glover et al. 2003; Asare and Wright 2004; Hammersley 2011). Subsequently, they received a standard program comprising of ten audit procedures. Audit firms routinely use standard programs to promote consistency in their staffs' work. The participants' task was to plan audit procedures for the revenue cycle by selecting procedures from the standard audit program or identifying new procedures as they deemed necessary.

The participants completed the case in Dutch to ensure that no language problems occurred in understanding the case. For that reason, the Asare and Wright (2004) case was translated using a translation and back-translation procedure, conducted by two professional translators who were either a native English or a native Dutch speaker. The translators were familiar with audit vocabulary but had no knowledge of the research hypotheses. Subsequent to the translation, the case was piloted by four auditors and three forensic specialists who were either managers or partners. The pilot was run to ensure clarity and completeness of the task. Pilot participants suggested changes to increase comprehension, which were duly incorporated in the case.

Dependent Variable

Each participant's proposed program includes procedures retained on the standard program and any new planned procedures. Participants' proposed program were compared to a benchmark that contained 21 effective tests obtained by using the 13 tests used in (Asare and Wright 2004) augmented with 8 procedures proposed by three experienced forensic partners from the Big-4 forensic departments (Verwey 2014; Verwey and Asare 2018). After three rounds of the Delphi approach, the experienced forensic partners came up with eight additional effective procedures to mitigate the fraud risks in the case, bringing the total benchmark of effective procedures to 21 procedures.

As with prior studies, program effectiveness is defined as the number of procedures listed by participants that are on the benchmark. Thus, the greater the number of effective procedures identified, the more effective the audit plan (consistent with the approach adopted by Asare and Wright

2004; Hammersley et al. 2010; Boritz et al. 2015). This measure is used because in a fraud setting it is unlikely that any single procedure will uncover fraud; thus, the greater the number of effective procedures, the more likely it is that the auditor will detect fraud (Asare and Wright 2004).

Two experts in the auditing field independently coded and evaluated the participants' selected procedures using the benchmark procedures. Each expert has more than 10 years of experience in auditing as well as experience with multiple fraud investigations supervised by forensic accountants. The coders had no knowledge of the research hypotheses. They were only provided with the descriptions of the 21 effective procedures. The initial level of inter-coder agreement was 83%. Inter-coder disagreement was resolved by subsequent discussion between the two coders.

Questionnaires

Each participant was required to complete a questionnaire after completing the revenue task. The questionnaire contained questions that allowed us to measure the participant's ethical idealism (Forsyth's Ethical Position Questionnaire) and level of trait (Hurt Scale). To control for order effects, the questions within each scale as well as the order of the two scales were randomly assigned to the participants.

The EPQ scale consists of 20 items (Forsyth 1980, 1992). We focused on the first 10 items that measure ethical idealism. Responses to each question are elicited on a 5-point scale. Thus, the maximum score that could be achieved is 50. The EPQ asks individuals to indicate their level of agreement with items that vary in terms of idealism, with the low point of the scale indicating complete disagreement and the high point indicating complete agreement (Forsyth 1980). Thus, higher scores indicate higher ethical idealism. The ethical idealism scale measures one's perspectives on positive and negative consequences with items such as, "a person should make certain that their actions never intentionally harm another even to a small degree." Overall, high scorers on the ethical idealism scale more strongly endorse items that reflect a fundamental concern for the welfare of others. (Forsyth 1980; Forsyth et al. 2008). The advantage of the EPQ is that the ethical idealism of an auditor can be measured reliably as this scale has been shown to be valid in prior audit research (e.g., Schlenker and Forsyth 1977; Shaub et al. 1993; Barnett et al. 1994; Douglas and Wier 2000; Douglas et al. 2001; Henle et al. 2005). The use of the EPQ is also preferred to an assessment based on directly measuring participants' commitment to the Profession's Code of Ethics. The direct approach is more vulnerable to socially desired answers as auditors would be reluctant to provide responses that indicate noncompliance with the professional code of ethics.

We used the Hurtt scale to measure trait skepticism because it has been extensively tested and proven to be stable over time in prior studies (Hurtt 2010; Hurtt et al. 2012, 2013; Popova 2013; Quadackers et al. 2014). The scale comprises of 30 questions designed to measure six individual characteristics: a questioning mind, suspension of judgment, need to search for knowledge, interpersonal understanding, self-confidence, and self-determination. Responses to each question are elicited on a 6-point scale. Thus, the maximum score that could be achieved is 180. Finally, participants also provided demographic information about their gender, age, audit firm, and experience in auditing.

Participants and Task Administration

The participants were 86 public auditors from 12 different audit firms who had agreed to participate in the study after being contacted by their co-workers who were all in a final phase of their accountancy study (Master of Accountancy) at a University in the Netherlands. The participants conducted the study in presence of the researcher or a student who was instructed and trained by the researcher. Fifty-five auditors worked at a Big-4 firm and 31 auditors worked at a Non-Big-4 firm. The auditors from the Big-4 firms were comprised of 29 managers, 13 senior managers, and 13 partners. Those from the Non-Big-4 firms comprised of 14 managers, 11 senior managers, and 6 partners. The auditors are all Register Accountants (RA, the Dutch equivalent of the Certified Public Accountant (CPA) in USA or Chartered Accountant (CA) in UK). The participants had a mean (standard deviation) age of 36.50 (8.033) years and had a mean (standard deviation) audit experience of 147.57 (108.297) months. There were 69 males and 17 females. Table 2 summarizes the participants' profile.

Table 2 Participants' profile

Number of auditors participating in study	86
Number of auditors from Big-4 firms	55 (13 partners, 13 senior managers and 29 managers)
Number of auditors from Non-Big-4 firms	31 (6 partners, 11 senior managers and 12 managers)
Mean (standard deviation) months of auditing experience	147.57 (108.297)
Mean (standard deviation) age in years	36.5 (8.033)
Number of males	69
Number of females	17

The demographic variables gender and firm (Big-4 v. Non-Big-4) are not significantly correlated with the independent variables. The variable age is significantly correlated with experience [Spearman's $Rho = 0.731$ ($p < 0.001$)]. The university ethics board approved the participants' participation in the study. Participants were guaranteed anonymity and participation was on a voluntary basis. The study was conducted under controlled conditions in the presence of either one of the researchers or a firm representative who had been trained on how to administer the study.

Results

Descriptive Statistics

Table 3 provides descriptive statistics regarding the mean of the research variables. The mean (standard deviation) number of effective audit procedures planned is 5.43 (1.046). The mean (standard deviation) score of idealism is 32.93 (5.228). Since the neutral point of the ethical idealism scale is 30 (scores range from 10 to 50), auditors generally appear to believe that morally "right" behavior leads to positive consequence. Cronbach α of 0.791 shows that the ethical idealism scale is reliable (Nunnally 1978; DeVellis 1991). The mean (standard deviation) score of professional skepticism is 132.86 (9.740) which is higher than the theoretical midpoint of the scale and comparable to the 138.6 (12.6) for the auditors in Hurtt (2010). The Cronbach α for the Hurtt scale is 0.817. Finally, idealism and trait skepticism are separate constructs as evidenced by the low correlations (Spearman's $\rho = 0.225$, $p = 0.037$) between the two constructs and the low Cronbach α (0.365) of the two scales.

Table 3 Descriptive statistics on idealism, trait skepticism, and control variables

Descriptive statistics ($n = 86$)	
Mean (standard deviation) effective procedures planned	5.43 (1.046)
Mean (standard deviation) idealism*	32.93 (5.228)
Mean (standard deviation) level of trait skepticism**	132.86 (9.740)
Mean (SD) audit experience (in months)	147.57 (108.297)

*Idealism is measured by 10 items on a 5-point Likert scale. Higher scores on idealism correspond to higher belief that desirable consequences can, with the right action, always be obtained. Cronbach's α for Idealism = 0.791

**Trait Skepticism is measured by 30 items on a 6-point Likert scale. Higher scores on trait skepticism correspond to a predisposition to critical assessment of evidence. Cronbach's α for Trait Skepticism = 0.817

Hypothesis Testing

The research hypothesis proposes an interaction between trait skepticism and idealism on the number of effective fraud detection procedures. We test this hypothesis by regressing the number of effective procedures identified by each participant on ethical idealism, trait skepticism and their interaction. We included each participant's audit experience as a control variable. For the purposes of testing the interaction, we center ethical idealism and trait skepticism by subtracting their respective means from each participant's scores. The interaction term is the product of the relevant-centered variables (Aiken and West 1991; Pedhazur 1997). The regression results are presented in Table 4.

There is a significant effect for trait skepticism ($t_{df=1}$, $\beta=0.252$, 1-tailed $p=0.014$) in the expected direction. However, the main effect for idealism is not significant ($t_{df=1}$, $\beta=0.127$, 1-tailed $p=0.126$). The control variable is also significant ($t_{df=1}$, $\beta=-0.203$, 1-tailed $p=0.038$). Using participants' age, rather than their audit experience, as the control variable did not qualitatively affect the main results, except that age is marginally significant ($p=0.063$, 1-tailed). Neither firm nor gender are significant as control variables nor affect the results.

Notably, there is an interaction between idealism and trait skepticism ($t_{df=1}$, $\beta=0.190$, 1-tailed $p=0.043$) suggesting that the coefficients on ethical idealism and trait skepticism do not represent their unique effect on the number of effective fraud audit procedures. Rather, the presence of the significant interaction indicates that the effect of either ethical idealism or trait skepticism on the number of fraud effective procedures is different at different values of the other trait variable.

We performed follow up analysis by obtaining simple regression lines for ethical idealism at a standard deviation above and below the mean of trait skepticism; and for trait skepticism at a standard deviation above and below the mean of ethical idealism (see, Aiken and West 1991; Pedhazur 1997). Figure 2 provides a visual display of the interaction effect. It can be seen that for high ethical idealists (i.e., the dotted line), there appears to be a positive relationship between trait skepticism and the number of effective procedures. On the other hand, for low ethical idealists (the solid line), there appears to be no relationship between trait skepticism and the number of effective procedures.

We use a simple slope analysis to examine the significance of the observed patterns in Fig. 2. The untabulated analysis shows that there is a significant positive association between trait skepticism and number of effective procedures for auditors who score 1 standard deviation above the mean of ethical idealism ($t_{df=1}$, $\beta=0.441$, 1-tailed $p=0.003$). However, the association between trait skepticism and number of effective procedures for auditors who score 1 standard deviation below the mean of ethical idealism is not significant ($t_{df=1}$, $\beta=0.063$, 1-tailed $p=0.384$). Similarly, there is a significant positive association between ethical idealism and the number of effective procedures for auditors who score 1 standard deviation above the mean of trait skepticism ($t_{df=1}$, $\beta=0.317$, 1-tailed $p=0.032$). However, the association between ethical idealism and number of effective procedures for auditors who score 1 standard deviation below the mean of trait skepticism is not significant ($t_{df=1}$, $\beta=-0.062$, 1-tailed $p=0.331$). Lastly, as reported in Table 4, the overall interaction model is significant ($F_{4,81}=2.701$, $p=0.036$). By way of contrast, a regression model without the interaction term does not appear to fit the data ($F_{3,82}=2.532$, $p=0.063$).

Table 4 Regression of planned audit procedures on idealism and trait skepticism

	Unstandardized coefficients	Standard error	Standardized coefficients (β)	<i>t</i> test	Df	<i>p</i> value (one-tailed)
Constant	5.668	0.190		29.762		0.000
Idealism (IDE) ^a	0.026	0.022	0.127	1.152	1	0.126
Trait Skepticism (TS) ^b	0.027	0.012	0.252	2.244	1	0.014
IDE * TS	0.004	0.002	0.190	1.738	1	0.043
Experience ^c	-0.002	0.001	-0.203	-1.797	1	0.038
Regression				2.701 ^d	4	0.036
Residual					81	
Total					85	
Adjusted R^2	0.074					

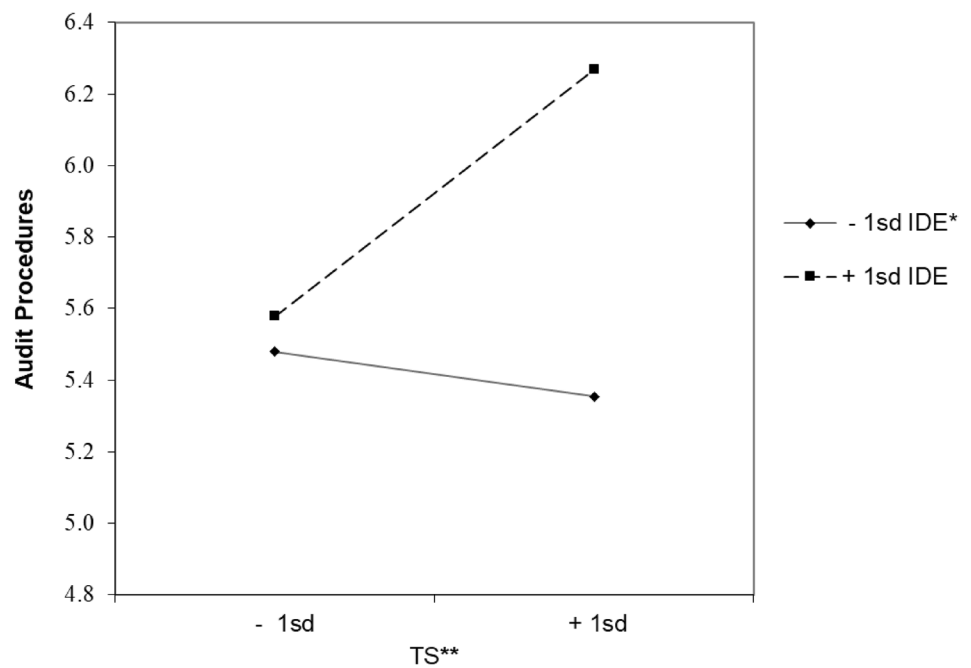
^aIdealism (IDE) is measured by 10 items on a 5-point Likert scale. The score is centralized to reduce multicollinearity between IDE and IDE*TS

^bTrait Skepticism (TS) is measured by 30 items on a 6-point Likert scale. The score is centralized to reduce multicollinearity between TS and IDE*TS

^cExperience is a control variable that measures the participants' audit experience (in months)

^d F -ratio of the regression model

Fig. 2 Interaction effect between Idealism and Trait Skepticism



Notes:

* Idealism (IDE) is measured by 10 items on a 5-point Likert scale. The score is centralized to reduce multicollinearity between IDE and IDE*TS.

** Trait Skepticism (TS) is measured by 30 items on a 6-point Likert scale. The score is centralized to reduce multicollinearity between TS and IDE*TS.

Taken together, the simple slope analysis suggests that the effect of trait skepticism on the number of effective audit procedures depends on the extent of ethical idealism. For auditors with high ethical idealism, there is a positive relationship between trait skepticism and the number of effective audit procedures. However, for auditors with low ethical idealism, there is no relationship between trait skepticism and the number of effective audit procedures. Similarly, for auditors with high trait skepticism, there is a positive relationship between ethical idealism and the number of effective audit procedures. However, for auditors with low trait skepticism, there is no relationship between ethical idealism and the number of effective audit procedures. In effect, high trait skepticism (high idealism) does not compensate low idealism (low trait skepticism). In terms of Table 1, skeptical idealists are likely to be most effective in fraud planning judgments.

Conclusions and Discussion

This study leverages insights from the ethical position theory in combination with the accounting literature on trait skepticism to increase understanding of how traits affect auditors' fraud planning judgments. Considering that fraud planning judgments require both assertions testing, which conceivably

is partly driven by trait skepticism, and evaluation of the consequences of the potential fraud, which we conceptualize as related to ethical idealism, we have proposed and found that additional insights into fraud planning performance could be garnered by examining the two traits jointly.

It is important to understand the role of auditors' ethical position because fraud detection involves the evaluation of the consequences of an incorrect fraud report on various stakeholders. This is a classic ethical dilemma. Ethics research highlights the importance of understanding the degree to which an action's consequences should influence judgment (Forsythe 1980, 1981, 1992). Thus, it is reasonable to expect an association between auditors' ethical idealism and their fraud planning judgments. Professional standards and prior research have appositely focused on skepticism since an auditor's presumption of the validity of client's assertions likely affects evidential gathering, with a more skeptical presumption warranting the acquisition of more evidence (Nelson 2009). To the extent that personality traits affect fraud planning judgments, it is, therefore, important and of interest to examine how the two traits interactively affect an auditor's evaluation of a client's attempted fraudulent financial reporting (fraud).

Our primary finding is that the association of trait skepticism and the effectiveness of fraud planning judgments depends on the level of ethical idealism. Specifically, there

is a significant positive association between trait skepticism and number of effective procedures but only for auditors who score 1 standard deviation above the mean of idealism. Similarly, there is a significant positive association between idealism and number of effective procedures but only for auditors who score 1 standard deviation above the mean of trait skepticism. In other words, high ethical idealism improves fraud planning judgments but only for highly skeptical auditors. Similarly, high trait skepticism improves fraud planning judgments but only highly idealist auditors. This may explain why prior research, which has not controlled for ethical position, has produced mixed findings on the effect of trait skepticism.

Our results support the contention that auditors differ in their ethical philosophy, which can affect their fraud planning judgments. We also find that our participants are highly idealistic suggesting that, on average, auditors are more likely to assume that desirable consequences can, with the right action, always be obtained, a trait which when coupled with higher trait skepticism enhances fraud planning judgments.

Our results have practical implications. For instance, accounting firms may measure the ethical and skeptical predispositions of their auditors and assign skeptical idealists to the high-risk engagements. The challenge for public accounting firms will be to identify such skeptical idealists and assign them to higher fraud risk engagements. Recent improvements in instruments for measuring both ethical idealism and trait skepticism provide an opportunity for firms to strategically benefit from implementing research findings on traits and audit quality. Alternatively, training and other mechanisms can be employed to sensitize other auditors to risk. Since professional judgment is influenced by both trait and situational factors, knowledge of auditors' traits can be used to trigger situational factors that compensate for any "traits-deficit." Likewise, engagement teams may be formed that draw on the knowledge of auditors' traits to achieve diversity of personality. Whether firms are willing to invest in tools for measuring traits and the ethical issues that arise from such usage is, however, beyond the scope of this paper.

Our results suggest several avenues for future research. For instance, future research may be designed to more conclusively test the association between personality traits and audit program judgments related to evaluating misstatements and intent to deceive. A second avenue for future research is to examine the circumstances or situations that are associated with rejection of moral principles. In other words, how do situational factors interact with traits to influence audit quality and ethical responses? For instance, how does client pressure or financial incentives affect the decision to reject moral principles? How does the ongoing relationship between auditors and their clients affect the assessment of consequences of fraud planning and reporting? On the other

hand, can firms emplace training and other activities that allow auditors to get insights into their traits, thereby creating awareness of when they are likely to over-audit or under-audit? For instance, can auditors who have low trait skepticism or ethical idealism be trained (see, Hudson and Fraley 2015)? It is known that cultures differ widely in their moral practices (Forsyth et al. 2008; Hunt and Vitell 1986). Thus, to the extent that culture is related to ethical position, future research should examine the extent to which our results hold in different cultures, especially in cultures where auditors are, on average, lowly idealistic.

Our results highlight the potential importance of traits in fraud planning and suggest that firms may benefit from understanding the ethical and skeptical dispositions of their auditors. Further, our results highlight that ethical position and trait skepticism are not compensatory but are both needed for effective fraud performance. Our results also highlight the importance of placing more emphasis on moral philosophy. We did not specifically address the assessment of management's intent. Yet, it is a crucial element of fraud and central to its detection. Thus, this is an important avenue for future research to explore, dwelling on the association between ethical idealism and judging intent.

While not the main focus of our study, our results reveal a negative association between auditing experience and fraud planning. This result is counterintuitive and requires exploring by future research. It may suggest that auditors' experience with fraud does not occur with enough regularity to allow them to learn from it, potentially leading to atrophy in fraud planning skills over time. Prior research on various tasks suggests that experience generally improves performance (Nelson 2009). However, frauds are perpetrated by a strategic trusted client who has nearly limitless schemes to conceal the act and mislead the auditor (Guénin-Paracini et al. 2014). The uniqueness of fraud not only blocks the typical feedback channels but also potentially devalues the usual experience effect, rendering each fraud encounter a novelty. In other words, the rarity and uniqueness of fraud may make it difficult for experience to matter or even to backfire (Dyck et al. 2010; Nallareddy and Ogneva 2017). Since data on these issues were not gathered in this study, future research on this topic could be of added value and could provide better indications of the conditions under which more audit experience could improve harm or have no effect on auditors' fraud planning judgments.

Future research could also focus on examining other personality traits or characteristics that can influence, either individually or jointly with other situational variables, auditors' fraud planning judgments. For instance, future research could examine the effect of analytical abilities, problem-solving abilities, investigative mind, and how they might interact with ethical idealism and trait skepticism to influence fraud planning judgments. Another limitation is

that this research only focused on the planning phase of an audit. It will be interesting to study the impact of traits on the detection phase of an audit. The interpretation of audit evidence (as a result of the planned audit procedures) is very crucial in fraud detection.

Furthermore, while we focus on individual judgments, the actual practice situation may call for team decisions. Moreover, the fraud may have been perpetrated and concealed by multiple persons in the organization, potentially blocking auditors' access to multiple channels of evidence, thereby, further complicating the auditors' task (Free and Murphy 2015; Guénin-Paracini et al. 2014, 2015). In practice, professionals are compensated for their services. However, we provided no such compensation and there is no way of knowing how that affected their responses. Similarly, we did not incorporate multitasking, budget and deadline pressures that are features of audit practice. These omissions limit the external validity of our findings. But even if the lack of incentives, and other practice features, in the study's setting affected participants' responses, it is unclear why this effect will vary by traits. With the above limitations in mind and taking into account recent findings of auditors' ethical lapses, our study suggests that paying attention to ethical and skeptical traits could potentially add value to the research and practice of fraud detection.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflicts of interest.

Ethical Approval The authors declare that the study has been performed in accordance with the Netherlands Code of Conduct for Academic Practice 2004 (Version 2014). Available at: [https://www.vsnul.nl/files/documenten/Domeinen/Onderzoek/The_Netherlands_Code%20of_Conduct_for_Academic_Practice_2004_\(version2014\).pdf](https://www.vsnul.nl/files/documenten/Domeinen/Onderzoek/The_Netherlands_Code%20of_Conduct_for_Academic_Practice_2004_(version2014).pdf).

Informed Consent Informed consent was obtained from all individual participants included in the study. No identifying information about the participants in the study is included in this article.

References

- Achilles, W. W. (2006). *An experimental analysis of the impact of goal orientation, ethical orientation and personality traits on managers' and accountants' ability to recognize misappropriation of assets*. Doctoral dissertation, Virginia Commonwealth University.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- American Institute of Certified Accountants (AICPA). (2016a). *Code of professional conduct*. Retrieved from <http://pub.aicpa.org/codeofconduct/ethicsresources/et-cod.pdf>.
- American Institute of Certified Accountants (AICPA). (2016b). *AU-C Section 240: Consideration of fraud in a financial statement audit*. Retrieved from <https://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-C-00240.pdf>.
- Arirail, D., & Crumley, L. (2019). PwC and the colonial bank fraud: A perfect storm. *Journal of Forensic and Investigative Accounting*, 11(3), 440–458.
- Asare, S. K., & Wright, A. M. (2004). The effectiveness of alternative risk assessments and program planning tools in a fraud setting. *Contemporary Accounting Research*, 21(2), 325–352.
- Asare, S. K., Wright, A. M., & Zimbleman, M. F. (2015). Challenges facing auditors in detecting financial statement fraud: Insights from fraud investigations. *Journal of Forensic & Investigative Accounting*, 7(2), 63–112.
- Association of Certified Fraud Examiners (ACFE). (2016). *2016 Report to the nations on occupational fraud and abuse*. Austin, TX: ACFE. Retrieved from <https://www.acfe.com/rtn2016/docs/2016-report-to-the-nations.pdf>.
- Barnett, T., Bass, K., & Brown, G. (1994). Ethical ideology and ethical judgment regarding ethical issues in business. *Journal of Business Ethics*, 13, 469–480.
- Barnett, T., Bass, K., Brown, G., & Hebert, F. J. (1998). Ethical ideology and the ethical judgments of marketing professionals. *Journal of Business Ethics*, 17, 715–723.
- Bazerman, M. H., Loewenstein, G., & Moore, D. A. (2002). Why good accountants do bad audits. *Harvard Business Review*, 80(11), 96–102.
- Beasley, M. S., Carcello, J. V., & Hermanson, D. R. (1999). *Fraudulent financial reporting: 1987–1997, An analysis of US public companies*. New York, NY: COSO.
- Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Neal, T. L. (2010). *Fraudulent financial reporting: 1998–2007, An analysis of US public companies*. New York, NY: COSO.
- Boritz, J. E., Kotchetova-Kozloski, N., & Robinson, L. A. (2015). Are fraud specialists relatively effective than auditors at modifying audit programs in the presence of fraud risk? *Accounting Review*, 90(3), 881–915.
- Carpenter, T. D., Durtschi, C., & Gaynor, L. M. (2011). The incremental benefits of a forensic accounting course on skepticism and fraud-related judgments. *Issues in Accounting Education*, 26(1), 1–21.
- Carpenter, T. D., & Reimers, J. L. (2013). Professional skepticism: The effects of a partner's influence and the presence of fraud on auditors' fraud judgments and actions. *Behavioral Research in Accounting*, 25(2), 45–69.
- Cushing, B. E. (2000). Economic analysis of skepticism in an audit setting. In 14th *Symposium on Auditing Research*, edited by I. Solomon and M.E. Peecher, 11–13.
- DeVellis, R. F. (1991). *Scale development: Theory and applications*. *Applied social research methods series* (Vol. 26). Newbury Park, CA: Sage Publications.
- Douglas, P., & Wier, B. (2000). Integrating ethical dimensions into a model of budgetary slack creation. *Journal of Business Ethics*, 38, 267–277.
- Douglas, P. C., Davidson, R. A., & Schwartz, B. N. (2001). The effect of organizational culture and ethical orientation on accountants' Ethical Judgments. *Journal of Business Ethics*, 34, 101–121.
- Dyck, A., Morse, A., & Zingales, L. (2010). Who blows the whistle on corporate fraud?. *Journal of Finance*, 65(6), 2213–2254.
- Elliott, R. (2002). Twenty-First century assurance. *Auditing: A Journal of Practice & Theory*, 21(1), 139–146.
- Eutsler, J., Norris, A. E., & Trompeter, G. (2018). A live simulation-based investigation: Interactions with clients and their effect on audit judgment and professional skepticism. *Auditing: A Journal of Practice & Theory*, 37(3), 145–162. <https://doi.org/10.2308/ajpt-51880>.

- Eysenck, M. W., MacLeod, C., & Mathews, A. (1987). Cognitive functioning and anxiety. *Psychological Research Psychologische Forschung*, 49(2–3), 189–195.
- Financial Reporting Council (FRC). (2019). *Latest FRC audit inspections*. Retrieved July 10, 2019, from <https://www.frc.org.uk/news/july-2019/latest-frc-audit-inspections>.
- Forsyth, D. R. (1980). A taxonomy of ethical ideologies. *Journal of Personality and Social Psychology*, 39, 175–184.
- Forsyth, D. R. (1981). Moral judgment: The influence of ethical ideology. *Personality and Social Psychology Bulletin*, 1, 218–223.
- Forsyth, D. R. (1992). Judging the morality of business practices: The influence of personal moral philosophies. *Journal of Business Ethics*, 11, 461–470.
- Forsyth, D. R., & O'Boyle, E. H., Jr. (2011). Rules, standards, and ethics: Relativism predicts cross-national differences in the codification of moral standards. *International Business Review*, 20, 355–361.
- Forsyth, D. R., & O'Boyle, E. H., Jr. (2013). Ethics position theory and unethical work behavior. In R. A. Giacalone & M. D. Promislo (Eds.), *Handbook of unethical work behavior: Implications for individual well-being* (pp. 221–236). Armonk, NY: M.E. Sharpe.
- Forsyth, D. R., O'Boyle, E. H., Jr., & McDaniel, M. A. (2008). East meets west: A meta-analytic investigation of cultural variations in idealism and relativism. *Journal of Business Ethics*, 83(4), 813–833.
- Free, C., & Murphy, P. (2015). The ties that bind: The decision to co-offend in fraud. *Contemporary Accounting Research*, 32(1), 18–54.
- Fullerton, R., and Durtschi, C. (2004). The effect of professional skepticism on the fraud detection skills of internal auditors. *Journal of Utah State University*. 14–23.
- Glover, S., & Prawitt, D. (2014). Enhancing auditor professional skepticism: The professional skepticism continuum. *Current Issues in Auditing*, 8(2), 1–10.
- Glover, S., Prawitt, D., Schultz, J., Jr., & Zimbelman, M. (2003). A test of changes in auditors' fraud-related planning judgments since the issuance of SAS No. 82. *Auditing: A Journal of Practice & Theory*, 22(2), 37–251.
- Greenfield, A. C., Strand Norman, C., & Wier, B. (2008). The effect of ethical orientation and professional commitment on earnings management behavior. *Journal of Business Ethics*, 83(1), 419–434.
- Greenwood, M., & Freeman, R. (2018). Deepening ethical analysis in business ethics. *Journal of Business Ethics*, 147(1), 1–4.
- Guénin-Paracini, H., Malsch, B., & Paillé, A. M. (2014). Fear and risk in the audit process. *Accounting, Organizations and Society*, 39, 264–288.
- Guénin-Paracini, H., Malsch, B., & Tremblay, M. S. (2015). On the operational reality of auditors' independence: Lessons from the field. *Auditing: A Journal of Practice and Theory*, 34(2), 201–236.
- Hammersley, J. S. (2011). A review and model of auditor judgments in fraud-related planning tasks. *Auditing: A Journal of Practice & Theory*, 30(4), 101–128.
- Hammersley, J. S., Bamber, E. M., & Carpenter, T. D. (2010). The influence of documentation specificity and priming on auditors' fraud risk assessments and evidence evaluation decisions. *The Accounting Review*, 85(2), 547–571.
- Henle, C. A., Giacalone, R., & Jurkiwicz, C. L. (2005). The role of ethical ideology in the workplace deviance. *Journal of Business Ethics*, 56(1), 219–230.
- Hoffman, V. B., & Zimbelman, M. F. (2009). Do strategic reasoning and brainstorming help auditors change their standard audit procedures in response to fraud risk? *The Accounting Review*, 84(3), 811–837.
- Hoffman, V. B., & Zimbelman, M. F. (2012). How strategic reasoning and brainstorming can help auditors detect fraud? *Current Issues in Auditing*, 6(2), 25–33.
- Hudson, N. W., & Fraley, R. C. (2015). Volitional personality trait change: Can people choose to change their personality traits? *Journal of Personality and Social Psychology*, 109(3), 490–507.
- Hunt, S. D., & Vitell, S. A. (1986). A general theory of marketing ethics. *Journal of Macromarketing*, 8(2), 5–16.
- Hurt, R. K. (2010). Development of a scale to measure professional skepticism. *Auditing: A Journal of Practice & Theory*, 29(1), 149–171.
- Hurt, R. K., Brown-Liburd, H. L., Early, C. E., & Krishnamoorthy, G. (2013). Research on auditor professional skepticism—Literature synthesis and opportunities for future research. *Auditing A Journal of Practice & Theory*, 32(1), 45–97.
- Hurt, R. K., Eining, M. M., and Plumlee, D. (2012). *Linking professional skepticism to auditors' behaviors*. Working paper, Baylor University, and University of Utah.
- International Federation of Accountants (IFAC): International Auditing and Assurance Standards Board (IAASB). (2010a). *International Standards on Auditing (ISA) 200: Overall Objectives of the independent auditor and the conduct of an audit in accordance with international standards on auditing*. Retrieved from <http://www.ifac.org/system/files/downloads/a008-2010-iaasb-handbook-isa-200.pdf>.
- International Federation of Accountants (IFAC): International Auditing and Assurance Standards Board (IAASB). (2010b). *International Standards on Auditing (ISA) 240: The auditor's responsibilities relating to fraud in an audit of financial statements*. Retrieved from <http://www.ifac.org/sites/default/files/downloads/a012-2010-iaasb-handbook-isa-240.pdf>.
- International Federation of Accountants (IFAC): International Ethics Standards Board for Accountants (IESBA). (2016). *2016 handbook of the code of ethics for professional accountants*. Retrieved from <https://www.ethicsboard.org/iesba-code>.
- Johari, R. J., Mohd-Sanusi, Z., & Chong, V. K. (2017). Effects of auditors' ethical orientation and self-interest independence threat on the mediating role of moral intensity and ethical decision-making process. *International Journal of Auditing*, 21(1), 38–58.
- Johnson, E., Fleischman, G., Valentine, S., & Walker, K. (2012). Managers' ethical evaluations of earnings management and its consequences. *Contemporary Accounting Research*, 29(3), 910–927.
- Maroney, J. J., & McDevitt, R. E. (2008). The effects of moral reasoning on financial reporting decisions in a post sarbanes-oxley environment. *Behavioral Research of Accounting*, 20(2), 89–110.
- Mautz, R. K., & Sharaf, H. A. (1961). *The philosophy of auditing. Monograph No. 6 American Accounting Organization*. Sarasota, FL: American Accounting Organization.
- Nallareddy, S., & Ogneva, M. (2017). Predicting restatements in macroeconomic indicators using accounting information. *The Accounting Review*, 92(2), 151–182.
- Nelson, M. W. (2009). A model and literature review of professional skepticism in auditing. *Auditing: A Journal of Practice & Theory*, 28(2), 1–34.
- Nelson, M. W., and Tan, H. T. (2005). Judgment and decision making research in auditing: A task, person, and interpersonal interaction perspective. *Auditing: A Journal of Practice & Theory*, 24, 41–71.
- Nolder, C. J., & Kadous, K. (2018). Grounding the professional skepticism construct in mindset and attitude theory: A way forward. *Accounting, Organizations and Society*, 67, 1–14.
- Norman, S. C., Wier, B., & Achilles, W. W. (2008). Can ethical position contribute to our understanding of fraud detection? *Journal of Theoretical Accounting Research*, 4(1), 135–164.
- Nunally, J. (1978). *Psychometric theory*. 2nd edition. New York, NY: McGraw-Hill.
- Pedhazur, E. J. (1997). *Multiple regression in behavioral research* (3rd ed.). Fort Worth, TX: Harcourt Brace.

- Peytcheva, M. (2014). Professional skepticism and auditor cognitive performance in a hypothesis-testing task. *Managerial Auditing Journal*, 29(1), 27–49.
- Popova, V. (2013). Exploration of skepticism, client-specific experiences, and audit judgments. *Managerial Auditing Journal*, 28(2), 140–160.
- Public Company Accounting Oversight Board (PCAOB). (2007a). *Observations on Auditors' Implementation of PCAOB Standards Relating to Auditors' Responsibilities with Respect to Fraud*. Release No. 2007–001. Retrieved from http://pcaobus.org/Inspections/Documents/2007_01-22_Release_2007-001.pdf.
- Public Company Accounting Oversight Board (PCAOB). (2007b). *Standing advisory group meeting: Panel discussion—forensic audit procedures* February 22. Retrieved from http://pcaobus.org/News/Events/Documents/02222007_SAGMeeting/Forensic_Audit_Procedures.pdf.
- Public Company Accounting Oversight Board (PCAOB). (2008). *Report on the PCAOB's 2004, 2005, 2006, and 2007 inspections of domestic annually inspected firms*. Release No. 2008–008. Retrieved from http://pcaobus.org/Inspections/Documents/2008_12-05_Release_2008-008.pdf.
- Public Company Accounting Oversight Board (PCAOB). (2010). *Auditing standard No. 12: Identifying and assessing risks of material misstatement*. Release No. 210-004. Retrieved from http://pcaobus.org/Standards/Auditing/Pages/Auditing_Standard_12.aspx.
- Public Company Accounting Oversight Board (PCAOB). (2011). *Staff Audit Practice Alert No. 9—Assessing and responding to risk in the current economic environment*. Retrieved from http://pcaobus.org/Standards/QandA/12-06-2011_SAPA_9.pdf.
- Public Company Accounting Oversight Board (PCAOB). (2012). *Staff audit practice alert No. 10: Maintaining and applying professional skepticism in audits*. Retrieved from http://pcaobus.org/Standards/QandA/12-04-2012_SAPA_10.pdf.
- Public Company Accounting Oversight Board (PCAOB). (2015). *AS 2401: Consideration of fraud in a financial statement audit*. Retrieved from http://pcaobus.org/Standards/Auditing/Pages/Auditing_Standard_12.aspx.
- Public Company Accounting Oversight Board (PCAOB). (2020). *Due professional care in the performance of work*. AS 1015. Retrieved from https://pcaobus.org/Standards/Auditing/Pages/AS1015_amendments.aspx.
- Quadackers, L. M. (2009). A study of auditors' skeptical characteristics and their relationship to skeptical judgments and decisions. Doctoral dissertation, VU University Amsterdam.
- Quadackers, L. M., Groot, T., & Wright, A. (2014). Auditor's professional skepticism: Neutrality versus presumptive doubt. *Contemporary Accounting Research*, 31(3), 639–657.
- Robinson, S. N., Curtis, M. B., & Roberston, J. C. (2018). Disentangling the trait and state components of professional skepticism: Specifying a process for state scale development. *Auditing: A Journal of Practice & Theory*, 37(1), 215–235.
- Schlenker, B., & Forsyth, D. R. (1977). On the ethics of psychological research. *Journal of Experimental Social Psychology*, 13, 369–396.
- Securities and Exchange Commission (SEC). (1997). In the matter of Bausch & Lomb incorporated, Harold O. Johnson, Ermin Lanacone, and Kurt Matsumoto, respondents. *Accounting and auditing enforcement release No. 987*. Retrieved from <https://www.sec.gov/litigation/admin/3439329.txt>.
- Securities and Exchange Commission (SEC). (2019). *KPMG paying \$50 million penalty for illicit use of PCAOB data and cheating on training exams*. release No. 2019-95. Retrieved from <https://www.sec.gov/news/press-release/2019-95>.
- Shaub, M. K., Finn, D., & Boshuizen, H. (1993). The effects of auditors' ethical orientation on commitment and ethical sensitivity. *Behavioral Research in Accounting*, 5, 145–169.
- Strand, C., & Lancaster, K. (2001). An experimental assessment of business students' abilities to recognize fraud risk factors associated with misappropriation of assets. *Advances in Accounting Behavioral Research*, 4, 333–360.
- Swaidan, Z., Vitell, S. J., & Rawwas, M. Y. A. (2003). Consumer ethics: Determinants of ethical beliefs of African Americans. *Journal of Business*, 46(2), 175–186.
- Verwey, I. (2014). Differences between public auditors and forensic accountants in their ability to identify fraud risks and plan effective procedures to mitigate fraud risks: The relationship between individual traits and fraud experience and training on fraud risk identification and planning audit procedures. Doctoral dissertation, Nyenrode Business University.
- Verwey, I., & Asare, S. K. (2018). *The effect of forensic expertise on fraud planning*. Working paper, Nyenrode Business University, and University of Florida.
- Zimbelman, M. F. (1997). The effects of SAS No. 82 on auditors' attention to fraud risk factors and audit planning decisions. *Journal of Accounting Research*, 35, 75–97.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.