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**Dark Triad Managerial Personality and Financial
Reporting Manipulation**

Dark Triad Managerial Personality and Financial Reporting Manipulation

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Abstract We investigate the relationship between dark triad personality traits (Machiavellianism, narcissism, and psychopathy) of managers and reporting manipulation using a primary survey of 837 professionals working in accounting and finance departments. We find that (a) managers, who exhibit dark personality traits, are associated with a higher prevalence of fraudulent accounting practices in their accounting and finance departments and (b) that traditional risk management mechanisms are only partially effective in mitigating this effect. Internal audits are only effective in curtailing the negative behavior of dark triad managers if these internal audits are performed by independent external personnel, but not if they are conducted by internal personnel. This suggests that dark triad managers are able to manipulate other employees quite effectively. Consequently, having external personnel performing the task provides a safeguard against such unethical practices and manipulation. This finding has strong practical implications as it provides support for outsourcing internal audits rather than keeping them in-house.

Keywords: financial reporting quality; fraud; survey; managerial style effects; dark triad; internal controls;

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1 Introduction

Every now and then, we observe corporate accounting scandals that annihilate billions of market capitalization and have widespread consequences. Examples of these are numerous, including Enron, WorldCom, and most recently the Wirecard scandal (Davies, 2020). The impacts on all stakeholders of the companies and society at large are immense. Furthermore, these large scale accounting scandals often involve top managers who are responsible for initiating, maintaining, and hiding these fraudulent practices for long periods of time.

For any individual to ‘successfully’ keep up a long-ranging fraud, it can be argued, requires certain predispositions. Unethical decision-making, lying for one’s own gain, a sense of superiority and lack of guilt and remorse are all consequences of being a dark-triad personality (Babiak and Hare, 2006; Blickle et al., 2006; Corry et al., 2008; Stevens et al., 2012; Furnham et al., 2013; Boddy, 2015). According to psychology research, such traits are particularly prevalent among fraud offenders (Clarke, 2005; Kirkman, 2005).

In this paper, we use theory and measures from personality psychology to investigate the effects of management personality traits on fraudulent accounting practices. We focus on managers in finance and accounting departments as they have the incentive and ability to influence the financial reporting process. We focus on the so-called “dark triad” personality traits because managers with Machiavellian, narcissistic, and psychopathic attributes are especially prone to exploit their ability to influence the reporting process in a self-serving way. We particularly look at the relationship between managers’ dark triad personalities and fraudulent accounting actions and how internal control mechanisms can moderate the relationship.

In this setting, it is important to note that accounting manipulation is distinct from the related concept of earnings management. Accounting manipulation practices are those that violate GAAP. Earnings management practices, while masking the true underlying economic situation of a company, are still within the boundaries of GAAP. While academics have acknowledged that it is sometimes hard to delineate this boundary, we focus on practices that are clearly outside the discretion provided by GAAP, i.e. accounting

manipulation.

We find a strong positive relationship between dark triad personality traits of managers and accounting manipulation. Our results indicate that for a one-unit increase in the dark triad score, the odds of engaging in fraudulent accounting increase by a factor of 2.49 ($p < 0.001$), keeping size and industry controls fixed. We also find that traditional risk control mechanisms such as internal audit departments staffed with internal personnel and whistleblower regulations do not easily mitigate these practices. However, having an independent and outsourced internal audit function helps to successfully curb accounting fraud. Specifically, an externally staffed audit function leads to a roughly 60% decrease of the negative impact of managers with dark triad personality on companies' accounting practices. The slopes are 0.72 ($p < 0.001$) for dark triad managers in companies with an in-house internal audit department and 0.27 ($p < 0.01$) for dark triad managers in companies with outsourced internal audit departments. We conjecture that this may be attributed to the fact that managers who score high on the dark triad scale are, in fact, able to influence internal personnel and an internally staffed audit function, whereas it is harder for them to manipulate external providers of an internal audit function. Consequently, having externals perform the task provides a safeguard against such manipulation. This finding has strong practical implications as it provides support for outsourcing such activities rather than keeping them in-house.

Our results contribute to the literature in three important ways. First, we provide additional evidence for the literature linking personality characteristics to financial reporting practices. In terms of our research question, our paper is closest to Buchholz et al. (2019), Capalbo et al. (2018), Ham et al. (2017), and Ge et al. (2011). These studies find that manager-specific effects help to explain reporting quality, which is evidently decreased by accounting manipulation. Previous research usually focuses on one selected dark personality trait. While Murphy (2012) focuses on Machiavellianism and its impact on misreporting using the MACH-IV scale (Christie and Geis, 1970), most of the remaining research concerning personality focuses on narcissism (see, e.g., Buchholz et al., 2019; Capalbo et al., 2018; Ham et al., 2017; Olsen et al., 2014; Olsen and Stekelberg, 2015;

Chatterjee and Hambrick, 2007). The only authors who also investigate all three personality traits simultaneously are D’Souza and de Lima (2015). However, their setting and research question is somewhat different. They use the short dark triad scale (Jones and Paulhus, 2014) with 131 MBA students from Spain to investigate personality effects on opportunistic decision-making. Compared to these previously used proxies for dark personality traits in the accounting literature, we use the dirty dozen measure (Jonason and Webster, 2010), which allows us to study all three negative personality traits at the same time. Our results complement previous studies by showing that managerial personality darkness has a significant effect on fraudulent practices.

Second, by focusing on the moderating role of internal control mechanisms, we show that only a subset of common control functions help to keep the self-serving interest of managers in check. In doing so, we extend prior literature that has primarily used publicly listed company samples and thus did not have information on internal control mechanisms. This is important, as we show that standard internal controls are ineffective to contain dark personalities. We provide empirical evidence demonstrating that outsourced internal audit functions are better able to mitigate the effects of managers who score high on the dark triad spectrum.

Third, by using the survey method and explicitly asking the participant about actions, we are able to study fraud, which has yet to be detected by external parties and, thus, is hard to examine with archival data. Being able to investigate ongoing fraudulent actions—information that would otherwise not be possible to obtain by any other data-gathering method—is a substantial contribution to the existing literature, as fraudulent reporting tends to remain hidden for long periods of time or even indefinitely (Zingales, 2015). In contrast, the prior literature has so far focused on the concept of earnings management and used archival data (Buchholz et al., 2019; Capalbo et al., 2018; Ham et al., 2017; Ge et al., 2011), and, thus, has been unable to explore the extreme unethical and fraudulent accounting manipulation that often occurs in an organisation before accounting scandals come to light. Furthermore, we ask our survey respondents to answer questions not about themselves, but about their immediate supervisor. Observant ratings

have been established in the psychology literature as not only accurate, but in some cases even more accurate than self-ratings (see the meta-analysis of Connelly and Ones, 2010). Our use of observant ratings is particularly advantageous given that the personality traits we are interested in are prone to engage in non-compliant behaviour.

The remainder of the paper is structured as follows. The next section discusses the related literature and our hypotheses. Section 3 describes our methodology. Section 4 presents our main results and several supplemental analyses. We discuss our findings in Section 5.

2 Related Literature and Hypotheses

Corporate fraud is a topic that draws constant attention from the public, regulatory bodies, and academia. However, most of the time, the attention starts too late, namely after the costs for stakeholders, such as shareholders, creditors, and employees, and possibly society of a large fraud case are already in the millions. As a reaction to an uncovered fraud, standard setters and academia focus on fixing the rules, providing tighter guidelines, and imposing stricter regulatory requirements on the firm. Apart from the considerable media attention that the perpetrators usually receive, the role of individuals only recently became of interest to research. Bertrand and Shoar (2003) are one of the first authors who investigate the relationship between manager-specific traits and firm outcomes. The authors show that manager-fixed effects are an important factor in firm outcomes. In the accounting literature, Ge et al. (2011) and Bamber et al. (2010), amongst others, utilize the manager-fixed-effects approach to show that managers matter for a broad range of accounting choices, such as increasing operating leases, changing pension assumptions, or the voluntary disclosure decisions. More recently, research tries to explain the determinants of these manager-fixed-effects and how personality fits into the picture.

2.1 Reporting Quality and Fraud

Considering that operating and financial decisions of managers form the basis of the reported accounting figures, is it important to study the link between managerial personality and fraudulent accounting practice, and ultimately reporting quality. Today, almost all large companies are using financial incentives based on earnings per share, stock prices, or shareholder returns to determine their executives' compensation and incentive plans (Schmidt and Reda, 2017; Davis, 2009). Thus, managers have both the ability and the incentive to influence the reported earnings and performance figures. This, in turn, has an impact on reporting quality.

As the literature provides no precise definition for reporting quality, scholars often-times measure reporting quality as an absence of negative actions. Such negative actions constitute actions that may make the accounting figures less transparent or timely, such as earnings smoothing, earnings management, restatements, and fraud. For most actions, it is hard to delineate between quality improving or quality deteriorating consequences. Whether or not a more volatile earnings trend closer to the current economic reality is a better indicator of the long-run earnings capabilities, compared to a smooth and earnings-managed trend, is still to be determined. According to Nelson and Skinner (2013), the interpretation of what constitutes reporting quality is dependent on management intent and the decision context of the user. Fraudulent financial reporting is a clear sign of low (or no) reporting quality. As fraudulent accounting figures show a wrong and misleading view of a company's health and performance to outside stakeholders, it is important to get a better understanding of the determinants and potential deterrents of this practice.

2.2 Fraud and Personality

Since the publication of the seminal research article by Hambrick and Mason (1984) on upper echelons theory, the general link between managerial style and firm outcomes continues to receive attention in managerial, accounting, and finance research. Bringing corporate fraud into the picture is a more recent phenomenon. On a 2011 panel at the American Accounting Association's annual meeting on emerging issues in fraud research,

Brody et al. (2012) pointed out that, to prevent and detect fraudulent activities, auditors and regulators need to understand the behavioral component of people who commit fraud. In the end, every fraud case is perpetrated by an individual and not a company. Other researchers emphasize the importance of personality traits in fraud research as well. While Cohen et al. (2010) suggest that auditors should specifically focus on the behavior and attitudes of managers, Ramamoorti (2008) reminds us that fraud is a human endeavor. Thus, it is important to understand the personality of fraud offenders to better understand their behavior (Ramamoorti, 2008).

Yet, the particular link between fraud and personality is under-explored in the literature. Some recent papers looked at the effects of dark personality traits on accounting outcomes, such as accruals quality (Buchholz et al., 2019; Capalbo et al., 2018; Ham et al., 2017; Francis et al., 2008), propensity to be subjected to Accounting and Auditing Enforcement Releases (Schrand and Zechman, 2012), or misreporting (Murphy, 2012).

The three most prominent negative personality traits in the literature are Machiavellianism, narcissism, and (sub-clinical) psychopathy, together called the dark triad of personality. Furnham et al. (2013) provide an excellent review of the dark triad concept. The existing accounting literature to date has emphasized narcissism of top executives as a potential determinant of accounting outcomes. For example, Rijsenbilt and Commandeur (2013) study the impact of top executive narcissism on fraud, Olsen et al. (2014) on performance, Olsen and Stekelberg (2015), Capalbo et al. (2018), and Buchholz et al. (2019) on earnings management, and Ham et al. (2017) on multiple reporting quality proxies.

The focus on narcissism can mainly be attributed to the fact that researchers have established that there are observable characteristics of narcissists in archival data that can be used as proxies for the underlying personality trait. Using measures such as signature size (Ham et al., 2018), the size of the picture in annual reports (Chatterjee and Hambrick, 2007), the frequency of first-person pronouns in earnings conference calls (Raskin and Shaw, 1988), or third-party ratings of video samples of CEOs (Petrenko et al., 2016) enables archival researchers to measure narcissism, without having to subject

managers to psychological tests. This is important as managers are most likely unwilling to participate in psychological tests in the first place. However, recent literature also questions the validity of these proxies (in particular signature size and first-person singular pronoun use) for narcissism (Carey et al., 2015; Koch and Biemann, 2014).

To date, there are no established proxies in archival data for the traits of Machiavellianism and psychopathy, which might explain the lack of research for these two traits. However, there is considerable overlap between the measures. While there might be noticeable differences in a clinical population, Furnham et al. (2013) argue that in the general population, all three share a common core of callous manipulation. Paulhus and Williams (2002), who introduced the term dark triad, also acknowledge that they found considerable overlap in empirical studies of the dark triad. All three traits manifest, among other things, as a tendency of self-promotion, emotional coldness, and socially evil character.

Psychology research found that individuals with a high Machiavellianism score tend to be more self-interested and opportunistic (Gunnthorsdottir et al., 2002). As such, Machiavellian characters are more likely to cheat and be able to rationalize their behavior (Cooper and Peterson, 1980). They try to manipulate others for their own gain (Christie and Geis, 1970) and believe that manipulation is the key to success in life (Paulhus and Jones, 2015). Murphy (2012) found in an experimental setting that people, who score high on the Machiavellianism test, misreport both to a higher degree and with less guilt.

For narcissists, current research identifies a sense of entitlement, dominance, and superiority as their key features (Corry et al., 2008). Correspondingly, there is evidence of narcissists being prone to unethical behavior, such as cheating on their romantic partner (Buss and Shackelford, 1997) and cheating to improve their academic performance (Menon and Sharland, 2011). The accounting literature documents links between narcissism, the most thoroughly studied personality characteristic, and less effective monitoring (Young et al., 2014; Chatterjee and Pollock, 2016) and lower reporting quality due to CFO and CEO narcissism (Ham et al., 2017). Moreover, Ham et al. (2017) find a link between CFO narcissism and lower reporting quality in several dimensions, such as more earnings

management (see also Capalbo et al., 2018; Buchholz et al., 2019), less timely loss recognition, and a higher probability of restatement, all of which are still in the realm of legal accounting discretion. We are not aware of any study to date that explicitly looks at the propensity to engage in fraudulent practices.

Finally, non-clinical psychopathy is considered to be the most negative trait of the dark triad (Rauthmann and Kolar, 2012). Psychopaths are thrill-seeking individuals with low levels of empathy (Hare, 1985; Lilienfeld and Andrews, 1996). They tend not to experience remorse (Babiak and Hare, 2006). People with psychopathic tendencies are reckless, selfish, and aggressive (Patrick, 2007). If in top management positions, psychopaths pose the largest threat to business ethics (Marshall et al., 2015). In an organizational setting, they are willing to defraud the company that they work for to get higher pay or a promotion (Clarke, 2005). According to Kirkman (2005), fraud is the psychopath's crime of choice.

Based on the prior literature, and the stark similarities between Machiavellians, narcissists, and psychopaths, we believe that it is important to consider all three facets of the dark triad when considering the impact of personality traits on accounting manipulation. We expect managers who score high on the dark triad scale to be more willing to engage in accounting fraud.

H1: Firms with managers who score high on the dark triad scale manipulate accounting figures more compared to firms with managers who score low on the scale.

2.3 Internal Control and Reporting Quality

The 2002 Sarbanes-Oxley (SOX) Act is a direct response to the accounting scandals in the early 2000s, most notably Enron. One significant change after SOX is the heightened importance that regulatory bodies place on internal controls, such as an internal audit department and whistle-blower policies.

Research has found a positive association between strong internal controls and earnings quality (Doyle et al., 2007; Ashbaugh-Skaife et al., 2008). The internal audit function,

in particular, serves as an important role in reducing earnings management (Prawitt et al., 2009) and protects companies from criminal behavior within the firm (Nestor, 2004). Several authors point out that internal audit departments serve a critical role in detecting possible fraud, both by employees as well as outsiders (Luehlfiging et al., 2003; Belloli and McNeal, 2006). Thus, the literature is in consensus about the positive effects of having an internal audit function compared to not having one.

However, there are opposing views on whether an in-house team or an outsourced provider can better perform the internal audit function. Carey et al. (2006) find that, consistent with model-based findings by Caplan and Kirschenheiter (2000), companies that decide to outsource the internal audit function see the external function as more competent and of higher quality. More recent findings show that an in-house internal audit function is more effective in identifying weaknesses and fraud detection (Coram et al., 2008). The authors point towards a greater familiarity with the systems in place and a much higher amount of time spent with actual auditing compared to outsourced providers.

Having a whistle-blower policy in place should also be helpful in detecting fraud (Morgan, 2005; Coram et al., 2008). According to Feltovich and Hamaguchi (2018), the use of whistle-blowers is invaluable in curbing many forms of illegal or unethical behavior. Thus, it is not surprising that governments increasingly institute incentives for whistle-blowers, such as workplace protections for employees blowing the whistle on their bosses, a share of tax receipts for citizens reporting tax cheats, or reduced fines and punishments for collusive firms reporting their activity (Feltovich and Hamaguchi, 2018).

The literature has not answered, however, the interplay between managerial personality, its impact on internal control functions, and the ensuing effect on accounting manipulation. Overall, studying accounting outcomes, the evidence is strongly in favor of having an internal control function compared to not having one. The question remains, however, if internal control functions are also effective for companies with dark triad managers.

2.4 Personality and Internal Control

Upper echelons theory posits that in order to understand the strategy and performance of a company one must consider the managerial background characteristics and their actions (Hambrick and Mason, 1984; Hambrick, 2007). An extension to upper echelons theory is the “tone at the top” construct, stating that senior management, in addition to directly influencing firm outcomes, also indirectly influences firm outcomes. As everyone in the firm looks towards the top for guidance, senior management effectively sets the tone within the company (Schwartz et al., 2005; Schroeder, 2002). The values of C-level executives, especially the CEO, are shown to affect the values and behavior of other members of the organization (Berson et al., 2008; Reed et al., 2011).

Apart from the findings of Ham et al. (2017), showing that companies have more material weaknesses (their measure of weak internal control) if they have a narcissistic CFO, there is, to the best of our knowledge, no research that looks at the potential moderating role of internal control functions on the relationship between managerial personality and reporting quality.

However, studying this triangle between personality traits, disclosure quality, and internal control mechanisms is important. The organizational psychology literature documents that psychopaths have a talent for using other people and concealing their real motives (Boddy, 2006). Together with managements’ ability and motivation to influence accounting records, Soltani (2014) finds that fraud cases often involve managers, who override control mechanisms that otherwise appear to work effectively. Anecdotal evidence supports this view. The CEO of the Daily Mirror, scoring high on the corporate psychopath scale, reportedly intimidated his staff and rules via a culture of fear (Boddy, 2016). Considering the existing literature, we expect internal control mechanisms nonetheless to work towards higher reporting quality even in the context of dark triad managers, albeit to a lesser extent.

H2a: The effect of dark personality managers on reporting quality is more pronounced in firms that do not have an internal audit function compared to firms with an internal audit function.

H2b: The effect of dark personality managers on reporting quality is more pronounced in firms that do not have a whistle-blower policy compared to firms that have a whistle-blower policy in place.

3 Methodology

3.1 Data and Sample Description

We use an online survey to gather information about the personality traits of managers and instances of accounting fraud. Choosing a survey enables us to capture ratings of personality characteristics as well as reports about the presence and frequency of fraudulent accounting actions in companies' day-to-day operations. It is not possible to obtain the combination of this information by any other data collection method.

We collected data with the help of Cint, a large panel exchange and survey respondent provider. We specifically targeted professionals from the United States, who had indicated to the panel provider at the time they signed up that they work in either accounting or finance departments. A total of 3,776 professionals were screened to see if they still work in an accounting or finance department. Of these, 1,628 qualified for our survey based on their current department. As data from online surveys are sometimes contaminated by careless responding, we included an attention check in our actual survey (see Oppenheimer et al., 2009, and Appendix A for all questions in the survey, including the attention check). In total, we obtain data from 1,074 respondents who were able to pass the attention check. Of those 1,074 respondents, 957 finished the survey, and 837 provided answers to all the questions relevant for the analysis (i.e., did not answer with the "I do not know" option). Thus, the final sample size is 837 observations. Table 1 shows the distribution of respondents across the 21 different industries. The sample includes an over-representation of firms in the financial sector, with 35% (293) of all observations (837).

Insert Table 1 here

The unit of analysis are the individual actions of employees with decision-making

authority, i.e., managers. However, survey respondents are asked to answer the questions not about themselves, but about their immediate superior. Third-party ratings are possible as personality traits are readily observable (Rokeach, 1985). A large literature emphasizes the value and accuracy of third-party ratings of personality traits, and establishes that third-party ratings are not only accurate but can, in fact, be more accurate than self-assessments (see, e. g. Connelly and Ones, 2010; Oh et al., 2011).

The observant rating approach has two important advantages. First, using an informant-scale approach and keeping the participant's anonymity, we reduce the risk of social desirability bias (Crowne and Marlowe, 1964; Rokeach, 1985) and response distortion (Kerin and Peterson, 1977) affecting the results. Second, the approach allows us to obtain observations about the whole spectrum and hierarchy of a company's management, from business unit managers to C-level executives. In our sample, 277/214 survey respondents are directors/managers or other employees with decision-making power. The remaining 346 respondents are not in a managing position. While we acknowledge that third-party ratings may be influenced by the quality of the respondent's relationship with her supervisor, we believe that these relationships will be distributed in an unsystematic way (e.g., some respondents will have a positive relationship with their supervisor, while others have a negative relationship with their supervisor), thereby increasing standard errors but not biasing our results.

Apart from social desirability bias, common method bias is another issue when using data gathered by a survey. We use both procedural and statistical remedies to minimize common method bias, a similar strategy used by other accounting researchers (see for example Abernethy et al., 2011). We follow best practices to enhance the validity of the survey procedure. First, the measurement of dependent and independent variables takes place at a maximum distance within the survey (Podsakoff et al., 2003; Chang et al., 2010). Second, as the independent variable of interest is measured with negatively loaded items, we hide them amongst a positively loaded scale to further reduce bias.

Statistically, we conduct the (Harman, 1976) single-factor test to assess whether the correlations between variables are artificially inflated. With an explained variance of 22.9

percent, we fail to find a single factor that accounts for the majority of co-variation within the data, an indication of low common method-bias (Abernethy et al., 2004).

3.2 Variable Description

Table 2 shows descriptive statistics for the main variables used in the model. Appendix A also contains all survey questions, their corresponding items, and the Likert-scales utilized in this study. We use factor analysis to investigate whether the used scales load on the constructs they are supposed to measure, and not on other constructs. The results suggest good reliability and construct validity (Hair et al., 2010; Chenhall, 2005).

Insert Table 2 here

3.2.1 Accounting Manipulation

The dependent variable of interest ACCMANIP captures common actions undertaken by management to obscure and manipulate earnings figures. To our knowledge, there are no validated scales to measure the degree of accounting manipulation and fraud. Thus, we created a new scale, based on observable practices in the accounting and finance departments. The practices are from a book on financial statement analysis that focuses on detecting earnings and cash flow manipulation practices (Schilit and Perler, 2010). In the survey, we ask the respondents to indicate on a scale from one to five, one being never and five being frequently (every quarter), how often their supervisor engages in twelve different practices. The practices fall into the following five broad categories: (1) recording revenue prematurely, (2) recording revenue too late, (3) shifting current expenses to an earlier or later period, (4) shifting future expenses to the current period, and (5) failing to record or properly reduce liabilities. An example item for category 3 is: “Capitalizing normal operating costs to reduce expenses.” All survey questions are included in Appendix A. We aggregate the answers to all items to a single variable. Factor analysis shows that the twelve items effectively capture actions that manipulate earnings figures (Cronbach’s alpha = 0.96).

Figure 1 shows the distribution of our dependent variable, ACCMANIP. The variable exhibit a left-skew in its distribution, suggesting that most respondents are either never witnessing manipulative behavior or very infrequently. ACCMANIP has a mean of 2.15 and median of 1.75 (see Table 2).

Insert Figure 1 here

The preferred option that managers take, if they want to influence reported earnings, is to *record revenue before completing all services*. In our sample, 55.4% acknowledged that they engage in the said practice, and of that 41.8% answered that they perform this action every quarter.

3.2.2 Dark triad personality traits

The primary independent variable of interest DARKTRIAD captures the dark personality traits of managers. Participants are asked to rate their manager's personality on the dirty dozen scale (Jonason and Webster, 2010). The dirty dozen is a widely used and validated scale (see, e.g., Miller et al., 2012; Webster and Jonason, 2013) for assessing dark triad personality traits, mainly in the organizational psychology literature. The dirty dozen scale is better suited for this study, compared to the short dark triad scale (SD3) by Jones and Paulhus (2014), as some items in the SD3 scale do not lend themselves well to being used in informant ratings.

The dirty-dozen scale comprises three separate 4-item sub-scales for Machiavellianism, narcissism, and psychopathy. The independent variable is formed by the arithmetic average of the three sub-scales. We hide the dirty dozen scale amongst a positively loaded 22-item scale that assesses general leadership behavior and randomize the order of all questions to mitigate the possible bias of negatively framed questions. Cronbach's alpha of the dark-triad scale is 0.93, indicating very high internal consistency.

Figures 2 through 4 show the distribution of our variable of interest, DARKTRIAD, and the three sub-scales that are the basis for the DARKTRIAD variable. DARKTRIAD, with a mean of 2.56 and median of 2.42 is slightly left skewed. This skewness is explained

by both Machiavellianism and psychopathy that are somewhat left skewed with means and medians of 2.28/2.00 and 2.42/2.25, respectively. The narcissism scale is almost symmetric with a mean and a median of 2.98 and 3.00, and a standard deviation of 0.97.

Insert Figures 2, 3, 4, and 5 here

3.2.3 Internal control mechanism

We also ask participants about the presence of an internal audit function, creating a binary variable IA where one indicates the existence of an internal audit function, and zero a lack thereof. Participants that indicate the existence of an internal audit function are then asked who is providing the internal audit function (completely in-house, outsourced to an external firm, or a combination of an internal and external firm), creating a categorical variable IAPROVIDER. Further, we ask participants about the presence of a whistle-blower policy at their firm, creating a binary variable WBP where one indicates the existence of a whistle-blower policy, and zero a lack thereof.

3.2.4 Control variables

Finally, we collect information on the primary industry of the firm. The industry variable is based on the two-digit North American Industry Classification System (NAICS) codes. We asked the participants directly in which industry they work, due to the anonymous nature of the survey, which precludes the option to add such information later on manually. The industry is an important control variable, due to differences in regulatory requirements, the skill level of employees, or environmental uncertainty that potentially impact managers' ability to engage in fraudulent practices. Finally, participants were asked to provide information about the size (annual sales) and number of employees of the company they work for as further control variables.

3.3 Model Estimation

We aim to test the hypothesis that firms with managers who show a high degree of malevolent personality traits will engage in more accounting manipulation. Operational-

ized, we estimate the following main model using standard ordinary least squares (OLS) regressions with robust standard errors (MacKinnon and White, 1985):

$$ACCMANIP_i = \alpha_i + \beta_i DARKTRIAD + \beta_i INDUSTRY + \beta_i SALES + \beta_i EMPL + \epsilon_i.$$

In addition, we hypothesize that having internal control mechanisms, such as an internal audit function and a whistle-blower policy, can reduce the overall impact of dark personality managers on accounting manipulation. In order to test our second hypothesis, we expand our main model by additional explanatory variables (IA + WBP) and interaction terms (DARKTRIAD \times IA and DARKTRIAD \times WBP).

Our dependent variable is an ordered categorical variable, based on a twelve-item, five-point Likert-scale. Thus, the observations for the dependent variable can fall in five distinct groups. As standard OLS assumptions may be violated in this case, we additionally report results using (i) (binary) logistic regression, and (ii) ordinal logistic regression in the Appendix (Table A.1). While all three estimation methods (OLS, (binary) logistic regression, and ordinal logistic regression) lead to slightly different marginal effects, the direction and significance are identical in all three estimation methods, thereby providing evidence in support of the robustness of our findings. Given that the results are comparable, we mainly focus on the interpretation of OLS results throughout the next section.

4 Results

4.1 Correlation Matrix

We begin our analysis with a look at bivariate correlations between our variables of interest. Table 3 reports the Pearson correlations. We observe a strong and positive correlation between the dark triad measure and the accounting manipulation measure. The correlations also show a very high positive association within the dark triad measure and each sub-scale. Also, there is a positive association between the number of employees in a company as well as the annual sales levels with having an internal audit and whistle-blower policy within the company.

Insert Table 3 here

4.2 Hypothesis Testing

Table 4 reports the main regression results. We begin with our first hypothesis. Column 1 indicates a positive correlation between dark triad personality traits and accounting manipulation. The regression coefficient amounts to .55 and is statistically highly significant, which a t -statistic of 14.91. The coefficient indicates that a one-unit increase in the dark triad scale is associated with an increase of the accounting manipulation scale of 0.55. While we discuss the effect sizes, it is, however, important to note that getting a precise estimate of the magnitude of the effect is not the goal of this survey paper and a task better suited for large-scale empirical-archival research (Libby et al., 2002).

In Column 2, we add the internal control measures. We still observe a large and highly significant correlation on DARKTRIAD. Interestingly, both internal control dummy variables are statistically not different from zero in this specification. The results are consistent with Hypothesis 1: Fraudulent accounting actions are significantly more common in firms with managers who score high on the dark triad scale.

Insert Table 4 here

The binary logit and ordered logit regressions (see Table A.1 in the appendix) support our notion. According to our logistic regression results, a one-unit increase on the dark triad scale increases the propensity to commit accounting manipulation by 22 percentage points. The marginal effects at the median in our ordered logistic regression indicate that a one-unit increase on the dark triad scale increases the probability of moving from level 2 on the accounting manipulation scale to level 3 by eight percentage points.

We continue with our second hypothesis. Columns 3 to 5 present regressions including the interaction effects between managerial personality traits and internal control mechanisms. While Column 3 only includes the interaction effect with IA, and Column 4 only includes the interaction effect with WBP, Column 5 includes both interactions. For all

models, we observe a statistically significant positive coefficient on DARKTRIAD. Interestingly, the interaction effects indicate that in companies with an internal audit function the detrimental effect of dark triad managers is stronger than in companies without an internal audit function. For companies without an internal audit function, a one-unit increase in the dark triad scale is associated with an increase in the accounting manipulation scale of 0.25. In companies with an internal audit function, however, the effect is almost twice as large. Here, a one-unit increase in the dark triad scale corresponds to a 0.55 increase in the accounting manipulation scale.

One of the concerns is that multicollinearity between the dark triad and internal audit variable is driving the results in the interaction model. To check for this issue, we estimate another model, comparing subsamples of companies with or without internal audit functions. Splitting the sample has two effects: (i) we are no longer able to specially look at interaction variables with differing intercepts and slopes, but (ii) we can still compare differences in slopes for the dark triad variable depending on whether or not the company that they work for has an internal audit function, without the concern of multicollinearity between DARKTRIAD and internal audit variables. The results in Table 5 indicate that managers scoring higher on the dark triad scale engage in more accounting manipulation, both in the subset for companies without an internal audit department (Column 1) and for companies with such a department (Column 2). However, in the former case a one-unit increase on the dark triad scale only leads to a 0.24 increase (t -statistic of 2.37) on the accounting manipulation scale, compared to a 0.6 increase (t -statistic of 11.73) on the accounting manipulation scale for companies with an internal audit department.

Insert Table 5 here

Again, the results are supported by the binary logit and ordered logit regressions (see Table A.1 in the appendix). The probability of participating in accounting manipulation increases by 28 percentage points for companies with an internal audit function compared to 12 percentage points for companies with no internal audit function. Also, for companies with an internal control function, dark triad managers are more than two times more

likely to move the company from level 2 to level 3 on the accounting manipulation scale (7%-points), compared to companies with no internal audit function (3%-points).

Surprisingly, our results contradict Hypotheses 2a and 2b. We do not find evidence that the effect of dark personality managers will be more pronounced in firms without an internal audit function compared to firms with an internal audit function. Instead, the effect of dark triad managers is significantly stronger in firms with an internal audit function. With respect to the impact of whistle blower policies, we only observe significant results in Column 4, which does not include an interaction between dark triad managerial traits and internal audit. We do not find any significant results if we include both dark triad interactions—internal audit and whistle-blower policy—such as in Column 5. Thus, having a whistle-blower policy in place seems to matter only when no internal audit function is in place.

The surprising result is that, for managers with a high dark triad score, there is a higher correlation to engage in accounting manipulation if the company has an internal control function. To investigate this further, we look at the nature of the internal control function in a more detailed analysis. In particular, we focus on the structure of the internal control function, instead of the mere presence of it. Table 6 summarizes the results. The models include all 397 observations where participants indicated that their company has an internal control function.

In line with Table 4, our results indicate a positive correlation between managers with dark triad personality traits and accounting manipulation. In particular, a one-unit increase in DARKTRIAD corresponds to a 0.57 increase on the accounting manipulation scale (Column 1, t -statistic of 10.62), compared to a 0.55 increase in the interaction specification of internal audit in Column 5 of Table 4. Interestingly, using an external team for the internal control function, however, seems to be able to mitigate the negative impact of dark personality traits on accounting manipulation (Column 2). The negative interaction effect of DARKTRIAD and outsourced internal control functions (Column 2, -0.45, t -statistic of 3.21) shows that a one-unit increase in the dark triad score corresponds to *only* a 0.27 ($=0.72-0.45$) increase on the accounting manipulation scale. The baseline

in this case is an internal control function that is staffed by internal personnel. For this baseline, we observe a slope of 0.72. Thus, compared to the baseline, the internal control function that is staffed by external personnel reduces the impact of managerial dark personality traits by roughly 60%. It appears that an internal audit function is only effective in taming the adverse effects of dark triad managers, if external personnel staffs it. As survey answers are the basis of the results, the findings are correlational, not causal. A discussion of potential consequences and related limitations follows in the next section.

Insert Table 6 here

The financial industry has been subjected to extreme scrutiny regarding ethical behavior, especially since the Global Financial Crisis. Based on the poor reputation of the financial industry, and the fact that a large degree (35% in the whole sample) of our survey respondents work in the finance or insurance industry (see Table 1), a potential concern may be that our results are driven by industry specific effects. Note that we already control for industry-specific effects by including industry dummies in our main specification. To further address this concern, we split the sample and compare respondents who work in the finance or insurance industry and respondents who work in non-finance related industries. Table 7 indicates that managers who score higher on the dark triad scale engage in more accounting manipulation, both in the finance and insurance industries and in non-finance related industries. Both coefficients are highly significant. We do, however, observe a larger coefficient in the financial industry sample (0.71 compared to 0.47).

Insert Table 7 here

5 Discussion

From upper-echelons theory (Hambrick and Mason, 1984) to the managerial style effects literature starting with Bertrand and Shoar (2003), research has shown that personality

traits, especially of top management personnel, can influence how an organization makes decisions and ultimately affect firm outcomes. Specifically, looking at malevolent personality traits, the research in accounting so far has focused on archival studies investigating narcissism and its impact on real earnings management (Olsen et al., 2014), narcissism and reporting quality (Ham et al., 2017; Capalbo et al., 2018; Buchholz et al., 2019), and experimental evidence from accounting students on Machiavellianism and rationalization of misreporting (Murphy, 2012). Further experimental evidence established that requiring range disclosures for managerial estimates reduces aggressive reporting by management and that the effect is strongest for managers who score high on all three dark triad personality traits (Majors, 2016).

We contribute to this literature and examine the relation between dark triad personality traits of managers in the accounting and finance departments of US companies and a firm's tendency to engage in accounting manipulation. Effectively, we use committed, but undiscovered accounting fraud, thereby putting our emphasis on practices that are clearly outside the discretion provided by GAAP. We use a survey setting, where participants rate their immediate superior on dark triad personality traits as well as answer questions about how prevalent certain accounting manipulation practices are in their company. Our results indicate that dark personality traits are positively associated with accounting manipulation, controlling for industry, size, and number of employees in the company. The results are robust to different estimation techniques.

We further investigate whether internal control mechanisms are able to effectively contain the negative impact of dark triad managers. While whistle-blower policies and an internal audit function that is composed of in-house personnel do not seem to be effective in curbing the detrimental impact of dark triad managers, having an internal audit function that is staffed with external personnel can mitigate the degree of manipulation by dark triad managers. In particular, our results indicate that an outsourced internal audit department can reduce the impact of managerial dark personality traits by roughly 60%.

Our results have important practical implications. In particular, our results sug-

gest that managers with dark personalities are able to manipulate and take advantage of internal audit functions that are staffed with in-house personnel. Hence, our results underscore the importance of *outsourced* internal audit department, with *external* personnel, to be able to effectively curtail unethical and illegal managerial behavior. Our results also shed new light on whistle-blower policies, which are believed to be invaluable in detecting fraud and curbing many forms of illegal or unethical behavior (Coram et al., 2008; Feltovich and Hamaguchi, 2018; Morgan, 2005). Our results, however, suggest that such policies are not very effective in the context of dark personality traits. It may be the case that managers with pronounced dark triad personality traits successfully manipulate potential whistle blowers so as not to blow the whistle. Or perhaps, their insensitive and cruel disregard for others may lead to fear of retribution.

Our study also highlights the importance for practitioners, corporate governance bodies, and regulators to recognize the role of the individual. People with divergent traits and personality characteristics may react differently to the existing set of rules and incentives. Putting practices in place to increase awareness of managers' predispositions may be a valuable first step. Furthermore, companies are able to screen for these dark personality traits effectively, either by using personality self-assessments or by using informer-ratings, as both are able to provide an indication of dark personality traits (Connelly and Ones, 2010).

Notwithstanding the contributions and practical implications, our study has a number of caveats. First, a directly observable measure of management personality would be ideal. As self-rated measures or professional psychological assessments of managers are unlikely to come by (Koch and Biemann, 2014), we employ informant-based rating via the dirty dozen scale. The dirty dozen scale is commonly used and validated measure of personality characteristics (Jonason et al., 2013; Webster and Jonason, 2013). To reduce social desirability bias, we ask survey respondents to answer the questions not about themselves, but about their immediate superior (Crowne and Marlowe, 1964; Rokeach, 1985), and hide the questions within nondescript items. This way, participants do not immediately sense that they are asked about a potentially negative personality trait.

Such third-party ratings have been shown to accurately capture personality traits (see, e. g. Connelly and Ones, 2010; Oh et al., 2011).

Second, financial reporting manipulation is a hard to measure and context-specific construct. Standard (calculated) proxies used in archival research, such as earnings management, earnings smoothness, or the number of material weaknesses, are impossible to employ in survey-based research. Choosing a self-developed scale for financial reporting fraud makes it difficult to compare our findings directly with studies in the field. The advantage of our proxy, however, is its unique nature. We are aware of no other study focused on accounting fraud that can detect ongoing, yet undiscovered fraudulent actions in the corporate setting. On a spectrum from the highest quality and transparent reporting over to (arguably) “unnecessary” smooth—but legal—managed earnings, our proxy, measuring fraudulent activity, sits at the end of the spectrum. As the majority of the research in this area is motivated by corporate scandals such as Enron and WorldCom, we believe that our scale is better suited to measure similar types of unethical behaviour compared to traditional earnings management type measures. Concerning the comparability of the findings, the results are in line with extant research that argues that dark triad traits of top executives have a detrimental effect on reporting quality (Buchholz et al., 2019; Capalbo et al., 2018; Ham et al., 2017; Murphy, 2012; Clarke, 1993).

Third, a common concern in survey-based research is that the results are affected by endogeneity issues. Given the data, we are able to discuss correlations between the variables of interest but cannot make causal claims about the stated relationship between dark triad managers and accounting fraud. We cannot rule out the possibility that the correlation we find might have a causal arrow that points the other way and that managers with dark personality traits self-select into firms that engage in accounting fraud. However, we see few reasons why causation should run this way. One reason dark triad personalities specifically choose to work in companies with reporting quality shortcomings might be their need for attention and thrill-seeking (Paulhus and Jones, 2015). Being able to change a company and be viewed as a star turnaround manager might, on the one hand, be a motivation to join such a company. On the other hand,

putting company interests before their own interests is atypical for dark personalities. Thus, we are cautiously optimistic about the validity of our findings. Nevertheless, the alternative explanation can be a fruitful avenue for time- and manager-matched panel-based research.

Apart from the reverse causality issue, there may be omitted variable bias, such that the managerial personality variable is only picking up unobserved firm effects. Anonymity of survey participants is a trade-off between getting the most accurate measurements of the variables of interest and not being able to control for a broad variety of firm-specific effects. Even though we can control for the specific industry and size of the company, there may still be unobserved firm characteristics affecting the presence and intensity of fraud. This issue is of particular concern for the moderating effect of internal audit departments. It could be the case that the dummy variable for having an internal audit department or not is picking up on “high fraud risk” in general, because high fraud risk might lead to a company having an internal audit department. Together with the results on the composition of internal audit functions this, however, seems unlikely. We are not aware of any research indicating that having an in-house or outsourced internal audit function is consistently related to higher or lower fraud risk and not just a matter of company preference. For example, James (2003) show that outsourcing does not affect investor perception of fraud protection. Although the findings on the composition of internal audit departments strengthen the plausibility of the main results, they are still opposite to findings by Coram et al. (2008), who show that organizations are more likely to detect and report fraud if they have their internal audit function in-house. In their study of 491 companies in Australia and New Zealand on internal controls and misappropriation of assets, however, managerial personality traits were not part of the research focus. Thus, our finding is an important contribution towards a better understanding of the role of internal audit functions. Having a high degree of dark triad managers within the company might reverse the prior findings of Coram et al. (2008). Thus, our findings highlight the importance for investors and regulators of choosing the appropriate internal control mechanism based on companies’ executive teams.

Keeping these concerns in mind, our study design offers new and unique insights into the relationship between managerial effects and reporting manipulation that nicely complement recent findings with existing archival proxies, such as signature or picture size, relative compensation, and use of first-person pronouns in earnings call (see, e.g., Ham et al., 2017; Olsen et al., 2014; Chatterjee and Hambrick, 2007), and experimental data. Asking practitioners directly about their assessment of managerial personality and the frequency of certain fraudulent actions helps to show the important role of executive personality. The survey design also enables us to study so far undetected fraud, which is almost impossible to examine with experimental or archival data. Being able to investigate ongoing fraudulent actions—information that would not be possible to obtain by any other data gathering method—is an important contribution to the existing literature. This is particularly true, considering that fraudulent reporting tends to remain hidden for long periods of time or even indefinitely (Zingales, 2015).

We contribute to the literature by exploring an important issue with regulatory implications in the triangle between personality traits, disclosure quality, and internal control mechanisms. Future research may want to follow up with studies on the composition of internal audit functions and their effectiveness in preventing fraud in different managerial style settings. Borrowing from existing literature on audit committee effectiveness, future research on internal audit effectiveness may find comparable results on the limited effectiveness of internal controls, if the controls are not strictly independent (see, e.g., Abbott and Parker, 2000; Bronson et al., 2009; Karamanou and Vafeas, 2005).

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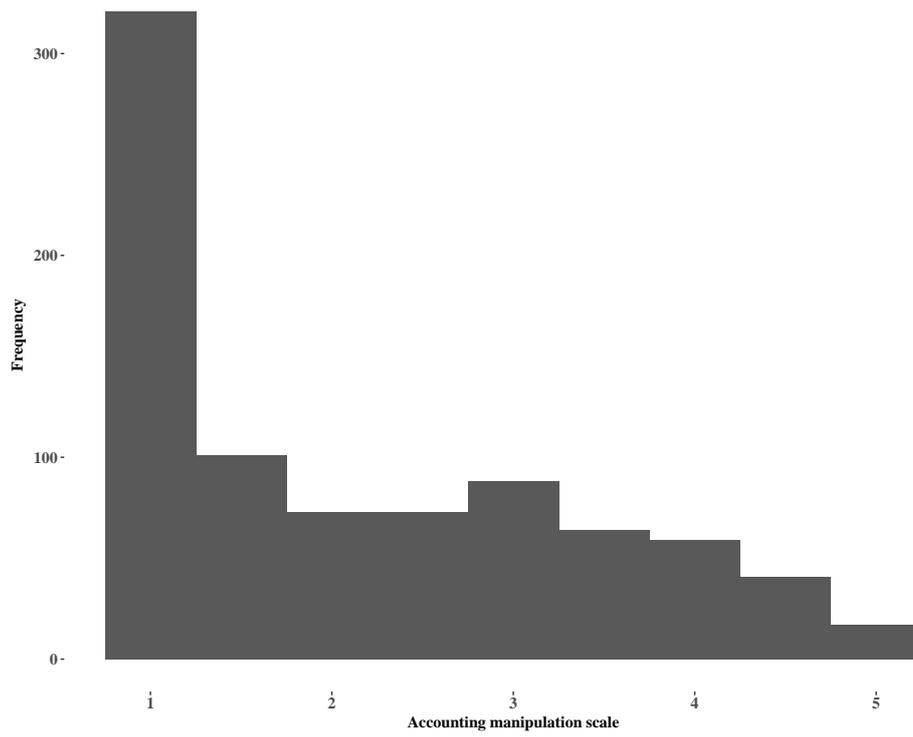


Figure 1: Distribution of Dependent Variable 'Accounting Manipulation'

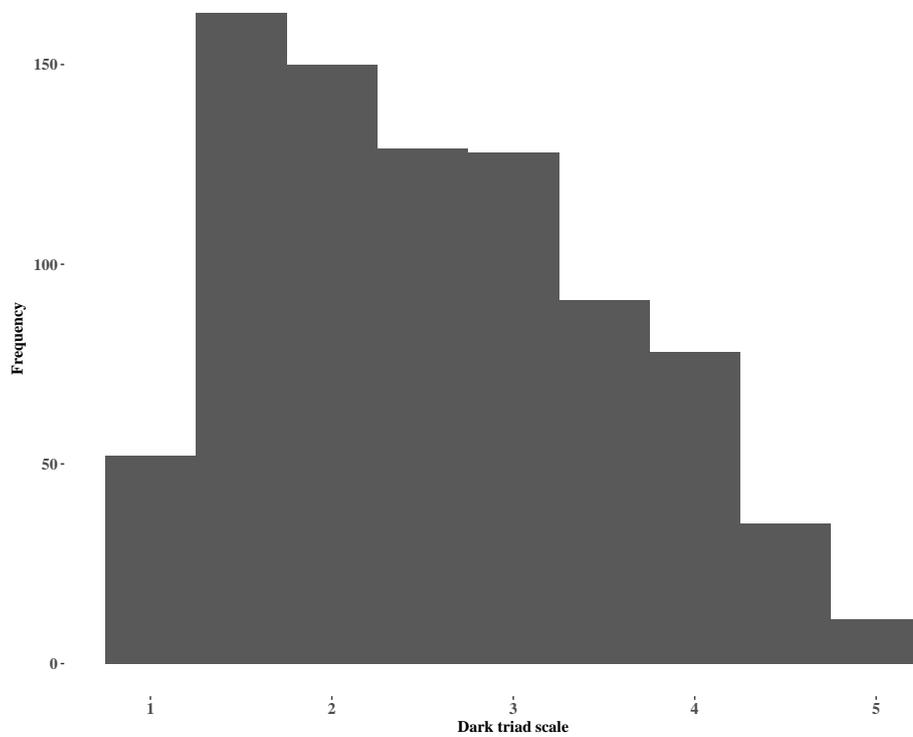


Figure 2: Distribution of Independent Variable 'Dark Triad'

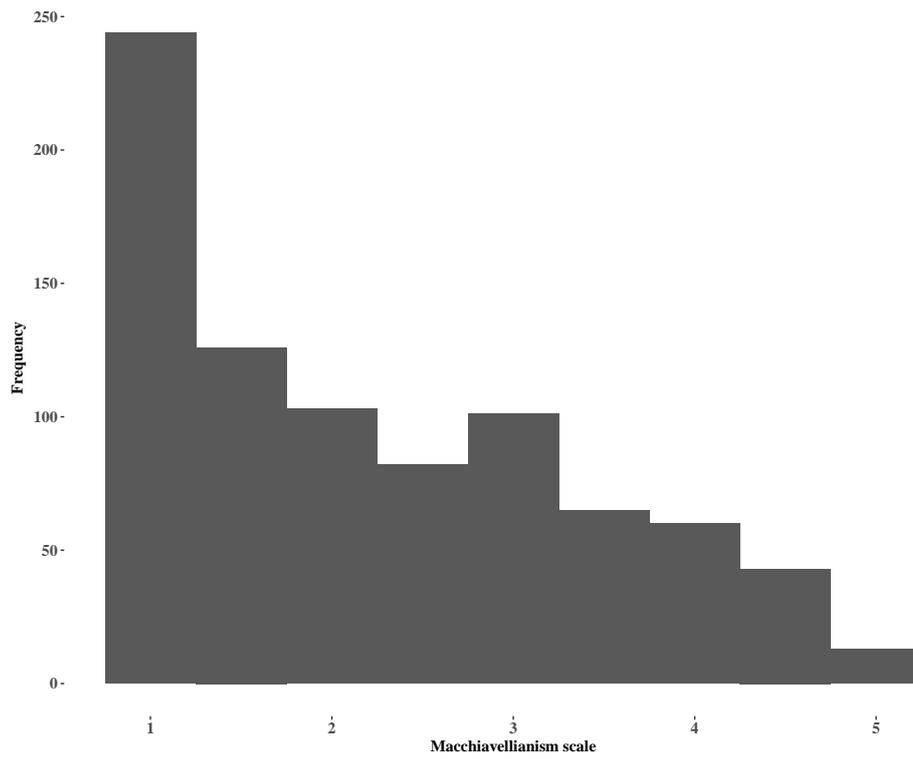


Figure 3: Distribution of scores on Machiavellianism scale

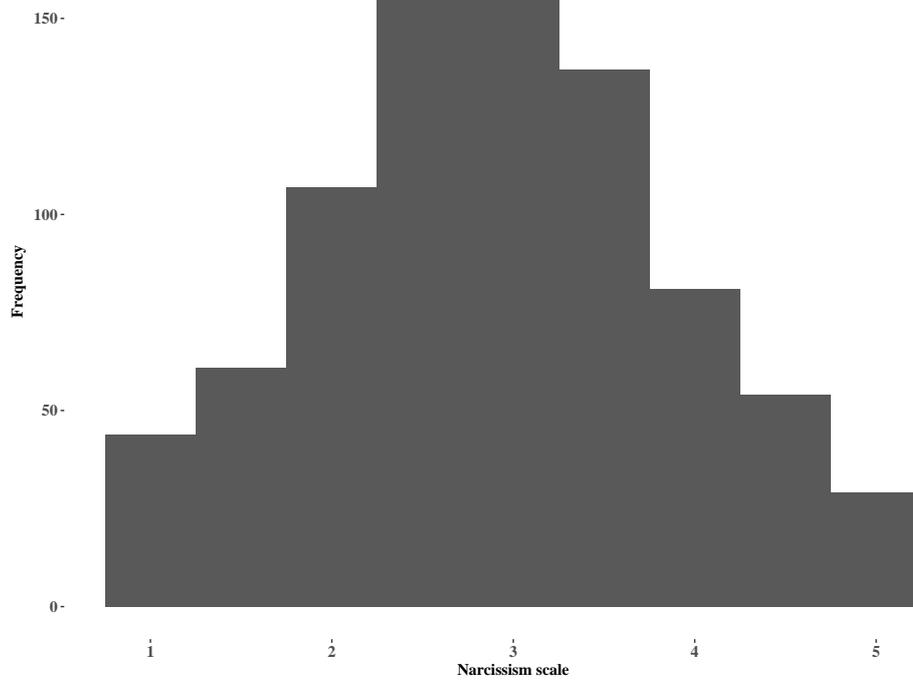


Figure 4: Distribution of scores on narcissism scale

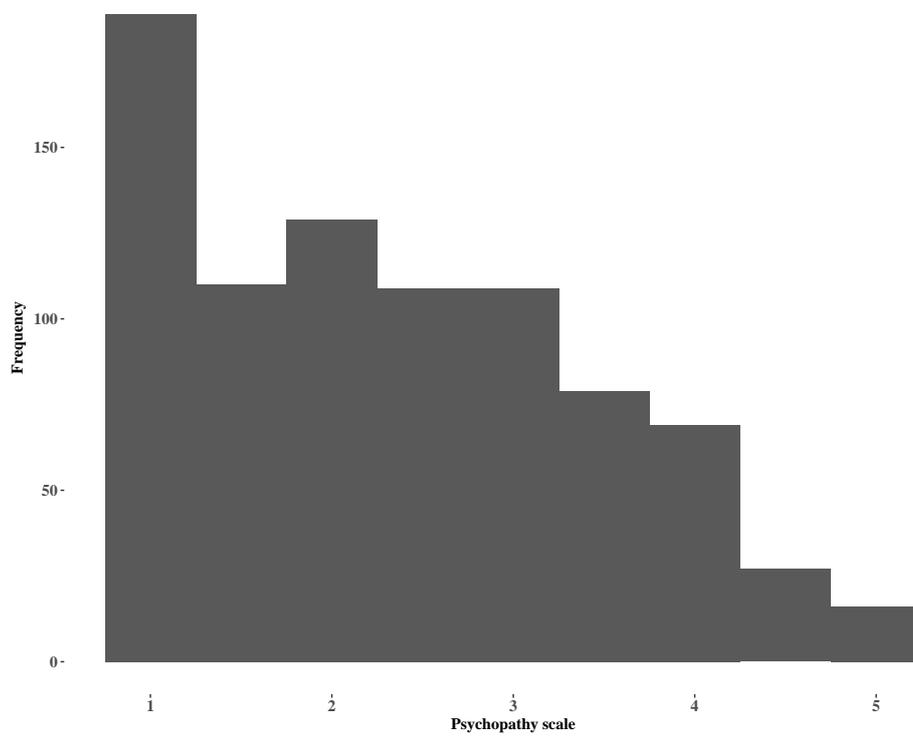


Figure 5: Distribution of scores on psychopathy scale

Table 1: Observations Per Industry

Industry	n
1 Finance or insurance	293
2 Professional, scientific or technical services	80
3 Other services (except public administration)	75
4 Manufacturing	55
5 Health care or social assistance	48
6 Retail trade	40
7 Educational services	36
8 NGOs or non-profit organizations	32
9 Unclassified establishments	31
10 Construction	24
11 Management of companies or enterprises	24
12 Utilities	18
13 Wholesale trade	18
14 Real estate or rental and leasing	14
15 Arts, entertainment or recreation	12
16 Admin, support, waste management or remediation services	11
17 Transportation or warehousing	8
18 Accommodation or food services	7
19 Forestry, fishing, hunting or agriculture support	6
20 Information	4
21 Mining	1

Table 2: Summary Statistics

Variable	n	q25	mean	median	q75	min	max	sd
Accounting Manipulation	837	1.00	2.18	1.75	3.08	1.00	5.00	1.21
Dark Triad	837	1.75	2.60	2.50	3.33	1.00	5.00	0.98
Machiavellianism	837	1.25	2.32	2.00	3.25	1.00	5.00	1.17
Narcissism	837	2.25	3.02	3.00	3.75	1.00	5.00	0.98
Psychopathy	837	1.50	2.45	2.25	3.25	1.00	5.00	1.11
	n	0	1	2	3			
Internal-audit 0/1	837	224	613					
Whistle-blowing 0/1	597	255	342					
Internal-audit -who-	580		202	143	235			

Variable definitions: Accounting Manipulation = 12-item scale from 1 to 5 measuring illegal accounting practices based on Schilit and Perler (2010); Darktriad = Composite Scale from 1 to 5 measuring managerial personality traits (Machiavellianism, narcissism, psychopathy) based on Jonason and Webster (2010); Macchiavellianism = Sub-scale focused on machiavellianism based on Jonason and Webster (2010); Narcissism = Sub-scale focused on narcissism based on Jonason and Webster (2010); Psychopathy = Sub-scale focused on psychopathy based on Jonason and Webster (2010); Internalaudit 0/1 = Dummy variable indicating a company with or without an internal audit department; Whistle-blowing policy 0/1 = Dummy variable indicating a company with or without a whistle-blowing policy; Internalaudit -who- = Categorical variable indicating the staffing structure of the internal audit department.

Table 3: Correlation Table

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Accounting Manipulation								
(2) Dark Triad	0.50***							
(3) Narcissism	0.41***	0.85***						
(4) Machiavellianism	0.51***	0.95***	0.71***					
(5) Psychopathy	0.44***	0.92***	0.64***	0.85***				
(6) Internal-audit 0/1	0.09*	0.05	0.09**	0.04	0.00			
(7) Whistle-blowing policy 0/1	0.08	0.11*	0.14***	0.07	0.08*	0.50***		
(8) Number of Employees	0.08*	0.04	0.05	0.03	0.04	0.37***	0.45***	
(9) Annual Sales	0.01	0.03	0.04	0.02	0.02	0.31***	0.27***	0.58***

Variable definitions: Accounting Manipulation = 12-item scale from 1 to 5 measuring illegal accounting practices based on Schilit and Perler (2010); Darktriad = Composite Scale from 1 to 5 measuring managerial personality traits (Machiavellianism, narcissism, psychopathy) based on Jonason and Webster (2010); Macchiavellianism, Narcissism, and Psychopathy = 4-item subscales from Darktriad measure based on Jonason and Webster (2010); Internalaudit 0/1 = Dummy variable indicating a company with or without an internal audit department; Whistle-blowing policy 0/1 = Dummy variable indicating a company with or without a whistle-blowing policy; Number of Employees = 8-level variable indicating the number of employees of the respondents firm; Annual Sales = 6-level variable indicating the size (annual revenue) of the respondents company. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4: Managerial Dark Triad Personality and Accounting Manipulation

	(1)	(2)	(3)	(4)	(5)
(Intercept)	-0.01 (-0.02)	-0.21 (-0.63)	0.47 (1.24)	0.17 (0.46)	0.53 (1.36)
Darktriad	0.55*** (14.91)	0.51*** (11.34)	0.26** (2.82)	0.38*** (5.32)	0.25* (2.54)
Audit 0/1		-0.01 (-0.12)	-0.93** (-2.95)	-0.00 (-0.04)	-0.82* (-2.53)
WBP 0/1		-0.03 (-0.26)	-0.03 (-0.26)	-0.61* (-2.23)	-0.24 (-0.92)
Darktriad x Audit 0/1			0.34** (3.21)		0.30** (2.69)
Darktriad x WBP 0/1				0.21* (2.33)	0.08 (0.85)
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Adj. R ²	0.32	0.34	0.35	0.35	0.35
Obs.	837	597	597	597	597

Regression coefficients are presented with t -values in parentheses and robust standard errors (MacKinnon and White, 1985). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Variable definitions: Darktriad = Composite Scale from 1 to 5 measuring managerial personality traits (Machiavellianism, narcissism, psychopathy) based on Jonason and Webster (2010); Internal Audit 0/1 = Dummy variable indicating a company with or without an internal audit department; WBP 0/1 = Dummy variable indicating a company with or without a whistle-blowing policy; Controls = Dummy variables for Industry, Annual Sales, and Number of Employees; Dependent variable Accounting Manipulation = 12-item scale from 1 to 5 measuring illegal accounting practices based on Schilit and Perler (2010).

Table 5: Subsample: Internal Audit

	(1)	(2)
	No internal audit	Internal audit
(Intercept)	0.25 (0.60)	0.45 (1.20)
Darktriad	0.24* (2.37)	0.60*** (11.73)
Whistle-blowing policy 0/1	-0.16 (-0.59)	0.05 (0.39)
Controls	<i>yes</i>	<i>yes</i>
Adj. R ²	0.25	0.42
Obs.	187	410

Regression coefficients are presented with t -values in parentheses and robust standard errors (MacKinnon and White, 1985). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Subset Definition: The sample is split into respondents who work in firms with an internal audit department and respondents who work in firms without an internal audit department. Variable definitions: Darktriad = Composite Scale from 1 to 5 measuring managerial personality traits (Machiavellianism, narcissism, psychopathy) based on Jonason and Webster (2010); Whistle-blowing policy 0/1 = Dummy variable indicating a company with or without a whistle-blowing policy; Controls = Dummy variables for Industry, Annual Sales, and Number of Employees; Dependent variable Accounting Manipulation = 12-item scale from 1 to 5 measuring illegal accounting practices based on Schilit and Perler (2010).

Table 6: Who runs the internal audit function?

	(1)	(2)
(Intercept)	0.62 (1.45)	0.23 (0.50)
Darktriad	0.57*** (10.62)	0.72*** (6.82)
Internal Audit -external team-	-0.31* (-2.17)	1.02* (2.32)
Internal Audit - mixed team-	-0.22 (-1.82)	0.27 (0.91)
WBP 0/1	0.03 (0.28)	0.08 (0.27)
Darktriad x WBP 0/1		-0.02 (-0.17)
Darktriad x IA -external team-		-0.45** (-3.21)
Darktriad x IA -mixed team-		-0.16 (-1.53)
Controls	<i>yes</i>	<i>yes</i>
Adj. R ²	0.42	0.43
Obs.	397	397

Regression coefficients are presented with t -values in parentheses and with robust standard errors (MacKinnon and White, 1985). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Variable definitions: Darktriad = Composite Scale from 1 to 5 measuring managerial personality traits (Machiavellianism, narcissism, psychopathy) based on Jonason and Webster (2010); Internal Audit - external team - = Dummy variable indicating a company with an internal audit department that is staffed by external people; Internal Audit - mixed team - = Dummy variable indicating a company with an internal audit department that is staffed by both internal and external people; WBP 0/1 = Dummy variable indicating a company with or without a whistle-blowing policy; Controls = Dummy variables for Industry, Annual Sales, and Number of Employees; Dependent variable Accounting Manipulation = 12-item scale from 1 to 5 measuring illegal accounting practices based on Schilit and Perler (2010).

Table 7: Subsample: Financial Industry

	(1) Financial Firms	(2) Non-Financial Firms
(Intercept)	0.29 (0.91)	0.38 (1.58)
Darktriad	0.71*** (10.46)	0.47*** (8.31)
Internal Audit 0/1	-0.29 (-1.36)	0.08 (0.53)
Whistle-blowing policy 0/1	-0.16 (-0.90)	0.02 (0.12)
Controls	<i>yes</i>	<i>yes</i>
Adj. R ²	0.35	0.24
Obs.	212	385

Regression coefficients are presented with t -values in parentheses and robust standard errors (MacKinnon and White, 1985). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Subset Definition: The sample is split into respondents who work in the Finance / Insurance industry and respondents who work in other industries. Variable definitions: Darktriad = Composite Scale from 1 to 5 measuring managerial personality traits (Machiavellianism, narcissism, psychopathy) based on Jonason and Webster (2010); Internal Audit 0/1 = Dummy variable indicating a company with or without an internal audit department; Whistle-blowing policy 0/1 = Dummy variable indicating a company with or without a whistle-blowing policy; Controls = Dummy variables for Annual Sales, and Number of Employees; Dependent variable Accounting Manipulation = 12-item scale from 1 to 5 measuring illegal accounting practices based on Schilit and Perler (2010).

A Survey questions

<screening question>

At which department do you primarily work within at your organization?

- Accounting
- Administration
- Customer Service
- Finance
- Human Resources
- Legal
- Marketing
- Sales
- IT
- Other
- I don't work

<screening question / attention check>

Everyone has hobbies. Nevertheless, we would like you to skip this question to show that you are reading carefully. Do not click any of the buttons corresponding to bike riding, hiking, swimming, playing sports, reading or watching TV.

- Bike riding
- Hiking
- Swimming
- Playing sports
- Reading
- Watching TV

<whistleblower policy question>

Does your organization have a whistleblowing policy?

- Yes
- No
- I don't know

<internal audit question>

Does your organization have an internal audit function?

- Yes
- No
- I don't know

<internal audit question>

Who performs the internal audit function?

- Own staff
- External firm
- Combination
- I don't know

<dirty dozen questions mixed with leadership scale>

Please answer the following questions about your direct supervisor at work.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
He/she lets group members know what is expected of them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she decides what shall be done and how it shall be done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she tends to manipulate others to get his/her way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she makes sure that his part in the group is understood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she schedules the work to be done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she maintains definite standards of performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she has a desire to be admired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she tends to lack remorse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she asks that the group members follow standard rules and regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she explains the way any task should be carried out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she is friendly and polite	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she tends to be unconcerned with the morality of his/her actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she uses deceit or lies to get his/her way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she does little things to make it pleasant to be a member of the group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she puts suggestions made by the group into operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
He/she treats all group members as his/her equals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

He/she gives advance notice of changes	<input type="radio"/>				
He/she tends to be callous or insensitive	<input type="radio"/>				
He/she uses flattery to get his/her way	<input type="radio"/>				
He/she keeps to himself	<input type="radio"/>				
He/she looks out for the personal welfare of group members	<input type="radio"/>				
He/she is willing to make changes	<input type="radio"/>				
He/she tends to seek prestige and status	<input type="radio"/>				
He/she helps me overcome problems which stop me from carrying out my task	<input type="radio"/>				
He/she helps me make working on my tasks more pleasant	<input type="radio"/>				
He/she tends to be cynical	<input type="radio"/>				
When faced with a problem, he/she consults with his/her subordinates	<input type="radio"/>				
He/she tends to exploit others towards his/her own end	<input type="radio"/>				
Before making decisions, he/she gives serious consideration to what his/her subordinates have to say	<input type="radio"/>				
He/she asks subordinates for their suggestions concerning how to carry out assignments	<input type="radio"/>				
He/she tends to expect special favors from others	<input type="radio"/>				
Before taking action he/she consults with his/her subordinates	<input type="radio"/>				
He/she asks subordinates for suggestions on what assignments should be made	<input type="radio"/>				

He/she wants others to pay attention to him/her

<accounting manipulation questions>

How frequently does your company engage in the following accounting practices? Your responses are completely anonymous.

	Never	Almost Never (once every two years)	Rarely (once a year)	Sometimes (once every two quarters)	Frequently (every quarter)
Recording revenue prior to completing all services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recording revenue prior to product shipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recording revenue for products that are not required to be purchased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recording revenue for sales that did not take place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amortizing costs too slowly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capitalizing normal operating costs in order to reduce expenses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Failing to write down or write off impaired assets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Failing to record expenses and liabilities when future services remain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changing accounting assumptions to foster manipulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating a rainy day reserve as a revenue source to bolster future performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Holding back revenue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accelerating expenses into the current period	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<industry question>

In which industry are you employed?

- Forestry, fishing, hunting or agriculture support
- Mining
- Utilities
- Construction
- Manufacturing
- Wholesale trade
- Retail trade
- Transportation or warehousing
- Information
- Finance or insurance
- Real estate or rental and leasing
- Professional, scientific or technical services
- Management of companies or enterprises
- Admin, support, waste management or remediation services
- Educational services
- Health care or social assistance
- Arts, entertainment or recreation
- Accommodation or food services
- NGOs or non-profit organizations
- Other services (except public administration)
- Unclassified establishments

<number of employees question>

How many employees work in your organization?

- 1-50
- 51-250
- 251-500
- 501-1,000
- 1,001-5,000
- 5,001-10,000
- 10,001-25,000
- 25,001 or more

<sales question>

What is the annual sales revenue of your organization?

- \$0-\$99,999
- \$100,000-\$999,999
- \$1,000,000-\$4,999,999
- \$5,000,000-\$9,999,999
- \$10,000,000 - \$99,999,999
- \$100,000,000 or above

<position question>

What is your professional position in the organization you work for?

- Director/Manager
- Other employee with decision-making power
- Not a managing position

Table A.1: Robustness: Managerial Dark Triad Personality and Accounting Manipulation

Panel A shows logit regressions. Panel B shows ordered logit regressions. Regression coefficients for all models show marginal effects. For ordered logit the marginal effects are at the mean. t -values/ z -values are in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Variable definitions: Darktriad = Composite Scale from 1 to 5 measuring managerial personality traits (Machiavellianism, narcissism, psychopathy) based on Jonason and Webster (2010); Internal Audit 0/1 = Dummy variable indicating a company with or without an internal audit department; WBP 0/1 = Dummy variable indicating a company with or without a whistle-blowing policy; Controls = Dummy variables for Industry, Annual Sales, and Number of Employees; Dependent variable Accounting Manipulation = 12-item scale from 1 to 5 measuring illegal accounting practices based on Schilit and Perler (2010). Dependent variable is continuous for ordered logit regressions; binary variable for logit regressions.

Panel A: Logit regressions					
	(1)	(2)	(3)	(4)	(5)
Darktriad	0.22*** (9.86)	0.21*** (7.62)	0.11* (2.50)	0.18*** (4.56)	0.12* (2.56)
Audit 0/1		0.01 (0.08)	-0.36* (-2.22)	0.01 (0.11)	-0.41* (-2.21)
WBP 0/1		0.01 (0.22)	0.02 (0.26)	-0.09 (-0.58)	0.12 (0.66)
Darktriad x Audit 0/1			0.14* (2.44)		0.16* (2.39)
Darktriad x WBP 0/1				0.04 (0.72)	-0.04 (-0.61)
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Obs.	837	597	597	597	597
Log Likelihood	-462.33	-316.39	-313.44	-316.13	-313.25
Deviance	924.66	632.78	626.88	632.26	626.51
AIC	992.66	704.78	700.88	706.26	702.51
BIC	1153.48	862.89	863.38	868.76	869.40

Table A.1: Robustness: Managerial Dark Triad Personality and Accounting Manipulation (continued)

Panel B: Ordered logit regressions					
	(1)	(2)	(3)	(4)	(5)
Darktriad	0.08*** (7.06)	0.06*** (5.54)	0.03** (2.68)	0.05*** (4.12)	0.03* (2.47)
Audit 0/1		0.01 (0.63)	-0.05*** (-3.55)	0.01 (0.61)	-0.06*** (-3.92)
WBP 0/1		0.00 (0.02)	-0.00 (-0.08)	-0.06* (-2.19)	-0.02 (-0.57)
Darktriad x Audit 0/1			0.04** (3.06)		0.04** (2.61)
Darktriad x WBP 0/1				0.02 (1.92)	0.01 (0.55)
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Obs.	837	597	597	597	597
Log Likelihood	-1141.69	-816.63	-810.82	-814.67	-810.67
Deviance	2283.38	1633.25	1621.64	1629.33	1621.33
AIC	2357.38	1711.25	1701.64	1709.33	1703.33
BIC	2532.38	1882.54	1877.31	1885.01	1883.40