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## Critical Perspectives on Accounting

journal homepage: [www.elsevier.com/locate/cpa](https://www.elsevier.com/locate/cpa)Evidence on the homogeneity of personality traits within the auditing profession<sup>☆</sup>Stephen K. Asare<sup>a</sup>, Herman van Breuk<sup>b,\*</sup>, Kristina C. Demek<sup>c</sup><sup>a</sup> University of Florida, United States<sup>b</sup> Nyenrode Business University, Straatweg 25, 3621 BG Breukelen, The Netherlands<sup>c</sup> University of South Florida, United States

## ARTICLE INFO

## Keywords:

Personality diversity

Rhetoric-reality gap

Five Factor Model

Institutional choice model

## ABSTRACT

Audit firms' diversity initiatives have focused on enhancing surface-level diversity (e.g., gender and race). While these initiatives serve an important social and business function, we argue that they may not enhance deep-level diversity (e.g., personality traits and thinking styles), creating a gap between rhetoric and reality in terms of deep-level characteristics. We combine critical and positivistic research perspectives to make sense of this rhetoric-reality gap and specifically examine personality trait diversity in audit firms. Focusing on deep-level traits is important because people may appear diverse while thinking and acting similarly. We use data from 981 auditors to examine personality trait diversity using the Five Factor Model: neuroticism, extroversion, openness, agreeableness, and conscientiousness. Our results show a remarkable homogeneity of personality traits for auditors within the same firm type or experience level. We also find important differences within each personality trait. For example, all firm types and experience levels tend to be more homogenous on extroversion and conscientiousness, but more diverse on openness. Taken together, the results suggest that audit firms remain largely homogenous at the personality level, notwithstanding their recent diversity rhetoric and initiatives. These results provide timely evidence to support audit firms' efforts to re-evaluate and re-consider their diversity, equity, and inclusion efforts.

## 1. Introduction

Audit firms' rhetoric suggests that they embrace diversity as a core principle in their pursuit and retention of talent (Bujaki et al., 2018; Cameran et al., 2018; Durocher et al., 2016; Edgley et al., 2016).<sup>1</sup> Diversity is a multidimensional construct and includes both

<sup>☆</sup> We thank Yves Gendron (editor), two anonymous reviewers, Dirk Black, Joshua Cieslewicz, Jeffrey Cohen, Emily Hornok, Uday Murthy, Jason Smith, Greg Trompeter, Arnie Wright, Donnie Young, and Jae-Yoon Yu, participants at the 2018 ABO Research Conference, 2018 BYU Accounting Research Symposium, 7<sup>th</sup> Workshop on Audit Quality, 2017 Florida Accounting Behavioral Research Symposium, and workshop participants at the University of Central Florida, University of Groningen, and University of South Florida for their thoughtful and constructive comments on prior versions of this paper. We also gratefully acknowledge the participation of the auditors in this study.

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<sup>1</sup> In this paper, we focus on diversity, which is different from inclusion. Following a recent report from the Institute of Management Accountants on diversity and inclusion initiatives, we define diversity as "any dimension that can be used to differentiate groups and people from one another" and inclusion as "a state of being valued, respected, and supported" (IMA, 2022, p. 13).

<https://doi.org/10.1016/j.cpa.2023.102584>

Received 21 January 2020; Received in revised form 23 February 2023; Accepted 2 March 2023

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surface-level characteristics (e.g., race, gender, age, physical disability) and deep-level characteristics (e.g., attitudes, thinking styles, abilities, personality traits).<sup>2</sup> Further, audit firms' rhetoric is often anchored in diversity as an economic good or a business case (Anderson-Gough et al., 2022; Edgley et al., 2016). For instance, "D&I [Diversity and Inclusiveness] is not a catchphrase – it's a business imperative. Research tells us organizations that are highly rated in D&I have greater collaboration, higher revenue growth and higher gross margin" (Ernst & Young, 2021, p. 46).

While audit firms' diversity rhetoric embraces both surface-level characteristics and deep-level characteristics, a closer examination of their diversity initiatives shows that they primarily tilt more towards the former (Deloitte, 2020; EY, 2020; IMA, 2022; KPMG, 2020; PwC, 2020). Similarly, prior critical research on diversity in audit firms has focused on surface-level characteristics and has provided important insights on gender, ethnicity, disability, and class (Bujaki et al., 2021; Edgley et al., 2016; Komori, 2008). Much of the prior diversity research assumes that surface-level diversity is a proxy for or is congruent with deep-level characteristics (Phillips & Loyd, 2006). However, improving surface-level diversity does not necessarily translate into an improvement in deep-level diversity (Harrison et al., 2002). Thus, firms can improve demographic diversity without impacting the diversity of thinking and acting. Our objective in this paper is to propose a holistic way to understand the diversity rhetoric through a focus on personality traits. This focus is important because basic research suggests that diversity of skills and knowledge combined with a balance of personality types is desirable for effective team performance (Bradley & Hebert, 1997).

The diversity rhetoric represents an important aspirational shift for a profession that historically has maintained a mostly homogenous workforce. Traditionally, the auditing profession has valued homogeneity and emphasized that new talent should fit in the organization (Anderson-Gough et al., 1998; Hanlon, 2004). Homogeneity is valued in that it keeps "inappropriate" people out of the profession and advances the careers of those who fit in (Edgley et al., 2016). Thus, audit firms have embraced recruiting architectures, codes of best practice, and training policies that support this homogeneity, culminating in a historically predominantly white, masculine, and patriarchal workforce (Bolton & Muzio, 2007; Edgley et al., 2016; Gammie et al., 2007; Hearn, 1982).

This focus on fitting in the organization is also evident from prior studies on personality, showing that the idealized worker in auditing overwhelmingly has a sensing, thinking, and judging (STJ) personality type (Andon et al., 2010; Bealing et al., 2006; Blay & Fennema, 2017; Briggs et al., 2007; Burton et al., 2016; Jacoby, 1981; Kovar et al., 2003; Satava, 1996; Schloemer & Schloemer, 1997; Swain & Olsen, 2012; Wheeler, 2001).<sup>3</sup> Further, in corporate communications, audit firms emphasize the need for uniformity, consistency, and standardization, which is not consistent with the need for a more diverse workforce (Duff, 2011). Thus, when firms' rhetoric suggests an abandonment of the traditional homogenous infrastructure, these claims warrant critical scrutiny (Edgley et al., 2016), as established ways of thinking and doing may still prevail in the backstage, despite the firms' formal commitment to diversity, culminating in a deep-level diversity rhetoric-reality gap.

Drawing on the institutional choice model (ICM) (Heikkilä & Isett, 2004), we propose that firms are not likely to achieve deep-level diversity because firm leaders, being boundedly rational, are more likely to define the topic of diversity narrowly (i.e., focus on surface-level diversity), even while formally stating that they embrace all forms of diversity.<sup>4</sup> This narrowed focus may affect firms' assessment of the exogenous and endogenous factors associated with diversity initiatives, which, in turn, leads to formulating diversity strategies that are more focused on gender and race rather than personality traits and thinking styles. For instance, KPMG reports increases in both female hiring (from 41% in 2018/2019 to 44% in 2019/2020) and new female partner/director admissions (from 16% in 2018/2019 to 21% in 2019/2020) (KPMG, 2020). In its 2020 diversity and inclusion report, it aspired to have 50% partner and managing representation from minority groups including black representation, 50% increase in black and Hispanic workforce, and significant increase in representation from underrepresented groups in client and firmwide leadership roles (KPMG, 2021). Yet, there is no corresponding measurement or reporting of deep-level diversity. Nor can it be assumed that these gains in surface-level diversity automatically lead to deep-level diversity (Phillips & Loyd, 2006).

It is not unusual for professional firms to engage in rhetoric that leads to misalignment between strategies and actual practices. Meyer and Rowan (1977) argue that organizations typically seek legitimacy by signaling to external audiences that they are committed to some important social value, while their internal processes may not necessarily reflect such a strong commitment. These organizations maintain ceremonial conformity by buffering their formal structures and actual work activities, a phenomenon that has been described as "loose coupling" (Meyer & Rowan, 1977, p. 341). For example, audit firms use impression management strategies in recruiting activities to highlight aspects of diversity and dynamism (Bujaki et al., 2018; Daoust, 2020; Dunne et al., 2021; Picard et al., 2014). Yet, audit firms may not similarly invest in the less observable diversity attributes to maintain the homogeneous and

<sup>2</sup> Surface-level characteristics are those that can be easily and quickly noticed about a person without really knowing them well, while deep-level characteristics are more difficult to discern at first glance but can be detected over time. The former relates to biographical characteristics, such as sex, race, or gender, while the latter relates to psychological characteristics such as values, beliefs, and attitudes. People pay attention to surface-level characteristics presumably because they believe they are related to deep-level characteristics (Harrison et al., 2002).

<sup>3</sup> STJ describes a personality trait characterized by sensing, thinking, and judging. STJ indicates a person who focuses on facts and details rather than ideas and concepts (sensing), who makes decisions based on logic and reason (thinking), and who prefers to be planned and organized rather than spontaneous and flexible (judging) (Briggs et al., 2007).

<sup>4</sup> Our interest here is not to explain why firms initially become homogenous, which has been examined through the attraction-selection-attrition (ASA) framework (Schneider et al., 1995, 1998; Kandola, 2009; Durocher et al., 2016). Rather, we are interested in studying why a rhetoric-reality gap in personality can persist for a homogenous firm that has formally committed to achieving diversity. The attraction wing of the ASA framework posits that individual differences lead to differential attraction to organizations. The selection wing posits that organizational decision makers select applicants who are similar to those individuals in the organization. Finally, the attrition wing posits that individuals who are dissimilar to other organizational members leave either voluntarily or involuntarily.

standardized nature of the profession. Thus, there may be a deep-level diversity gap between rhetoric and reality (Kornberger et al., 2010).

To make sense of the rhetoric-reality gap of diversity in the auditing profession, we specifically focus on personality trait diversity, which affords the opportunity to explore a less visible, deep-level characteristic, of diversity. We focus on personality trait diversity for several reasons. First, prior critical research on diversity has focused on surface-level characteristics and has provided important insights on gender, ethnicity, disability, and class (Bujaki et al., 2021; Edgley et al., 2016; Komori, 2008). However, there is relatively less research on deep-level characteristics, such as personality traits, and whether audit firms have achieved diversity at this level. Second, the auditing profession considers personality a central aspect of its diversity wheel and it is prominent in their discourse on diversity (AICPA, 2014; Edgley et al., 2016). However, personality homogeneity is less likely to attract legislative encumbrances and, thus, can persist and worsen even as strides are made in achieving surface-level diversity. Third, surface-level diversity is often accentuated by laws requiring organizations to achieve them (e.g., Civil Rights Act of 1964), whereas organizations are relatively free, or at least not constrained by laws, to achieve deep-level diversity. As such, deep-level diversity research provides insights into firms' commitment to diversity that is relatively unaffected by legal constraints. Fourth, organizational diversity is a legitimate area of inquiry for critical research (Annisette, 2007; Edgley et al., 2016; Haynes, 2008; Walker, 2008).

To evaluate the potential deep-level diversity rhetoric-reality gap, we examine the personality traits of neuroticism, extroversion, openness, agreeableness, and conscientiousness as defined by the Five Factor Model (FFM) (Digman, 1990; John & Srivastava, 1999; Leão & Gomes, 2022; Norman, 1963). Neuroticism is a measure of emotional instability and how one handles stressful situations. Extroversion is a measure of sociability, assertiveness, and outgoingness. Openness is a measure of a person's willingness to change, experience new things, and to think creatively. Agreeableness is a measure of trust, cooperativeness, and consideration. Conscientiousness is a measure of diligence and duty. The FFM arguably describes salient aspects of personality (Goldberg, 1990), has been shown to be heritable and relatively stable over time (Costa & McCrae, 1988), and is believed to have some potential for cross-culture generalizability (Barrick & Mount, 1991; McCrae & Costa, 1997).

From a theoretical perspective, we conjecture that a deep-level diversity rhetoric-reality gap exists when misalignment occurs between firms' formal ambitions to foster diversity and actual enactment of diversity in firms' structures and practices, thus, indicating that diversity is not yet institutionalized in the auditing profession. We argue that firm's diversity rhetoric tends to be broad, for legitimacy purposes, but is much narrower in implementation to retain uniformity and standardization. Thus, even as important strides are being made in increasing surface-level diversity, diversity will not exist at the unobservable and deep-level. In this paper, we empirically test and discuss the extent of personality trait diversity in the auditing profession across different firm types and experience levels. Homogeneity in personality traits will provide evidence of a rhetoric-reality gap. By homogeneity, we mean that auditors within the same firm type or experience level are more likely to have similar personality traits. Conversely, auditors from different firm types or at different experience levels are less likely to have similar personality traits.

We use personality data from 981 auditing professionals in the Netherlands from Big Four, medium-sized, and small audit firms (i.e., Firm Type) and from staff to partner (i.e., Experience Level). The findings show that there is homogeneity of personality traits, both for audit firm types and audit experience levels. That is, auditors working within the same firm type tend to have more similar personality traits with one another, as compared with those in other firm types. Similarly, auditors of the same rank tend to exhibit more similar personality traits to each other than they do to those of different ranks. We also explore each personality trait separately. These analyses show that Big Four firms and higher ranked auditors tend to be homogenous on neuroticism, whereas the non-Big Four firms and lower ranked auditors tend to be more diverse on this trait. All firm types and experience levels tend to be homogeneous on extroversion and conscientiousness. On agreeableness, medium-sized audit firms, senior managers, and partners tend to be homogenous, whereas the other firm types and experience levels tend to exhibit more diversity. On openness, all firm types and experience levels tend to be diverse.

This study contributes to the literature in several ways. First, by using data on the personality traits of audit professionals, we provide insights into the question of whether audit firms have realized diversity on deep-level characteristics. Our results raise the possibility that audit firms may not possess the personality trait diversity needed to structure effective teams for complex audit work. This is an important observation because research suggests that diversity of skills and knowledge combined with a balance of personality types is desirable for effective team performance (Bradley & Hebert, 1997). Thus, as an example of this balance, while an extrovert will more readily communicate, an audit team of too many extroverts can be dysfunctional as team members can interrupt each other to express their views (Bradley & Hebert, 1997). While audit firms have laudably focused on increasing surface-level diversity, perhaps because of the ease with which demographic homogeneity can be spotted, this focus does not seem to translate into deep-level diversity. By focusing on the construct of diversity, we extend prior research that examines the personality traits of auditors (Bealing et al., 2006; Blay & Fennema, 2017; Burton et al., 2016; Dalton et al., 2014b; Kovar et al., 2003; Swain & Olsen, 2012).

Second, we contribute to the interdisciplinary accounting literature by combining critical and positivistic research perspectives to examine our research question, consistent with recent efforts in the critical accounting literature (e.g., Ben-Amar et al., 2021; Enderich & Trapp, 2018). Our use of personality trait data provides an important contribution to prior research that primarily uses corporate communications and interviews to examine the audit firms' diversity rhetoric (Bujaki et al., 2018, 2021; Edgley et al., 2016; Kornberger et al., 2010). These personality trait data provide a unique opportunity to critically examine the current practices of audit firms at a deeper level. By adopting the ICM from institutional theory and using empirical insights from personality traits, we address several calls to complement quantitative methods with a critical reflection to describe and discuss current practices (Dillard & Vinnari, 2017; Everett et al., 2015; Gendron, 2018; Richardson, 2015).

The remainder of this paper is as follows. Section two discusses the background literature behind our research question. Section three discusses our data and research method. Section four presents a general summary of the results of our analyses and discusses the

potential implications of our results for practice and future research. Section five concludes. In separate Appendices, we report the statistical details of our empirical analyses and a framework linking the five personality traits to potential audit processes and outcomes to guide future research on auditor personality traits.

## 2. Background literature

### 2.1. Diversity rhetoric and history of homogeneity in the auditing profession

Diversity rhetoric has become commonplace in organizations and the management literature (Edgley et al., 2016; Fornelli, 2016; Franzel, 2017). Such rhetoric typically “extols the virtue of a diverse workforce and advocates managing and valuing diversity” (Edelman et al., 2001). In tandem with this rhetorical trend, audit firms have signaled that a diverse workforce is a priority for the auditing profession because people are an important input factor that drives audit performance (AICPA, 2014; Edgley et al., 2016; Fornelli, 2016; Franzel, 2017; NBA, 2018). For example, PwC notes on its website that “[d]iverse teams are innovative because each member has a distinct point of view and can offer a broad range of ideas.”<sup>5</sup> Likewise, the American Institute of Certified Public Accountants (AICPA) has an Accounting Inclusion Maturity Model (AIMM) for firms to benchmark their diversity and inclusion efforts (AICPA, 2014). The AIMM includes a “Dimensions of Diversity” wheel that includes a multitude of diversity attributes, including internal dimensions (e.g., race, age, gender, physical ability, sexual orientation), external dimensions (e.g., marital status, income, religion, work experience), and organizational dimensions (e.g., division/group, functional level, management status). Personality is at the center of this diversity wheel (AICPA, 2014).

The unique context of auditing has several characteristics that underwrite the diversity rhetoric, including dealing with changing client environments, coordinating multinational group audits, and interacting with different stakeholders with potentially conflicting interests (e.g., client management, audit committee, shareholders, internal quality control reviewers, regulators). As such, the auditing profession is situated in a complex and international environment that is often understood as requiring unique application of multi-disciplinary knowledge (Dirsmith et al., 2015; Picard et al., 2014; Suddaby et al., 2007). From this perspective, audit firms may benefit from a diverse workforce that serves a broad range of clients where diversity may be an important factor to challenge both the audit team and the client in developing innovative and creative solutions for complex audit issues.

Although there is clear legitimacy behind the diversity rhetoric, the auditing profession, like other professions, has, historically, been characterized by homogeneity and exclusivity (Anderson-Gough et al., 2005; Hearn, 1982; Weber, 1968). That is, prior research points to a culture of elitism (Anderson-Gough et al., 2000; Carter & Spence, 2014; Hammond, 1997; Hanlon, 1996), management structures that contribute to developing corporate clones in a homogeneous profession (Covaleski et al., 1998), and recruitment and promotion biases that operate as filters for membership and advancement decisions (Gebreiter, 2020; Hearn, 1982; Kandola, 2009). Overall, these observations suggest that, within the auditing profession, there might be a diversity rhetoric-reality gap. Interestingly, recent empirical evidence suggests that such a gap exists at the surface-level (Downar et al., 2021; IMA, 2022), prompting the UK accounting regulator to criticize the firms it supervises “for allowing white men to dominate their most senior ranks” (Kinder, 2019).<sup>6</sup> The regulator noted the irony in firms’ lack of diversity even though they advise large corporations on diversity strategies (Kinder, 2019). The regulator also indicated that more needs to be done to ensure the firms are not limiting access to the most senior roles (Kinder 2019). Nevertheless, audit firms are investing in diversity initiatives and are reporting important strides in enhancing surface-level diversity (e.g., KPMG, 2020, 2021).

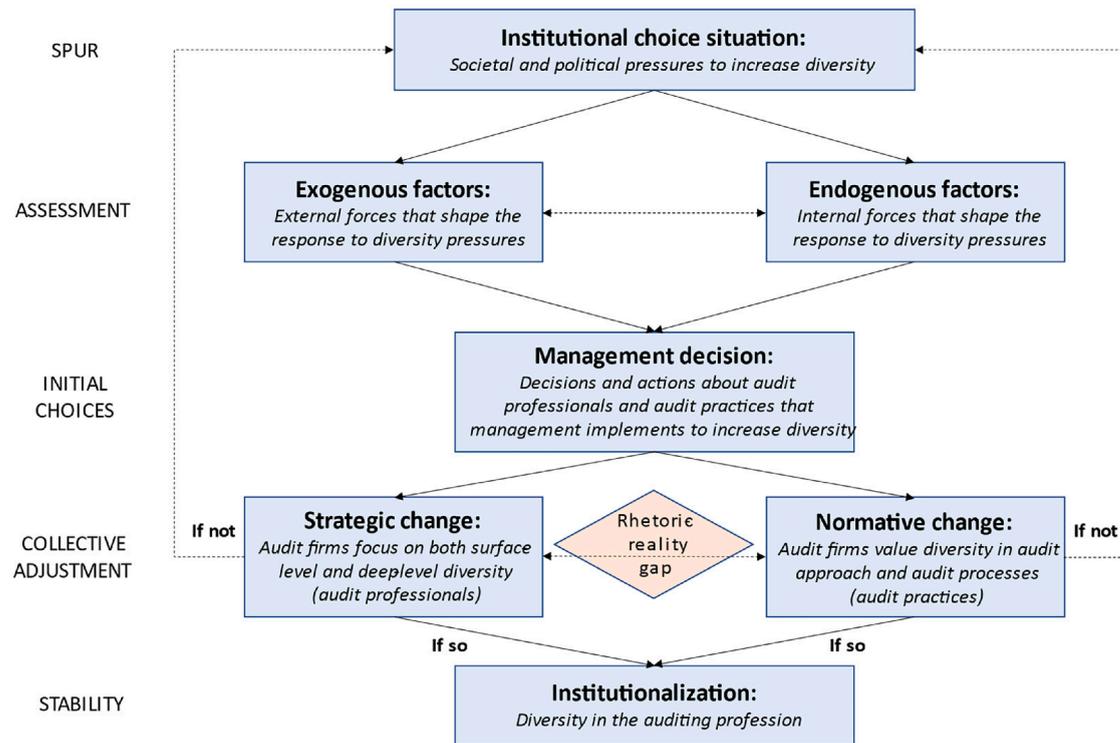
### 2.2. Institutional choice Model (ICM)

We rely on institutional theory to make sense of the deep-level diversity rhetoric-reality gap in audit firms. The institutional choice model (ICM), which belongs to the family of institutional theories, is apposite because it explains why actors in public organizations make new choices and how other actors accept and conform to these choices in a collective setting (Heikkila & Isett, 2004). The ICM therefore provides a framework to examine whether audit firms’ response to societal and political pressures to increase diversity has reached a point of stability, indicating that diversity has been institutionalized in the profession.

The ICM posits that audit firms make choices about diversity after considering both exogenous and endogenous factors. The ICM recognizes that organizational practices change in response to both these exogenous and endogenous factors, and that different actors within institutions may simultaneously work toward different goals of creating, maintaining, or disrupting institutional practices (Aghazadeh et al., 2021; Clune & O’Dwyer, 2020; Malsch & Gendron, 2013). Management choices to increase diversity can potentially create both a strategic change (formal ambitions), which is formulated at the institutional level (i.e., key decision makers), and a normative change (actual practices), which is implemented at the individual actor level. Normative change is necessarily slower than strategic change because norms are more subconscious than overt strategies (Heikkila & Isett, 2004). Thus, there is a possibility that management choices to increase diversity do not lead to an alignment of formal ambitions and actual practices, culminating in a rhetoric-reality gap.

<sup>5</sup> <https://www.pwc.com/us/en/about-us/diversity.html>.

<sup>6</sup> Not surprisingly, a recent study confirms that this exclusivity also exists in the accounting academy (Brown-Liburd & Joe, 2020), showing that the proportion of under-represented minority accounting faculty remains low with limited diversity in accounting journal and institutional leadership roles.



*Note.* This figure shows the institutional choice model, which is adapted from Heikkila and Isett (2004). There are five phases to examine institutionalization of diversity in the auditing profession (i.e., spur, assessment, initial choices, collective adjustment, and stability). By following these phases, we make sense of the rhetoric-reality gap of diversity in the auditing profession.

Fig. 1. Institutional Choice Model (ICM).

Fig. 1 presents our adapted ICM model. The ICM starts with the spur phase, an institutional choice situation where actors are faced with a new situation that affects their day-to-day operations. Actors need to respond to this situation by retaining the status quo or by making new choices. In relation to our study, the spur phase represents societal and political pressures that audit firms face to increase diversity. Audit firms' response to these pressures are affected by exogenous and endogenous factors (the assessment phase). That is, both extra-organizational and intra-organizational forces may shape the decision of the audit firm's management on how they respond to these pressures and can either increase or decrease diversity in the auditing profession. The initial choice phase represents hiring and retention practices, firm make-up, and transparency reports, which outwardly reflect the choices made by audit firms to address the societal and political pressures to increase diversity. The collective adjustment phase provides the opportunity to examine how the choices made by audit firms lead to a strategic change and/or normative change. Misalignment at this phase suggests a rhetoric-reality gap, leading to a new institutional choice situation (spur phase). Finally, in the stability phase, there is alignment of formal ambitions and actual practices and diversity, in its multiple facets, is institutionalized within the profession.

### 2.3. Assessment: exogenous and endogenous factors that affect diversity

Exogenous factors (e.g., laws, rules) have an institutional or external perspective, whereas endogenous factors (e.g., norms, heuristics) have a sociological or internal perspective (Heikkilä & Isett, 2004). We distinguish among three exogenous factors: (1) legislation, (2) environmental, social, and governance (ESG) goals, and (3) demographic changes. First, legislation has the potential to stimulate diversity. For instance, the US Civil Rights Act of 1964 refers to any discrimination of individuals because of their race, color, religion, sex, or national origin as an unlawful employment practice for an employer. Although non-discrimination laws are primarily focused on surface-level diversity, management often adds non-legal or managerial dimensions of deep-level diversity (e.g., personality, thought, lifestyle, culture) to the legally protected surface-level characteristics (Edelman et al., 2001). This process, which is referred to as *managerialization of law*, has the potential to transform how managers think about law and ultimately how law is implemented in organizational settings (Edelman et al., 2001). Thus, legislation has the potential to put pressure on audit firms to increase both surface-level and deep-level diversity.

Second, the United Nations sustainable development goals have ushered in a new era of tackling the world's most pressing problems. Four out of the 17 sustainable goals are related to DEI practices (IMA, 2022). In turn, emerging ESG reporting standards and guidelines require an increased organizational transparency on diversity, equity, and inclusion related to people in leadership roles (Anderson-Gough et al., 2022; IMA, 2022). Further, the corporate governance code provides a set of principles that emphasize good governance and long-term sustainable success in a culture of openness and diversity (FRC, 2018). For example, this code prescribes that appointments and succession plans of board members "should promote diversity of gender, social and ethnic backgrounds, cognitive and personal strengths" (FRC, 2018, p. 8). As such, these goals and standards provide an external incentive to increase both surface-level and deep-level diversity.

Third, demographic changes in society put pressure on audit firms to diversify their workforce to be representative of the society (Edgley et al., 2016). The public interest orientation of the auditing profession compels audit firms to tackle this demand for social justice. The Black Lives Matter movement has also been a powerful external force in raising awareness of inequality and discrimination in society. Hence, KPMG indicated that "we are focused on our commitment to attract, retain and advance underrepresented talent – at KPMG and in the profession more broadly – through continuous learning, courageous conversations and inclusive leadership" (KPMG, 2021, p. 4).

With respect to the endogenous factors in our study, we distinguish among three internal forces: (1) historical culture of elitism, (2) management structures, and (3) recruitment and promotion biases. First, the auditing profession, like other professions, has, historically, been one of homogeneity and exclusivity (Anderson-Gough et al., 2005; Hearn, 1982; Weber, 1968). For example, research points to a culture of elitism, especially at the partner level, which makes it often difficult for women and minorities to survive in audit firms that are dominated by white males (Anderson-Gough et al., 2000; Carter & Spence, 2014; Hammond, 1997; Hanlon, 1996; Krishnan et al., 2022). Thus, this historical culture of elitism is a potential endogenous barrier to increase diversity in the auditing profession.

Second, audit firms use management structures, such as mentoring and performance evaluations, to develop corporate clones in a homogeneous white male profession (Covaleski et al., 1998). These structures create and promote perceptions about the ideal worker, which operate as filters for membership and advancement decisions (Gebreiter, 2020; Hearn, 1982). Thus, although surface-level diversity (i.e., gender, ethnicity, and social background) might have increased at Big Four firms, new recruits may be quite homogeneous in terms of deep-level characteristics (i.e., personalities, characters, and ideas) (Gebreiter, 2020). Hence, the management structures of audit firms have the potential to constrain diversity in the auditing profession.

Third, recruitment and promotion biases are an obstacle to diversity because a growing body of literature explains how routine workplace arrangements and hierarchies can entrench organizational homogeneity (Burton et al., 2016; Foucault, 1977; Kandola, 2009; Knoppers et al., 2015). As Kandola (2009, p. 88) argues, "the workforce becomes segregated through the self-reinforcing process called homosocial reproduction, whereby individuals hire and promote the people who are most like themselves." These processes of attraction, selection, and attrition of people that fit within an organization based on characteristics such as personality, values, goals, attitudes, and interests often relate to an unconscious bias that increases intra-organizational homogenization (Schneider et al., 1995; Schneider et al., 1998; Schneider, 1987). Prior research provides evidence of this homophily principle by showing higher levels of fit or similarity in firms or teams based on gender and culture (Dalton et al., 2014a; Downar et al., 2021; Rivera, 2012). It is even possible that increased surface-level diversity may come at the cost of decreased deep-level diversity.

In sum, audit firms, faced with an institutional choice situation, consider both exogenous and endogenous factors to assess their

viable choice set about diversity. These factors may be inconsistent with each other and can either increase or impair deep-level diversity in the auditing profession. Therefore, some factors may be ignored or discounted when audit firms make decisions in the initial choice phase of the ICM.

#### 2.4. Initial choices: management decisions related to diversity

There are myriad ways in which management can increase diversity by making decisions and taking actions in the initial choice phase (Fig. 1). This may be through targeted recruitment strategies, mentorship programs, and/or training and educational initiatives (IMA, 2022). Although much of what management does to address diversity within audit firms is unobservable, management does report on diversity through annual transparency reports. The audit firms' annual transparency reports are an important source to obtain detailed insights into the firms' formal ambitions to foster diversity in terms of audit professionals (strategic change) and the actual enactment of diversity in terms of audit practices (normative change). These insights are important to help evaluate the extent to which diversity is institutionalized in the auditing profession.

With respect to audit *professionals*, the Big Four audit firms' transparency reports tend to focus more on surface-level rather than deep-level diversity. For example, both Deloitte and KPMG report ratios and targets of gender diversity but are silent on dimensions such as personality trait diversity. Further, the firms' diversity rhetoric is quite vague and focus more on external dimensions of diversity, such as skills and work experiences, rather than on internal dimensions of diversity, such as personality traits and prosocial behavior. For example, Deloitte reports that "our people reflect society and we are focused on inclusivity" (Deloitte, 2020, p. 5), and KPMG reports that "being inclusive enables us to bring together successful teams with the broadest possible range of skills, experience and perspectives" (KPMG, 2020, p. 45). The transparency reports do not clarify how the audit firms have achieved personality trait diversity or how their workforce reflect the deep-level diversity that is inherent in society. A notable exception to the absence of information on personality trait diversity is the disclosures on the supervisory board of EY, which "is composed in such a way that a combination of experience, expertise, competencies, professionalism, background, diversity with respect to gender, age and *personality*, and independence enables us to fulfil this role" (EY, 2020, p. 11, emphasis added).

With respect to audit *practices*, the transparency reports reveal that the audit firms value uniformity and consistency in how audit teams conduct their audits across the global network firm. For example, "it is critical for a Deloitte audit to be consistently executed and of high quality, wherever in the world it is performed" (Deloitte, 2020, p. 36). Also, the "EY GAM [Global Audit Methodology] provides a global framework for delivering high-quality audit services through the consistent application of thought processes, judgments and procedures in all audit engagements, regardless of size" (EY, 2020, p. 14). These quotes suggest that audit firms focus on standardization, which is confirmed by PwC, indicating that "we have further standardized a substantial part of our work (...), including standard work programs" (PwC, 2020, p. 7). This focus on uniformity and consistency in audit practices may interfere with firms' diversity efforts if firms believe that diversifying their staff will undermine their uniformity and consistency goals. Some researchers have also raised questions about whether such standardization is consistent with the inherent nature of the auditing profession, being situated in a complex and international environment that is often understood as requiring unique application of multidisciplinary knowledge (Dirsmith et al., 2015; Picard et al., 2014; Suddaby et al., 2007). Overall, this dual emphasis on diversity of the professionals and uniformity of the practices highlights the potential for a diversity rhetoric-reality gap.

#### 2.5. Collective adjustment: the diversity rhetoric-reality gap

We conjecture that if a diversity rhetoric-reality gap exists in the auditing profession, it will manifest in the collective adjustment phase of the ICM (Fig. 1) as a misalignment between strategic change and normative change. There are several reasons why a diversity rhetoric-reality gap may exist. First, the audit firms' transparency reports indicate that their formal ambitions to foster diversity have been more focused on surface-level diversity to the potential detriment of deep-level diversity. That is, audit firms seem to respond to the exogenous factors to increase gender and cultural diversity, whereas they seem to neglect the endogenous factors to increase deep-level diversity. This focus suggests a misalignment between surface-level and deep-level diversity, meaning that personality trait diversity (among other deep-level characteristics) is not yet institutionalized in the auditing profession.

Second, firms' structures and practices may impair the institutionalization of diversity, especially at the deep level, which is unobservable to external stakeholders. Audit firms emphasize both the importance of diversity of audit professionals and the importance of uniformity and consistency of audit practices. Audit firms may pursue these dual goals by diversifying audit professionals, to seek legitimacy, without truly affecting audit practices and perspectives. Their professional staff may start looking different without thinking or acting differently. Thus, the focus of homogenizing audit practices suggests a lack of deep-level diversity in actual practice.

Third, norms may not change at all in the collective adjustment phase and the adjustment period may be one-sided, with only strategies changing (Heikkilä & Isett, 2004). That is, the firm's articulation of a diversity strategy may not be internalized at the office level where it is supposed to be implemented. Without an alignment of strategies and norms, stability is not attained, leading to new choice situations. In the interim, the actors are likely to hire and retain to instill and maintain the prevailing organizational culture, which manifests in hiring and retaining staff with similar personalities.

Following the preceding discussions and prior literature on personality diversity (Giberson et al., 2005; Satterwhite et al., 2009; Schneider et al., 1998), we formulate two propositions to suggest that deep-level diversity is unlikely to be enacted in the auditing profession because the audit firms' diversity initiatives are more likely to be focused on surface-level diversity and the actual enactment of deep-level diversity is likely to be constrained by the audit firms' structures and practices:

**Proposition 1.** There is relatively more homogeneity in personality traits within firm types than between firm types.

**Proposition 2.** There is relatively more homogeneity in personality traits within experience levels than between experience levels.

### 3. Research method

#### 3.1. Data and empirical analyses

The data for the study are from two interrelated experimental studies that focus on the effects of audit partner profit sharing and client importance on audit quality (Van Brenk et al., 2021), and audit quality bonus and engagement pressure on audit quality (Van Brenk & Majoor, 2022).<sup>7</sup> We gathered the data in collaboration with part-time Master's students in Accounting who also work in auditing practice and were unaware of the experimental hypotheses (Van Brenk & Majoor, 2022; Van Brenk et al., 2021).<sup>8</sup> The students were enrolled in an auditing research course that requires writing a thesis. Each student was asked to invite colleagues in their firms to participate in the studies. In return, students were permitted to use parts of the dataset for their thesis. We sent participants a link to the experiments via the email addresses provided by the students. The participants were asked to make audit judgments after being exposed to experimental manipulations. In addition, each participant was asked to answer demographic and personality trait questions, which are the focus of the current study.

#### 3.2. Measurement of variables

With respect to demographics, each participant provided information on their current audit firm type (Big Four, medium-sized, or small audit firm), experience level (staff to partner), gender, and age. Firm Type is the first independent variable and consists of three categories: Big Four (Deloitte, EY, KPMG, and PwC), medium-sized (e.g., Baker Tilly Berk, BDO, Grant Thornton, Mazars), and small audit firms. Experience Level is the second independent variable and consists of seven categories: staff, senior staff, junior manager, manager, senior manager, director, and partner.

The dependent variables are the participants' personality traits as measured from the Five Factor Model (FFM): neuroticism, extroversion, openness, agreeableness, and conscientiousness (Digman, 1990; John & Srivastava, 1999; Leão & Gomes, 2022; Norman, 1963). We used the Dutch version of the 60-item NEO-FFI-3 personality questionnaire, which is a well-validated, short version of the FFM to measure personality traits (Hoekstra & De Fruyt, 2014; John & Srivastava, 1999; McCrae & Costa, 2007, 2010).<sup>9</sup> Each personality trait is measured using 12-items on a 5-point Likert scale, ranging from *strongly disagree* to *strongly agree*.<sup>10</sup> Thus, scores on each trait could range from 12 to 60.

Neuroticism is a measure of emotional instability, where those who are highly neurotic tend to be less stable and frequently demonstrate negative emotions. A reverse-scored example of this item is, "I am not a worrier." Extroversion is a measure of how socially assertive an individual is and relates to how an individual gains energy from performing for and interacting with others. Extroverts draw energy from action and tend to prefer interacting with a lot of people, whereas introverts draw energy from reflection and tend to prefer working alone or in small groups. An example of this item is, "I like to have a lot of people around me." Openness measures whether individuals are highly interested in experiencing new things and are flexible in their thinking. An example of this item is, "I have a lot of intellectual curiosity." Agreeableness examines the level of friendliness versus hostility that someone tends to display when interacting with others. Those high in agreeableness are more trusting and modest whereas those low in agreeableness are more suspicious and dissenting. An example of this item is, "I tend to assume the best about people." Finally, conscientiousness relates to those who are diligent and dutiful in the way they approach work and life. Individuals who are lower on the conscientiousness scale tend to be big picture thinkers and less interested in the details of how things get done. An example of this item is, "I strive for excellence in everything I do."

Although we used a highly validated and broadly used instrument to measure personality traits, we are aware of the problems and critiques regarding the key assumptions of the FFM. For instance, questions have been raised about the various factor-analytic work from which the five dimensions were extracted; it assumes that most aspects of human personality can be represented in the trait lexicon; its cross-cultural generalizability has been questioned; many important personality traits are not captured by the five dimensions; concerns remain about whether traits are static; it has no established theoretical basis; and it has limited utility in practice

<sup>7</sup> Two personality traits serve as a moderator in these studies: reinforcement sensitivity in the first one and appetitive motivation in the second one. Reinforcement sensitivity is a combination of extroversion and neuroticism, whereas appetitive motivation is based on a different questionnaire. Otherwise, there is no overlap between the concepts and data used in this study and the two studies.

<sup>8</sup> At the time of data collection, the institution at which these studies took place did not require Institutional Review Board approval. However, the Committee for Academic Integrity of this institution reviewed our procedures to protect participants' rights. We protected participants' rights by emphasizing that (1) participation is voluntary and completely anonymous, (2) participants can interrupt the experimental task anytime, and (3) the study is conducted in accordance with the Code of Conduct of the institution at which the data collection took place. As noted in the Participants section, 47 participants decided not to complete the study.

<sup>9</sup> We received permission from Hogrefe Uitgevers B.V., the Netherlands to use this instrument that is under copyright.

<sup>10</sup> Each personality trait consists of five facets. For example, extroversion consists of warmth, gregariousness, assertiveness, activity, excitement-seeking, and positive emotions (McCrae & Costa, 2010). As we used the short version of the personality questionnaire with only a limited number of items on each facet, we are not able to provide insights into the facets of each trait. Thus, we report our findings at the level of the five personality traits.

**Table 1**  
Demographic data across firm type and experience level ( $n = 981$ ).

Variables	Mean	Std.	Min	Lower	Median	Upper	Max
Gender	0.2	0.4	0.0	0.0	0.0	0.0	1.0
Age	35.1	9.4	19.0	28.0	33.0	41.0	68.0
Years of Audit Experience	11.6	8.5	0.0	5.0	9.5	15.0	45.0
Neuroticism	27.7	6.4	12.0	23.0	27.0	32.0	49.0
Extroversion	44.5	5.4	27.0	41.0	45.0	48.0	59.0
Openness	37.1	5.6	21.0	33.0	37.0	41.0	57.0
Agreeableness	40.7	5.0	25.0	37.5	41.0	44.0	51.0
Conscientiousness	48.0	4.8	27.0	45.0	48.0	51.0	60.0

*Note.* Gender is an indicator variable coded as one if the participant is female. Age is the year of data collection minus the year of birth. Years of audit experience is the participant's years of auditing experience. The personality traits of neuroticism, extroversion, openness, agreeableness, and conscientiousness are each measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

because of its lack of predictive value (Boyle, 2008). Nevertheless, we used the FFM as a starting point to make sense of the personality trait diversity rhetoric-reality gap in the auditing profession, with the expectation that future research can use different instruments or examine different perspectives of deep-level characteristics.

### 3.3. Participants

The participants are one thousand two hundred and twenty-one (1,221) auditors from audit firms in the Netherlands, ranging in rank from staff to partner. We excluded 15 participants who experienced technical problems in Qualtrics, 47 participants who did not complete the study, 170 participants who are not working for an audit firm, and eight tax or advisory partners.<sup>11</sup> Thus, the final sample size is 981 usable responses.

Table 1 provides descriptive statistics on participants' gender, age, experience, and personality traits. There are 227 (23.1 percent) female and 754 (76.9 percent) male participants in our sample.<sup>12</sup> The mean (standard deviation) age of participants is 35.1 (9.4) years. Participants' mean (standard deviation) years of audit experience is 11.6 (8.5). Personality data show the highest mean score on conscientiousness (48) and the lowest mean score on neuroticism (27.7). The conscientiousness score is consistent with a recent study showing that laypeople view this personality trait as the most salient dimension of the stereotype of accountants (Leão & Gomes, 2022). On average, participants are conscientious, extroverted, agreeable, and tend to be less neurotic.

### 3.4. Initial analyses on the structure and composition of the FFM within our sample

We conducted initial analyses to validate the structure of the FFM with our sample and to identify the relationship between surface and deep-level characteristics within our sample. Overall, we find that the basic structure of the FFM is consistent between our sample of auditors and a general sample of Dutch people, implying that the use of the 60-item personality questionnaire was a valid approach (Appendix 1, Panel A). Next, we compared the mean scores of the five personality traits from our sample of auditors to this general sample of people from the Netherlands. We find that the auditors in our sample score significantly higher on extroversion and conscientiousness, but significantly lower on neuroticism, openness, and agreeableness (Appendix 1, Panel B). These results suggest that individuals who self-select into the auditing profession have a distinct personality that differs from the general population, which is consistent with the study of Kovar et al. (2003) using the Myers-Briggs Type Indicator with accounting students from the United States.

Next, we conducted initial analyses on our sample of auditors and examined differences between the auditors in the private sector and those working for the government (i.e., non-audit participants that we excluded as noted in Section 3.3) in our sample. We find that the auditors who work for the government scored significantly lower on neuroticism and extroversion and higher on openness than those in the private sector (Appendix 1, Panel C). This suggests that government auditors may be more emotionally stable, sociable, and flexible in their thinking than those in the private sector. This analysis suggests that government auditors may have a different subset of personality traits than those in the private sector. These initial differences provide an opportunity for future research to examine how personality may be a contributing factor in job switching between the private and public sectors and the extent of

<sup>11</sup> Students who work for the Dutch government or in advisory provided access to practitioners outside of auditing practice. We excluded these participants from the analyses in this study because they do not fit with our research objective to examine personality trait diversity within the auditing profession. Except for participants who work for the government, we are not able to identify subsamples of participants who work in the same type of firm. In Appendix 1 (Panel C), we provide cross-comparisons to identify personality differences between participants working for audit firms and participants working for the government.

<sup>12</sup> The percentage of female participants is significantly higher than the percentage of female certified public accountants in the Netherlands ( $t_{980} = 2.702$ ;  $p = 0.007$ ), indicating that our sample has higher surface-level diversity than the overall population of Dutch accountants. According to the Netherlands Institute of Chartered Accountants (NBA), there are 21,333 certified public accountants in 2015, of which 4,153 (19.5 percent) are female (<https://www.accountant.nl/feiten-en-cijfers/ledenaantallen-nba/>).

**Table 2**Pearson's correlation coefficients among surface-level and deep-level characteristics ( $n = 981$ ).

Variables	1	2	3	4	5	6	7
1. Gender							
2. Age	-0.253**						
3. Years of Audit Experience	-0.222**	0.887**					
4. Neuroticism	0.205**	-0.283**	-0.283**				
5. Extroversion	0.039	0.082*	0.100**	-0.398**			
6. Openness	0.017	0.065*	0.059	0.099**	0.218**		
7. Agreeableness	0.216**	0.115**	0.075*	0.018	0.018	0.105**	
8. Conscientiousness	0.020	0.094**	0.149**	-0.434**	0.328**	-0.050	-0.009

Note. \* $p < 0.05$ ; \*\* $p < 0.01$ . Gender is an indicator variable coded as one if the participant is female. Age is the year of data collection minus the year of birth. Years of audit experience is the participant's years of auditing experience. The personality traits of neuroticism, extroversion, openness, agreeableness, and conscientiousness are each measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

deep-level diversity in the latter sector.

Next, we examined the correlations between surface and deep-level characteristics within our sample (Table 2). We find a negative and significant correlation between gender and age, indicating that the female participants are younger than the male participants in our sample. This association is consistent with research that finds female auditors tend to leave the profession earlier (Dalton et al., 2014a; Nouri & Parker, 2020). Additionally, we find significant correlations between gender and neuroticism or agreeableness and between age and all five personality traits. These associations suggest that, at higher levels, an "ideal" auditor characteristic profile emerges, which also provides some initial indication of homogeneity. These findings show that there are at least some correlations between observable versus unobservable auditor characteristics, which suggest that firms should also consider auditor characteristics beyond the surface-level characteristics when addressing diversity.<sup>13</sup> However, these correlations do not mean that increasing surface-level diversity also increases deep-level diversity as people can look different while still thinking and acting similarly.

## 4. Results and discussion

### 4.1. Examining the extent of diversity in personality traits

Recall that our propositions are that there is relatively more homogeneity in personality traits within firm types than between firm types; and that there is relatively more homogeneity in personality traits within experience levels than between experience levels. We examined these propositions with various statistical tests. Our first steps were to determine whether we could examine our data in aggregate for our participant pool for each personality trait (Appendix 2, Panel A), and to examine whether differences in personality traits exist across our two primary independent variables of interest (Firm Type and Experience Level) (Appendix 2, Panel B). We find support for the aggregation of personality traits, and we find that personality traits significantly differ *between* firm types and experience levels. Specifically, we find significant differences across the three firm types in levels of neuroticism, extroversion, and conscientiousness. We also find significant differences across the seven experience levels for neuroticism, extroversion, conscientiousness, and agreeableness. These initial findings suggest that personality traits are similar *within* groups but differ *between* groups, providing initial support for our propositions.

Next, using guidelines and benchmarks from prior research, we conducted multivariate tests to examine the extent of personality trait diversity (Appendix 2, Panel C). These analyses show that there is homogeneity of personality traits for both Firm Type and Experience Level, consistent with our initial findings. Taken together, we find support for our two propositions that personality traits are diverse *between* firm types (or experience levels) but homogeneous *within* firm types (or experience levels).<sup>14</sup>

The preceding results suggest that there are significant personality trait differences *between* firm types and experience levels. For

<sup>13</sup> As a result of this analysis, we control for gender and age in all subsequent analyses.

<sup>14</sup> Although outside the scope of our study to make sense of the rhetoric-reality gap of diversity in the auditing profession, we conducted supplemental analyses to provide additional insights into the conjecture that the deep-level characteristic of personality impacts auditors' judgment and decision making beyond the surface-level characteristics of gender and age. We used data from Van Brenk et al. (2021) and Van Brenk and Majoor (2022) to conduct a three-stage hierarchical regression with four measures of auditor judgment and decision making as the dependent variables, audit firm type and auditor experience level as the control variables (first stage), gender and age to represent surface-level characteristics (second stage), and a personality score to represent deep-level characteristics (third stage). We find that personality significantly improves the regression models for three of the four dependent variables, but that gender and age do not significantly improve the models. This finding on surface-level characteristics is consistent with a recent study showing that similarity on gender and age in auditor dyads has no impact on audit quality (Downar et al., 2021). Overall, the findings of these supplemental analyses provide some initial evidence that personality may be a more important predictor of audit performance, over gender and age, consistent with the findings of He et al. (2021) that the association between cognitive diversity and audit quality is stronger than that between demographic diversity and audit quality. Therefore, mitigating the rhetoric-reality gap of personality trait diversity might be important for audit firms to move the profession forward. Further research is needed to examine the role of personality traits in driving audit quality (see also Appendix 4).

**Table 3**  
Personality profiles between audit firm types.

Personality Trait	Big Four (n = 442)	Medium (n = 350)	Small (n = 189)
Neuroticism	52.0%	55.1%	59.3%
Extroversion	54.3%	50.3%	45.5%
Openness	54.8%	48.3%	49.2%
Agreeableness	54.1%	54.0%	57.1%
Conscientiousness	61.3%	57.1%	49.2%
Profile	COEAN	CNAEO	NACOE

*Note.* This table shows the percentage of participants across the three audit firm types that score above the median for each personality trait. The profile is a ranking of the five personality traits from most to least dominant within each firm type.

example, the personality traits of auditors from Big Four Firm “A” differ from the personality traits of auditors from Medium-Sized Firm “B”. Likewise, the personality traits of a staff auditor differ from those of a manager. However, statistical significance may not be the same as practical significance. To provide some practical and more detailed insights in these personality trait differences, we calculated the percentage of participants within each audit firm type that score above the median of each personality trait to compose average personality profiles for the three firm types. These personality profiles between audit firm types are presented in Table 3. For Big Four audit firms, conscientiousness (61.3%) is the most dominant personality trait and neuroticism (52%) is the least dominant trait. For medium-sized audit firms, conscientiousness (57.1) is the most dominant personality trait and openness (48.3%) is the least dominant trait. For small audit firms, neuroticism (59.3%) is the most dominant personality trait and extroversion (45.5%) is the least dominant trait.

These different profiles indicate that there are personality trait differences between these groups of firm types. However, in terms of audit practice, does it make a meaningful difference when 61.3% of Big Four participants score above the median for conscientiousness compared to only 49.2% of small audit firm participants? Thus, although we find significant personality trait differences across firm types, these differences are relatively small, supporting the notion that the auditing profession is more homogenous than diverse.

Further, while these between firm type and experience level differences may serve a larger diversity agenda within the auditing profession (i.e., different firm types have different clients with different needs), they suggest that individual firm type and experience level groupings are not displaying diversity. Our results suggest that while firms espouse diversity at the frontstage level, their actual diversity practice, at the personality trait level, reflects a more homogenous approach. Overall, these findings suggest that the auditing profession is not diverse at the deep-level of personality traits, indicating that there is a rhetoric-reality gap of personality trait diversity, consistent with our propositions.

#### 4.2. Examining individual personality traits and a framework for future research

We conducted analyses at the individual trait level to obtain more nuanced insights into the diversity (or lack thereof) of personality traits in the auditing profession. The analyses are reported in Appendix 3. We evaluate the insights into each personality trait, discuss the practical implications of each trait for audit teams, and present considerations for future research in this section. Table 4 summarizes our findings on the degree of homogeneity versus heterogeneity at the individual trait level for both Firm Type (Panel A) and Experience Level (Panel B).

Building on these findings, we also present a framework to guide future research to address the calls in the literature to examine the role of personality traits in driving audit quality in Appendix 4 (DeFond & Zhang, 2014; Knechel et al., 2015; Nelson & Tan, 2005). In our framework, we present the personality traits (column A), the potential implications for audit performance (column B), and potential research questions (column C). Both the findings of diversity at the individual trait level and our personality trait diversity framework can be used to inform auditing practice on how to enhance the actual enactment of diversity in the firms’ structures and practices and to mitigate the rhetoric-reality gap.

##### 4.2.1. Neuroticism

Neuroticism is a measure of emotional instability, referring to how one handles stressful situations and tends to experience negative emotions.<sup>15</sup> We find that Big Four firms and managers to partners are homogenous on neuroticism, while medium-sized and small audit firms and lower experience levels are heterogeneous. The mean scores on neuroticism for Big Four firms and managers to partners are lower than other firm types or experience levels, which suggests auditors from these firm types and experience levels may be better able to handle job stress, uncertainty, and have more successful client relations. From an audit firm perspective, this result makes sense considering Big Four firms tend to have larger and more diverse client bases. From an experience level perspective, lower levels of neuroticism may be driven by experience and time or is the result of socialization where auditors with higher levels of neuroticism have left the profession.

<sup>15</sup> This section expands Appendix 4. Personality traits and a discussion of their impact to the audit process is drawn from prior research and our own brainstorming to present the potential implications of each personality trait on audit performance (Barrick & Mount, 1991; Fitzgerald et al., 2015; Hosmanek et al., 2014; McCrae & Costa, 1999; Neuman et al., 1999; Van Kuijk & Paresi, 2020).

**Table 4**  
Summary of homogeneity differences in personality traits.

Panel A: By audit firm type							
	Big Four		Medium			Small	
Neuroticism	✓		×			×	
Extroversion	✓		✓			✓	
Openness	×		×			×	
Agreeableness	×		✓			×	
Conscientiousness	✓		✓			✓	
Panel B: By auditor experience level							
	Partner	Director	Senior Manager	Manager	Junior Manager	Senior Staff	Staff
Neuroticism	✓	✓	✓	✓	×	×	×
Extroversion	✓	✓	✓	✓	✓	✓	✓
Openness	×	×	×	×	×	×	×
Agreeableness	✓	×	✓	×	×	×	×
Conscientiousness	✓	✓	✓	✓	✓	✓	✓

*Note.* This table shows a summary of homogeneity (indicated as ✓) versus heterogeneity (indicated as x) of personality traits by audit firm type (Panel A) and auditor experience level (Panel B). The personality traits of neuroticism, extroversion, openness, agreeableness, and conscientiousness are each measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Homogenous audit teams with lower levels of neuroticism may be more efficient at performing audit tasks and be better able to handle problems that arise during the audit process. It is unclear whether heterogeneity in neuroticism distracts from audit quality. For example, high levels of neuroticism are associated with greater work stress and turnover, and less effective leadership. Future research can examine the impact of neuroticism on audit performance. For example, do homogenous audit teams with lower levels of neuroticism exhibit a greater ability to handle difficult or complex client negotiations? Do homogenous teams with higher levels of neuroticism exhibit greater job dissatisfaction? Can a team that is more heterogenous on neuroticism mitigate the effects of job stress? Does neuroticism interact with professional skepticism such that teams that have higher neuroticism scores tend to be less professionally skeptical?<sup>16</sup>

#### 4.2.2. Extroversion

Extroversion is a measure of sociability, assertiveness, and outgoingness, and refers to a level of comfortability with relationships to others. We find that all audit firm types and experience levels are homogenous on extroversion. The mean scores on extroversion are highest for Big Four firm types and higher-ranking experience levels, which suggests auditors from these firm types and experience levels are more sociable, assertive, and outgoing, and likely have a higher level of comfort with client relationships.

Prior research suggests there are both positive and negative aspects to homogeneity regarding extroversion. For example, extroversion is positively associated with information seeking behavior (Van Kuijk & Paresi, 2020), which may benefit auditors' professional skepticism. However, homogeneity on extroversion has been shown to lead to suboptimal team performance and satisfaction (Kristof-Brown et al., 2005). Additionally, a firm culture of extroversion may adversely create an environment where those with lower levels of extroversion (i.e., introverts) might be excluded from engaging in team discussions, which may reduce the level of deep thinking and/or logical problem solving of a team.

Future research on extroversion can examine whether higher levels of extroversion lead to better client/team interactions and team performance. Whereas higher levels of extroversion may lead to better client/team interactions, more heterogeneity of extroversion within an audit team may be better for activities like fraud or general risk brainstorming that require deep thinking.

#### 4.2.3. Openness

Openness is a measure of a person's willingness to change, experience new things, think creatively, and reflects the extent to which a person is open-minded. With respect to openness, we find all audit firm types and experience levels are heterogeneous, suggesting a mix of higher and lower levels of openness. Higher levels of openness may be associated with greater creativity in brainstorming tasks, the ability to work with unstructured problems, and the ability to seek out information. However, higher levels of openness may lead to greater turnover. Lower levels of openness may be associated with more "in the box" thinking, one being less open to feedback, and less willing to adapt to new processes or technologies.

Diller et al. (2020) find that tax consultants scoring high on extroversion and openness, and low on neuroticism, exhibit a higher level of digitization. A mix of higher and lower levels of openness within an audit team may offer benefits. For example, a team that is

<sup>16</sup> Prior research suggests a positive correlation between FFM traits and professional skepticism at the individual level (Farag & Elias, 2016). Samagaio and Felício (2022) find that agreeableness, conscientiousness, and openness are positively associated with professional skepticism at the individual level.

more diverse as it relates to openness may be good at both accepting and implementing new technologies. The same is true as it relates to creativity and brainstorming. Varied levels of openness may help audit teams identify more risks (e.g., fraud brainstorming) or produce more creative solutions.

#### 4.2.4. Agreeableness

Agreeableness is a measure of trust, cooperativeness, consideration, optimism, and reflects a concern for social harmony (Costa & McCrae, 1992). While the scores on agreeableness are similar between firm types and experience levels, homogeneity is only observed with respect to medium-sized audit firms, partners, and senior managers.

As scores on agreeableness are generally similar across firm types and experience levels, future research can examine how greater levels of homogeneity may lead to more or less effective and efficient team performance or client negotiations. For example, are partners and senior managers more consistently able to build trust and manage client relations, interactions, and conflict than other levels that are less homogenous on agreeableness? Future research can also consider whether a lack of heterogeneity in agreeableness may lead to an auditor having a less critical mindset or exhibiting professional skepticism. Research examining levels of agreeableness between audit teams and their clients may also provide insights into how agreeableness impacts client negotiations and cooperation.

#### 4.2.5. Conscientiousness

Conscientiousness is a measure of diligence and duty and reflects a tendency to display self-discipline and a desire for achievement. Conscientious individuals attain success through planning and determination (Costa & McCrae, 1992). Overall, we find that scores on conscientiousness are generally high and homogenous for both firm types and experience levels. We find that over half of respondents score above the median for Big Four (61.3%) and medium-sized (57.1%) audit firms. This is unsurprising considering conscientiousness is characterized by dutifulness, achievement, and self-discipline.

Audit teams that have high, homogenous levels of conscientiousness may achieve greater audit effectiveness and efficiencies. However, they may lack flexibility and adaptability to changing demands in the audit environment. Higher levels of conscientiousness may also lead one to be less extrinsically motivated, which could require firms to consider a different approach to incentivization.

## 5. Conclusion

Whether for impression management, to meet the growing needs of their clients, or to enhance audit team performance, audit firms invest resources to promote and garner the benefits of diversity in their organizations (AICPA, 2014; Durocher et al., 2016; Edgley et al., 2016). Further, diversity has been shown to positively impact measures of audit quality (Cameran et al., 2018; Chung & Monroe, 2001; Condie et al., 2022; Hardies et al., 2017; He et al., 2021; Ittonen et al., 2013; Niskanen et al., 2011; O'Donnell & Johnson, 2001). Diversity, however, is a multidimensional construct that includes both surface-level and deep-level characteristics. In this study, we adopt the institutional choice model (ICM) to make sense of the rhetoric-reality gap of personality trait diversity within the auditing profession.

The main findings of our study provide support for our two propositions that there is homogeneity of personality traits in the auditing profession, indicating that both firm types (i.e., Big Four, medium-sized, and small) and experience levels (i.e., staff to partner) each have their own shared personality traits. Further, we find differences in homogeneity between specific personality traits, where some traits are homogeneous across firm types and experience levels (i.e., extroversion and conscientiousness), while others are not (i.e., openness). These findings may be of interest to audit firms, regulators, and accounting educators as they participate in discussions and initiatives around diversity within the profession and practices.

Consistent with the ICM, evidence of homogeneity in personality traits suggests that the auditing profession has not achieved a level of institutionalization and that a rhetoric-reality gap exists as it relates to diversity. More importantly, our results suggest that audit firms may benefit from returning to the spur phase of the ICM to re-evaluate their engagement with diversity initiatives (and, more broadly, with diversity, equity, and inclusion) in order to assess and make decisions around how they define diversity (e.g., to include both surface and deep-level characteristics) and how they align their institutional strategies with their norms at the implementation level. Based on the ICM, audit firms have two angles to mitigate the rhetoric-reality gap of personality trait diversity. First, audit firms can develop their formal ambitions by specifically including personality traits in their rhetoric on diversity. For example, audit firms can report about their actual personality profiles and discuss their initiatives to increase deep-level diversity. Second, audit firms can develop their structures and practices to support the actual enactment of personality trait diversity. For example, audit firms can stimulate the awareness of deep-level diversity in audit team compositions and promotion decisions. Although these initiatives can mitigate the rhetoric-reality gap, it is also important to acknowledge the complexity of increasing deep-level diversity in practice because of the lack of legislation, the difficulty to observe these differences, the problems of measuring personality traits, and the preference to keep the status quo.

Our study is subject to limitations that offer opportunities for future research. First, due to data restrictions, we used the audit firm type as the level of our analyses. Consequently, results might not generalize to the level of individual firms. Therefore, future research might examine the idea of personality trait diversity at the level of individual audit firms. Second, we examine personality trait diversity at the firm type and experience level at a specific point in time. However, we cannot speak to the mechanisms through which homogeneity of personality traits occurs or whether there are changes over time. For example, a field study can examine how firms align their strategy and norms over time to achieve stability and institutionalization of diverse personality traits over time. Third, we have no data on the race and/or ethnicity of our participants. Future research can consider these surface-level characteristics to examine how race and/or ethnicity covary with personality trait diversity in the auditing profession.

The results from our study have several implications for future research that considers audit firms and auditor characteristics. First, in considering individual and team characteristics that impact the audit environment, research on diversity suggests that multiple dimensions are salient at the same time and must be considered simultaneously. Our results suggest that personality traits are a salient deep-level characteristic at both the firm type and experience level, indicating that personality traits should be considered in auditing research (Appendix 4 might be helpful in guiding this type of future research). This future research can take a more positivist spirit by using surveys and/or experiments as a research method, or a more constructivist spirit by using interviews and/or case studies as a research method – focusing on change dynamics surrounding deep-level diversity (see [Power & Gendron, 2015](#)).

Second, future research on audit team diversity might consider differences in personality traits between auditors, tax professionals, and IT experts. Are firms that focus on consulting better able to align their strategies and norms? Professionals from different disciplines are likely to have different personality traits. As such, multidisciplinary audit teams might be a way to improve audit quality and to serve the public interest, which is especially important in light of the enduring series of new audit failures that have threatened, for decades, the legitimacy of public accounting ([Brooks, 2018](#); [Humphrey et al., 2021](#)).

Third, research on professional skepticism often considers skepticism as a personality trait ([Hurt et al., 2013](#); [Robinson et al., 2018](#)). Future research might consider the personality traits from the FFM as components of trait skepticism and examine whether the idea of homogeneity of personality traits also applies to professional skepticism.

Fourth, discussions on diversity and audit quality have considered the role of individual auditor characteristics in influencing audit quality ([AICPA, 2014](#); [Christensen et al., 2016](#); [Gul et al., 2013](#); [He et al., 2021](#); [IAASB, 2014](#)). Thus, consistent with our initial findings on the impact of personality traits on auditor judgments beyond surface-level characteristics, future research might consider the role of personality (diversity) in affecting audit quality.

Fifth, prior research shows that the power of the client is an important factor in stimulating or mitigating homogeneity ([Anderson-Gough et al., 2005](#); [Guénin-Paracini et al., 2015](#); [Kornberger et al., 2010](#)). Thus, clients can play a role in enhancing personality trait diversity within audit firms. Future research might examine the interactions between diverse versus homogenous clients and auditors and the impact on audit outcomes. Overall, our study shows that auditor personality traits are important to consider by both academics and practitioners.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

Data will be made available on request.

### Appendix 1

Initial analyses on the structure and composition of the FFM within our sample

#### Panel A: Structure of the five personality traits

To validate the basic structure of the FFM within our sample of auditors, we conducted a principal component factor analysis (not tabulated) on the 60 items of the personality questionnaire using the varimax rotation method. Results show five factors, representing the five personality traits, consistent with the structure of the FFM. These five factors explain 33.5 percent of the variance, which is slightly lower than the 37 percent of item variance based on the general sample of Dutch people as reported by [Hoekstra and De Fruyt \(2014\)](#). Cronbach's alpha (eigenvalue) in our sample is 0.82 (7.70) for neuroticism, 0.79 (3.26) for extroversion, 0.71 (2.38) for openness, 0.67 (2.65) for agreeableness, and 0.78 (4.12) for conscientiousness. Except for extroversion, these findings on reliability are slightly weaker than the findings based on the general sample of people from the Netherlands ( $n = 1,715$ ; see [Hoekstra & De Fruyt, 2014](#)), showing a Cronbach's alpha of 0.86 for neuroticism, 0.77 for extroversion, 0.73 for openness, 0.73 for agreeableness, and 0.79 for conscientiousness. Nevertheless, the values for Cronbach's alpha are acceptable because four of them are higher than 0.70, whereas values below 0.70 might be expected when dealing with psychological constructs ([Field, 2013](#)).

#### Panel B: Comparison of personality traits with a general sample

To examine the composition of the five personality traits, we compared our sample of auditors with a general sample of people from the Netherlands who also completed the NEO-FFI-3 personality questionnaire. This general sample consists of 1,715 participants who are representative of the Dutch population with respect to gender, age, education, ethnicity, and region ([Hoekstra & De Fruyt, 2014](#)). One-sample  $t$ -tests (not tabulated) show that the auditors in our sample score significantly higher on extroversion ( $t_{980} = 30.297$ ;  $p < 0.001$ ) and conscientiousness ( $t_{980} = 30.049$ ;  $p < 0.001$ ), but lower on neuroticism ( $t_{980} = -30.941$ ;  $p < 0.001$ ), openness ( $t_{980} = -10.189$ ;  $p < 0.001$ ), and agreeableness ( $t_{980} = -2.443$ ;  $p = 0.015$ ) than the general sample of Dutch people.

#### Panel C: Differences on personality traits between auditors in the private sector and auditors who work for the government

To examine the composition of the five personality traits, we also compared our sample of auditors working for audit firms with those auditors working for the government. As noted in [Section 3.3](#), we excluded 178 non-audit participants from our analyses to focus

on auditing professionals. In this group of non-audit participants, 132 individuals are working for the government (i.e., for the tax authorities, Ministry of Finance, or local government). Findings of independent  $t$ -tests (not tabulated) show that government auditors score significantly lower on neuroticism ( $t_{1111} = -2.001$ ;  $p = 0.046$ ) and extroversion ( $t_{1111} = -5.672$ ;  $p < 0.001$ ) compared to those in the private sector, higher on openness ( $t_{1111} = 6.887$ ;  $p < 0.001$ ), and the same on agreeableness ( $t_{1111} = 1.641$ ;  $p = 0.101$ ) and conscientiousness ( $t_{1111} = -1.326$ ;  $p = 0.185$ ). Thus, government auditors seem to have a different subset of personality traits. Future research can examine a rhetoric-reality gap of personality diversity in the public sector or examine whether a fit on personality traits is a motivation for auditors to switch from the private sector to the public sector.

## Appendix 2

### Examining the extent of diversity in personality traits

#### Panel A: Aggregation of personality traits

To justify the aggregation of individual scores to sample means, we calculated two intraclass correlation coefficients (ICC) of each personality trait. ICC(1) is a measure of the extent to which a participant may represent all participants within the sample and ICC(2) is a measure of reliability of sample means (Klein & Kozlowski, 2000). Prior research use a benchmark of 0.05 for ICC(1) and 0.70 for ICC (2) (Klein & Kozlowski, 2000; LeBreton & Senter, 2008), indicating that coefficients higher than 0.05 for ICC(1) and higher than 0.70 for ICC(2) support the similarity within the sample. Table A1 provides the ICC(1) and ICC(2) for the five personality traits in our study and shows that the coefficients are above the cutoff values, except for ICC(2) of agreeableness. On average, these findings support the aggregation of personality traits.

**Table A1**  
Intraclass Correlation Coefficients (ICC).

Personality trait	ICC(1)	ICC(2)
Neuroticism	0.244	0.821
Extroversion	0.208	0.788
Openness	0.082	0.705
Agreeableness	0.097	0.666
Conscientiousness	0.208	0.783

#### Panel B: Differences on personality trait and demographic questions across independent variables

To examine whether there are significant differences on the personality trait and demographic questions across the different groups of our two independent variables of interest (Firm Type and Experience Level), we conducted one-way ANOVAs and two-way ANCOVAs. In the one-way ANOVAs (not tabulated), we used the five personality traits and the two demographic questions as dependent variables. First, the results show significant differences on gender ( $F_{2,978} = 4.313$ ;  $p = 0.014$ ), age ( $F_{2,978} = 6.702$ ;  $p = 0.001$ ), neuroticism ( $F_{2,978} = 3.145$ ;  $p = 0.044$ ), extroversion ( $F_{2,978} = 7.266$ ;  $p = 0.001$ ), and conscientiousness ( $F_{2,978} = 3.749$ ;  $p = 0.024$ ) across Firm Type. Second, the results show significant differences on gender ( $F_{6,974} = 11.380$ ;  $p < 0.001$ ), age ( $F_{6,974} = 281.670$ ;  $p < 0.001$ ), neuroticism ( $F_{6,974} = 27.134$ ;  $p < 0.001$ ), extroversion ( $F_{6,974} = 9.456$ ;  $p < 0.001$ ), and conscientiousness ( $F_{6,974} = 8.583$ ;  $p < 0.001$ ) across Experience Level. There are no significant differences on openness and agreeableness for both Firm Type ( $F_{2,978} = 1.837$ ;  $p = 0.160$  and  $F_{2,978} = 1.439$ ;  $p = 0.238$ , respectively) and Experience Level ( $F_{6,974} = 0.966$ ;  $p = 0.447$  and  $F_{6,974} = 1.318$ ;  $p = 0.246$ , respectively). Overall, the findings of these one-way ANOVAs show that personality traits vary between audit firm types and auditor experience levels, indicating that there is diversity between groups.

In the two-way ANCOVAs, we included Firm Type, Experience Level, the interaction between Firm Type and Experience Level, gender, and age as independent variables and used each personality trait as dependent variable. Results (not tabulated) show significant main effects for Firm Type on neuroticism ( $F_{2,958} = 5.926$ ;  $p = 0.003$ ), extroversion ( $F_{2,958} = 8.468$ ;  $p < 0.001$ ), and conscientiousness ( $F_{2,958} = 3.311$ ;  $p = 0.037$ ) and for Experience Level on neuroticism ( $F_{6,958} = 10.410$ ;  $p < 0.001$ ), extroversion ( $F_{6,958} = 12.007$ ;  $p < 0.001$ ), agreeableness ( $F_{6,958} = 2.428$ ;  $p = 0.025$ ), and conscientiousness ( $F_{6,958} = 10.213$ ;  $p < 0.001$ ).<sup>17</sup> The interaction is insignificant in all models. Overall, the findings of these two-way ANCOVAs show an association between Firm Type and personality traits and between Experience Level and personality traits, indicating that there are personality differences between groups.

#### Panel C: Main analyses on personality trait diversity

To examine the extent of personality diversity in the auditing profession for both audit firm types and auditor experience levels to test Proposition 1 and 2, we conducted multivariate analyses by using the method outlined by Schneider et al. (1998) and validated by Giberson et al. (2005) and Satterwhite et al. (2009) According to this method, there is evidence of homogeneity within firm types or

<sup>17</sup> The significant finding on agreeableness for Experience Level is inconsistent with the findings of the one-way ANOVA. This inconsistency is driven by the inclusion of gender and age as covariates, highlighting the need to include these demographic questions as covariates in our analyses to examine personality trait diversity.

experience levels when the within-group variance is significantly lower than the between-group variance (Schneider et al., 1998). Hence, we use a two-stage process for these empirical analyses. First, we run two one-way MANCOVAs (not tabulated) using Firm Type versus Experience Level as the categorical independent variable, the five personality traits of the FFM as dependent variables, and gender and age as control variables. A significant Wilks' lambda on these MANCOVAs indicates differences between groups. Second, we calculate the squared canonical correlation, which is the multivariate analog of the ICC. As such, the squared canonical correlation represents the ratio of between-group variability to total variability in personality and can be interpreted as the effect size of similarity within groups. Consistent with prior research (Satterwhite et al., 2009; Schneider et al., 1998), we use a cutoff value of 0.12 for the squared canonical correlation as an indicator of homogeneity. Overall, higher squared canonical correlations combined with a significant Wilks' lambda provide evidence of homogeneity because of differences between groups and similarities within groups.

The findings of our first MANCOVA show a significant main effect for Firm Type ( $F_{15,2686} = 17.120$ ; Wilks'  $\lambda = 0.777$ ;  $p < 0.001$ ), indicating personality differences between audit firm types. The squared canonical correlation for Firm Type is 0.13, which is above the cutoff value for homogeneity, indicating similarity of personality traits within audit firm types. These findings hold when we use a categorical variable for office size (three groups: less than or equal to 50 employees, 51–150 employees, and greater than 150 employees) or when we use an indicator variable for Big Four versus non – Big Four audit firms as independent variables. Overall, these findings indicate that there is homogeneity of personality for Firm Type because there are differences in personality traits between and similarities within audit firm types, providing support for Proposition 1.

The findings of our second MANCOVA show a significant main effect for Experience Level ( $F_{15,2686} = 23.066$ ; Wilks'  $\lambda = 0.716$ ;  $p < 0.001$ ), indicating personality differences between auditor experience levels. The squared canonical correlation for Experience Level is 0.16, which is above the cutoff value for homogeneity, indicating similarity of personality traits within auditor experience levels. These findings hold when we use an indicator variable for higher level (manager to partner) versus lower level (staff to junior manager) as the independent variable. Overall, these findings indicate that there is homogeneity of personality for Experience Level because there are differences in personality traits between and similarities within auditor experience levels. Thus, we find support for Proposition 2.

### Appendix 3

#### Examining individual personality traits

To examine the extent of personality diversity at the individual trait level, we calculated an average deviation (AD) index for each item of the personality questionnaire, both for Firm Type and Experience Level. The AD index is a method of interrater agreement as outlined by Burke and Dunlap (2002) and employed by Bradley-Geist and Landis (2012). This index is calculated by summing the absolute values of deviation of each participant's mean score on each personality item within a firm type (or experience level) from the mean score for that firm type (or experience level), and dividing this sum by the number of participants in that firm type (or experience level). To calculate this index, we used Eq. (1) as follows:

$$AD_{M(j)} = \frac{\sum_{k=1}^N |x_{jk} - \bar{x}_j|}{N} \quad (1)$$

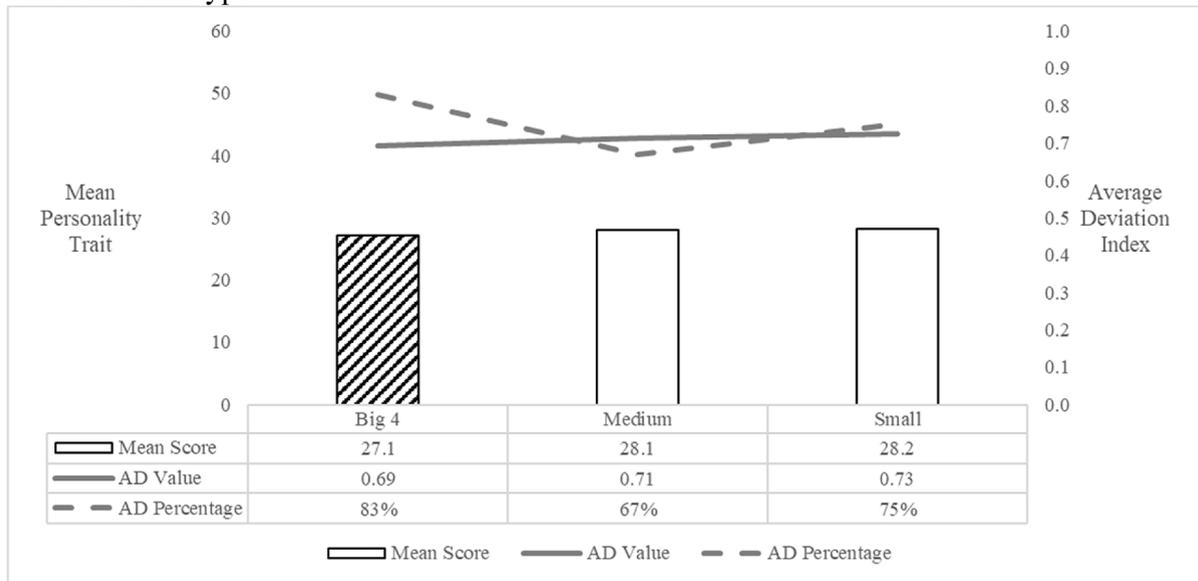
where  $N$  is the number of participants for an item  $j$ ,  $x_{jk}$  is the  $k$ th participant's rating on item  $j$ , and  $\bar{x}_j$  is the mean of the participants' scores on item  $j$  (Burke & Dunlap, 2002). A lower score on the AD index indicates a higher level of agreement between participants; thus, homogeneity. When interrater agreement is high, the within-group variability is low. As such, the AD index is a measure that distinguishes differences in the homogeneity of personality traits. Because the AD values are calculated for each firm type (and experience level) on each personality trait, we are able to discern which particular personality traits would be homogenous.

Burke and Dunlap (2002) present guidelines to evaluate the level (or magnitude) of agreement when using the AD index. The guideline for Likert-type scales such as our personality questionnaire is a cutoff value for the AD index approximated as  $c/6$ , where  $c$  is the number of response options for a Likert-type item. Regarding our personality questionnaire, this means a cutoff value of 0.83 (5/6). Accordingly, an AD index below 0.83 means homogeneity of personality and above 0.83 means heterogeneity of personality. As each personality trait has 12 items, an important disadvantage of using this guideline is the potential of aggregating heterogeneous and homogenous items. Therefore, we also use the guideline to evaluate categorical judgments (i.e., heterogeneous-homogenous). Following Burke and Dunlap (2002), there is homogeneity of personality when more than 79 percent of the personality items within a firm type or experience level are below the cutoff value of 0.83. We use these guidelines to examine which specific personality traits are homogenous (similar) versus heterogeneous (diverse). Although these guidelines are helpful in determining which personality traits are relatively more homogeneous, some care is needed in drawing conclusions based on these exact numbers because the practical difference between 78 and 80 percent of the items or between a cutoff value of 0.82 or 0.84 is likely to be limited.

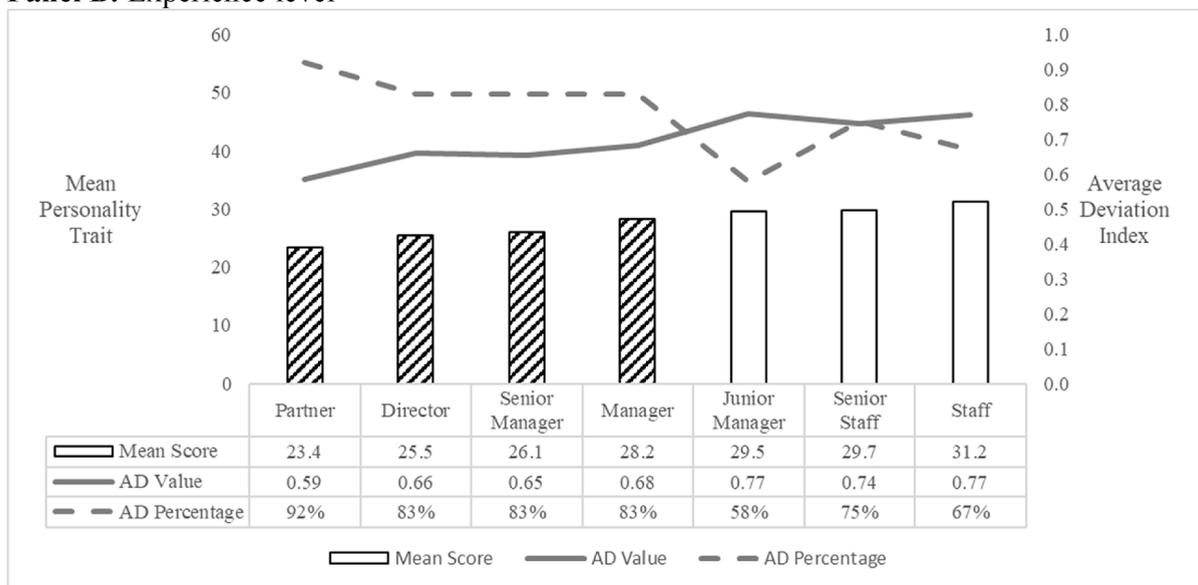
Figs. A1–A5 depict the extent of homogeneity for each of the five personality traits for both Firm Type and Experience Level based on the guidelines of Burke and Dunlap (2002). Fig. A1 shows that Big Four participants have a lower score on neuroticism than participants from medium-sized and small audit firms. Further, we find homogeneity within Big Four firms and heterogeneity within medium-sized and small audit firms. Thus, Big Four firms are not diverse on neuroticism. For Experience Level, we find that participants at the higher levels (i.e., from manager to partner) have a lower score on neuroticism than participants at the lower levels (i.e., from staff to junior manager). Further, we find homogeneity within these higher levels versus heterogeneity within the lower levels of auditor experience. Thus, managers and partners are not diverse on neuroticism.

Fig. A2 shows that Big Four participants have a higher score on extroversion than participants from medium-sized and small audit

**Panel A: Firm type**



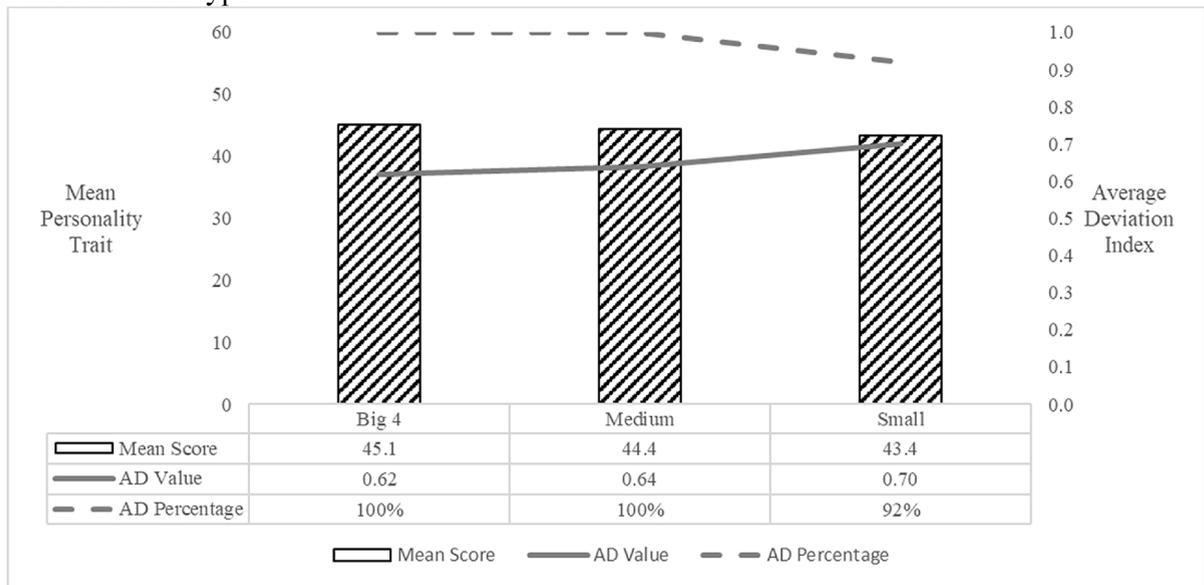
**Panel B: Experience level**



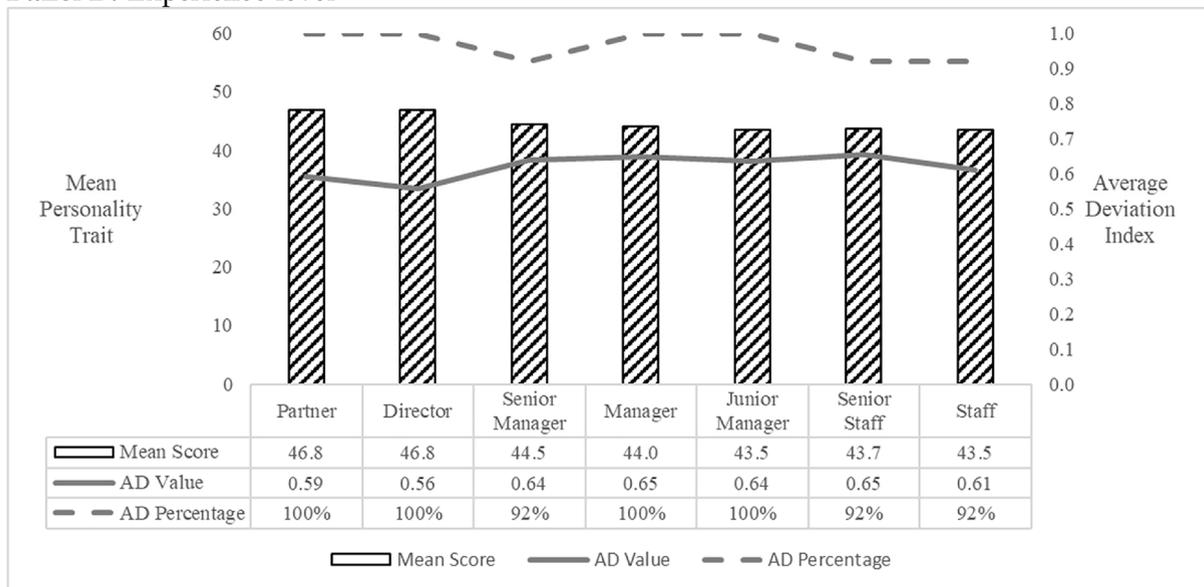
Note. Panel A (Panel B) of Figure 1 shows to what extent homogeneity of personality exist for neuroticism at each type of audit firm (each experience level). The columns represent the mean score of neuroticism, measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The solid (dotted) lines represent the AD value (percentage). Firm types and experience levels that are homogeneous (i.e., AD value below the cutoff of 0.83 and AD percentage above 79%) are represented by columns with pattern fill, whereas heterogeneous ones are represented by blank columns.

Fig. A1. Homogeneity of personality for neuroticism.

**Panel A: Firm type**



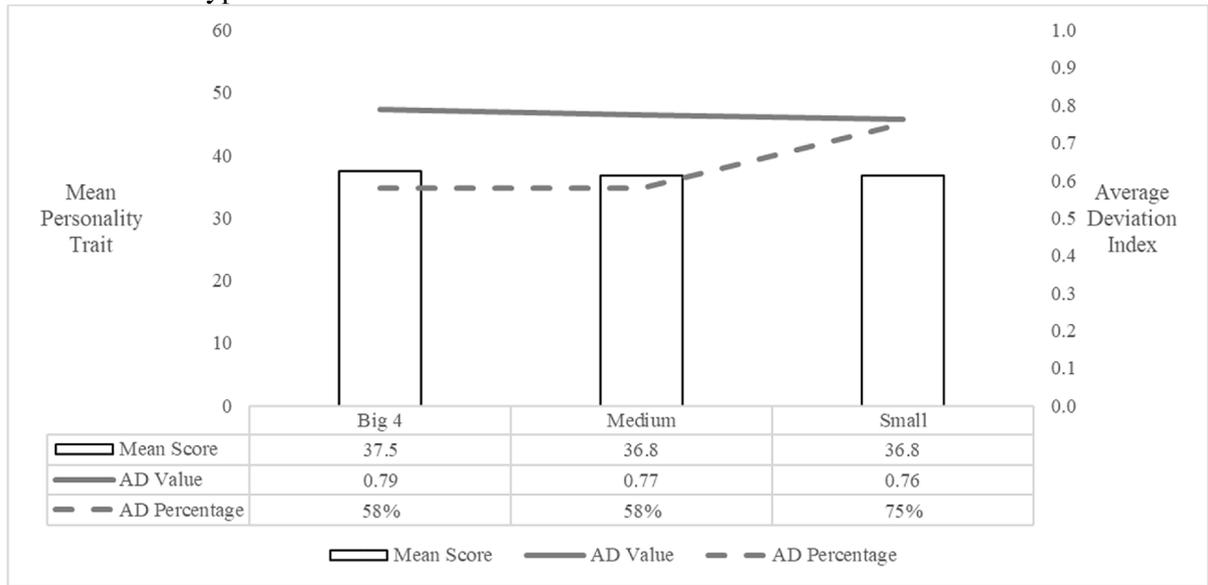
**Panel B: Experience level**



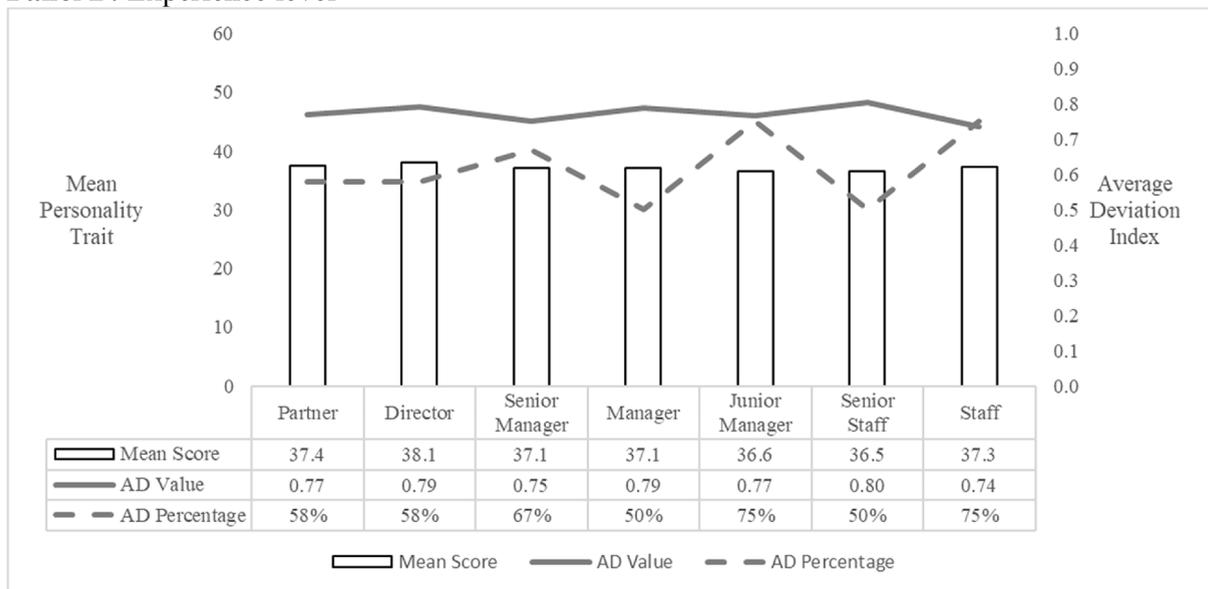
Note. Panel A (Panel B) of Figure 2 shows to what extent homogeneity of personality exist for extroversion at each type of audit firm (each experience level). The columns represent the mean score of extroversion, measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The solid (dotted) lines represent the AD value (percentage). Firm types and experience levels that are homogeneous (i.e., AD value below the cutoff of 0.83 and AD percentage above 79%) are represented by columns with pattern fill, whereas heterogeneous ones are represented by blank columns.

Fig. A2. Homogeneity of personality for extroversion.

**Panel A: Firm type**



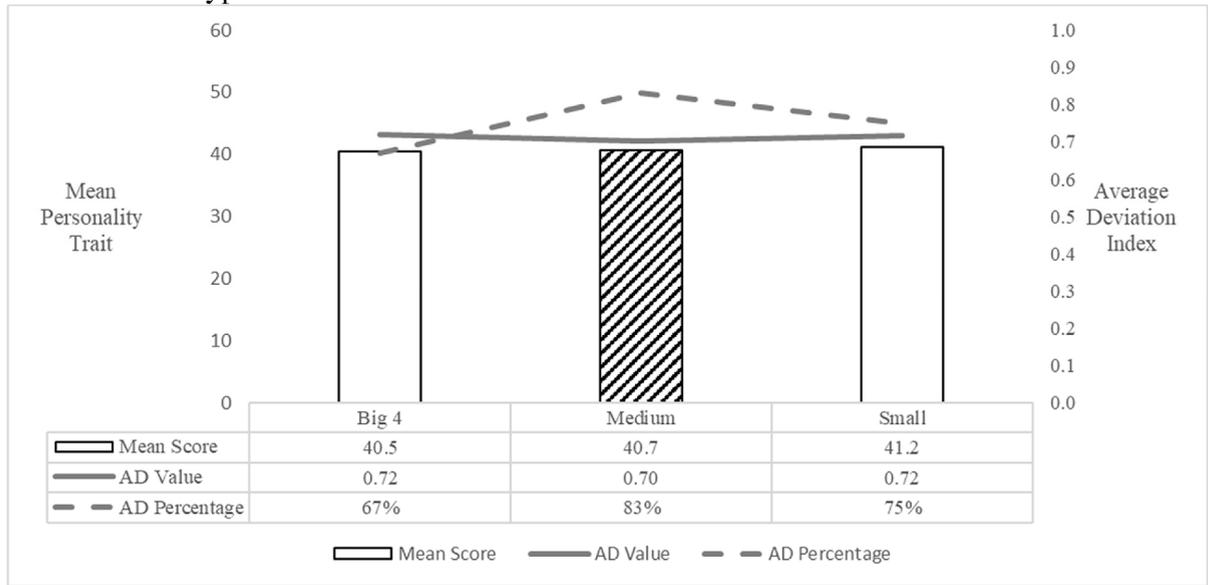
**Panel B: Experience level**



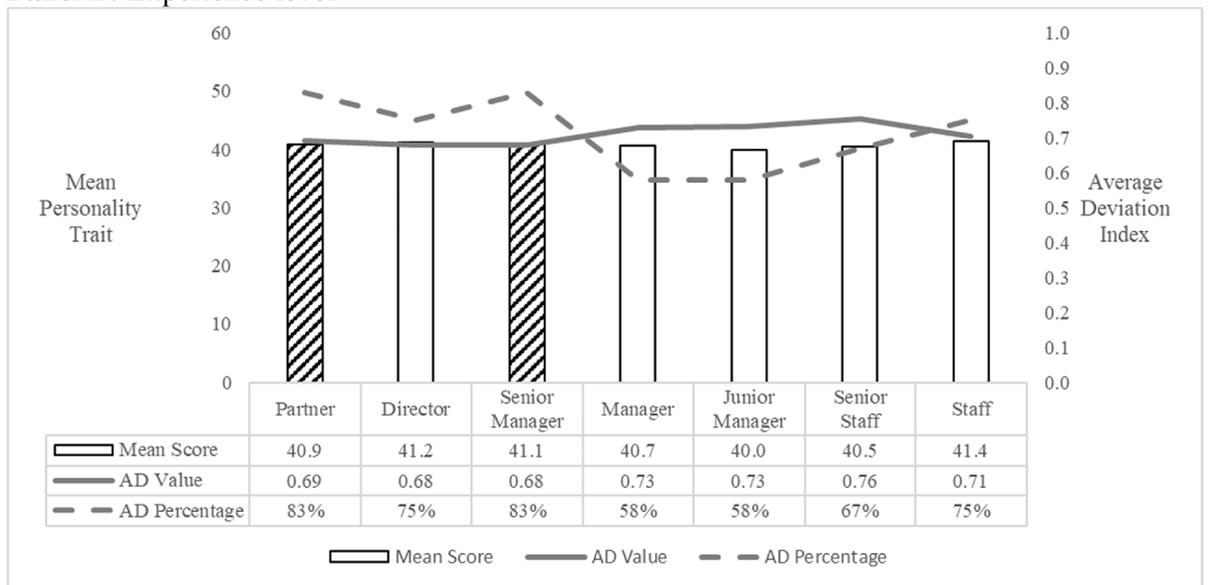
Note. Panel A (Panel B) of Figure 3 shows to what extent homogeneity of personality exist for openness at each type of audit firm (each experience level). The columns represent the mean score of openness, measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The solid (dotted) lines represent the AD value (percentage). Firm types and experience levels that are homogeneous (i.e., AD value below the cutoff of 0.83 and AD percentage above 79%) are represented by columns with pattern fill, whereas heterogeneous ones are represented by blank columns.

Fig. A3. Homogeneity of personality for openness.

**Panel A: Firm type**



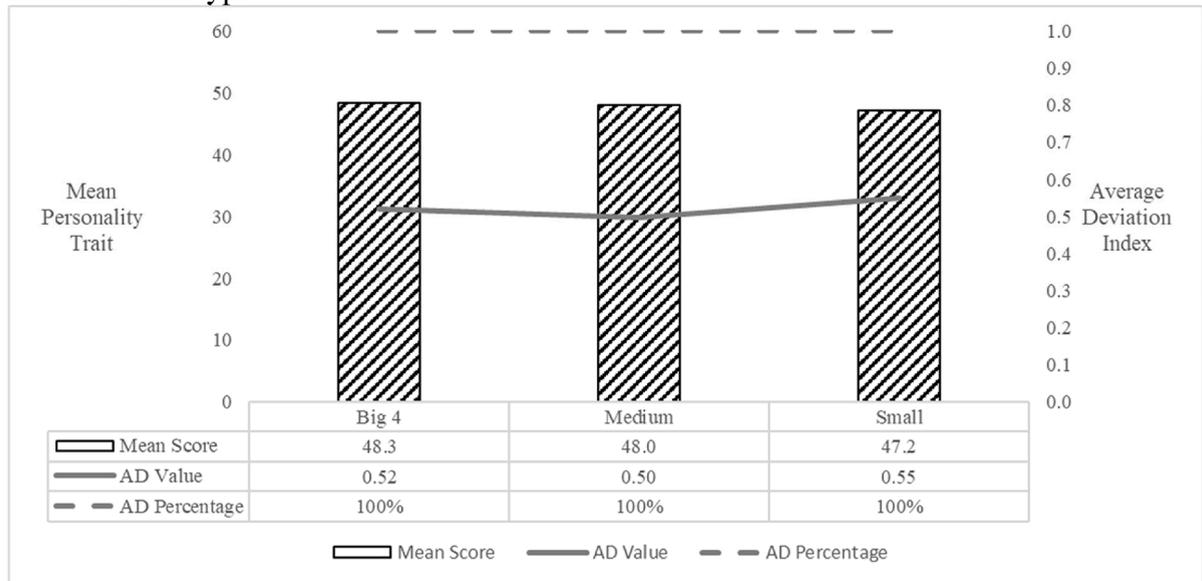
**Panel B: Experience level**



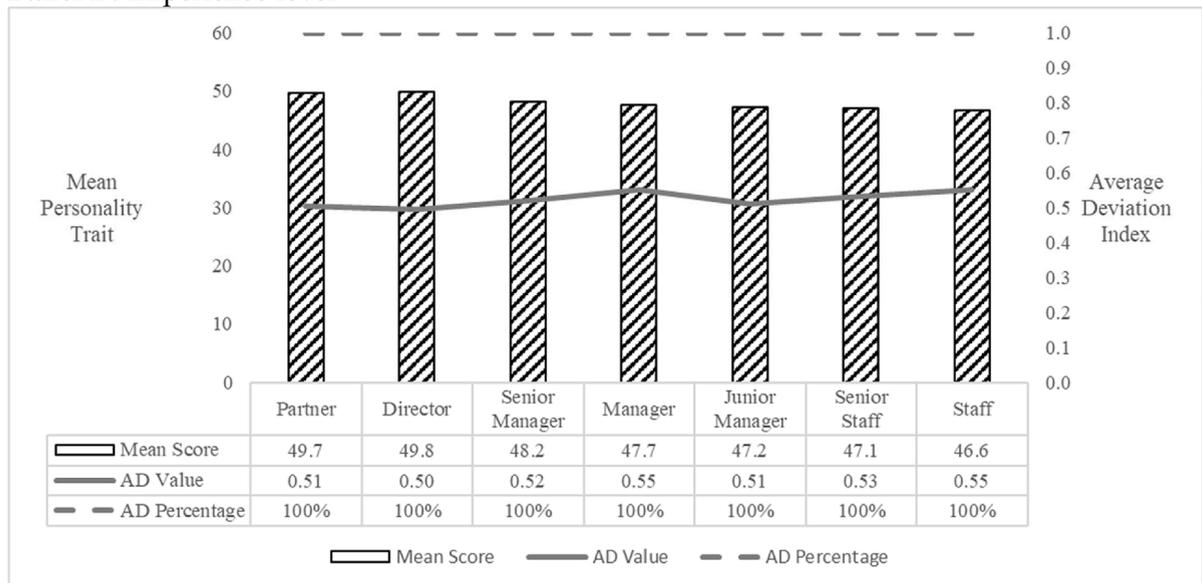
Note. Panel A (Panel B) of Figure 4 shows to what extent homogeneity of personality exist for agreeableness at each type of audit firm (each experience level). The columns represent the mean score of agreeableness, measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The solid (dotted) lines represent the AD value (percentage). Firm types and experience levels that are homogeneous (i.e., AD value below the cutoff of 0.83 and AD percentage above 79%) are represented by columns with pattern fill, whereas heterogeneous ones are represented by blank columns.

Fig. A4. Homogeneity of personality for agreeableness.

**Panel A: Firm type**



**Panel B: Experience level**



Note. Panel A (Panel B) of Figure 5 shows to what extent homogeneity of personality exist for conscientiousness at each type of audit firm (each experience level). The columns represent the mean score of conscientiousness, measured based on the sum of 12 items of the NEO-FFI-3 questionnaire (Hoekstra & De Fruyt, 2014) on a fully labeled 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The solid (dotted) lines represent the AD value (percentage). Firm types and experience levels that are homogeneous (i.e., AD value below the cutoff of 0.83 and AD percentage above 79%) are represented by columns with pattern fill, whereas heterogeneous ones are represented by blank columns.

**Fig. A5.** Homogeneity of personality for conscientiousness.

firms. Further, we find that partners and directors score higher on extroversion than managers and staff. Nonetheless, all audit firm types and auditor experience levels are homogeneous, indicating that the auditing profession lacks diversity on extroversion.

Fig. A3 shows no meaningful differences on openness across audit firm types and auditor experience levels, consistent with the findings of the one-way ANOVA as presented in Panel B of Appendix 2. Further, we find heterogeneity within all firm types and experience levels, indicating that there is diversity on openness in the auditing profession.

Fig. A4 shows no meaningful differences on agreeableness across audit firm types and auditor experience levels, consistent with the findings of the one-way ANOVA as presented in Panel B of Appendix 2. Further, we find homogeneity within medium-sized audit firms and within partner and senior manager levels. Thus, Big Four and small audit firms and all experience levels except for partners and senior managers are diverse on agreeableness.

Finally, Fig. A5 shows that participants from Big Four and medium-sized audit firms have a higher score on conscientiousness than participants from small audit firms. Further, partners and directors score higher on conscientiousness than managers and staff. Nevertheless, all audit firm types and auditor experience levels are homogeneous, indicating that there is no diversity on conscientiousness in the auditing profession.

## Appendix 4

### Personality traits and audit performance: potential implications and research questions

Personality Trait (A)	Potential Implications for Audit Performance (B)	Future Research Questions Examining the Impact of Homogeneity on Audit Performance (C)
<p>Neuroticism: It refers to the tendency to experience negative emotions. It is characterized by worrying, pessimism, and lack of temperament versus calm and stability.</p>	<p>High Levels of Neuroticism</p> <ul style="list-style-type: none"> <li>- May exhibit more anxiety, moodiness, and perfectionist beliefs.</li> <li>- May be more prone to work stress.</li> <li>- May exhibit less job satisfaction and greater turnover.</li> <li>- May exhibit less effective leadership.</li> </ul> <p>Low Levels of Neuroticism</p> <ul style="list-style-type: none"> <li>- May indicate a better ability to handle the natural characteristics of job stress.</li> <li>- May be more successful at managing client relations.</li> <li>- May correlate with task accomplishment.</li> <li>- May be able to deal with problems and find solutions more easily.</li> <li>- May be better at dealing with uncertainty.</li> </ul>	<p>Do homogenous audit teams with high (low) levels of neuroticism exhibit:</p> <ul style="list-style-type: none"> <li>- More (less) inefficiency in performing audit tasks; hence, greater audit fees?</li> <li>- Lower (higher) repeated performance in the face of negative performance evaluations?</li> <li>- Less (greater) ability to handle difficult client interactions?</li> <li>- More (less) job dissatisfaction, stress?</li> <li>- Less (more) professional skepticism?</li> <li>- Less (more) effective teamwork?</li> </ul>
<p>Extroversion: It refers to level of comfortability with relationships to others. It is characterized by sociability, gregariousness, assertiveness, outgoingness, and talkativeness versus quiet and reserved.</p>	<p>High Levels of Extroversion</p> <ul style="list-style-type: none"> <li>- May be beneficial for client/team interactions and negotiations and be better able to information seek and persuade others.</li> <li>- May be associated with training proficiency.</li> <li>- May be better at performing social tasks.</li> <li>- May be positively associated with team performance.</li> </ul> <p>Low Levels of Extroversion</p> <ul style="list-style-type: none"> <li>- May provide more deep-thinking need to problem solve.</li> <li>- May be better at performing logical/precision tasks.</li> </ul>	<p>Do homogenous audit teams with high (low) levels of extroversion exhibit:</p> <ul style="list-style-type: none"> <li>- Less (more) concern for client confidentiality?</li> <li>- Greater (lesser) confidence in performing work tasks?</li> <li>- Greater (lower) levels of power struggles in team environments?</li> <li>- More (less) successful client interactions?</li> <li>- Worse (better) brainstorming?</li> <li>- More (less) professional skepticism?</li> <li>- More (less) effective client negotiations?</li> </ul>
<p>Openness: It reflects the extent to which a person is open-minded. It is characterized by openness to change, experiencing new things, flexible in thinking, creativity, artistic and intellectual ability versus being incurious and uncreative.</p>	<p>High Levels of Openness</p> <ul style="list-style-type: none"> <li>- May be able to brainstorm more creative solutions.</li> <li>- May be more comfortable with unstructured problems and outside the box thinking.</li> <li>- May be associated with training proficiency.</li> <li>- May be associated with information seeking.</li> <li>- May be able to interact frequently to accomplish task completion.</li> </ul>	<p>Do homogenous audit teams with high (low) levels of openness exhibit:</p> <ul style="list-style-type: none"> <li>- More (less) creative solutions in performing audit tasks or in client negotiations?</li> <li>- The ability to audit complex estimates more (less) effectively and efficiently?</li> <li>- The ability to exhibit more (less) professional skepticism?</li> </ul>

(continued on next page)

(continued)

Personality Trait (A)	Potential Implications for Audit Performance (B)	Future Research Questions Examining the Impact of Homogeneity on Audit Performance (C)
	<ul style="list-style-type: none"> <li>- May be less committed to an employer.</li> <li>Low Levels of Openness</li> <li>- May be more likely to be conservative.</li> <li>- May be less open to feedback.</li> <li>- May be less willing to adapt to change, new processes/technologies.</li> </ul>	<ul style="list-style-type: none"> <li>- More (less) willingness to accept and incorporate training/feedback?</li> <li>- Less (more) conservatism in the audit process?</li> <li>- More (less) willing to accept and incorporate new technologies in the audit process?</li> <li>- More (less) professional skepticism?</li> </ul>
Agreeableness: It reflects concern for social harmony. It is characterized by trusting of others, willingness to compromise, cooperativeness, and consideration versus rudeness, uncooperativeness, and suspicion.	<p>High Levels of Agreeableness</p> <ul style="list-style-type: none"> <li>- May build more trust with clients and teams.</li> <li>- May lead to more successful client negotiations.</li> <li>- May be positively associated with team performance.</li> <li>- May be less able to handle conflict directly.</li> </ul> <p>Low Levels of Agreeableness</p> <ul style="list-style-type: none"> <li>- May yield to a client more and be less skeptical.</li> <li>- May lead to better task execution.</li> <li>- May lead to the inability to manage conflict.</li> </ul>	<p>Do homogenous audit teams with high (low) levels of agreeableness exhibit:</p> <ul style="list-style-type: none"> <li>- More (less) efficient and effective client negotiations?</li> <li>- More (less) efficient and effective team performance?</li> <li>- Lower audit fees?</li> <li>- Lower quality control issues?</li> <li>- More (less) professional skepticism?</li> <li>- More (less) likely to be deceived by client?</li> </ul>
Conscientiousness: It reflects a tendency to display self-discipline and strive for achievement. It is characterized by dutifulness, responsibility, achievement orientation, organization, and self-discipline, versus disorderliness and unreliability.	<p>High Levels of Conscientiousness</p> <ul style="list-style-type: none"> <li>- May be more orderly, disciplined, and work systematically.</li> <li>- May lead to audit efficiencies in terms of task completion.</li> <li>- May be positively associated with team performance.</li> <li>- May be less extrinsically motivated.</li> </ul> <p>Low Levels of Conscientiousness</p> <ul style="list-style-type: none"> <li>- May lead to auditors accepting management's biased estimates.</li> <li>- May lead to "free-loading" in a team environment.</li> </ul>	<p>Do homogenous audit teams with high (low) levels of conscientiousness exhibit:</p> <ul style="list-style-type: none"> <li>- Less (more) flexibility/adaptability to their work environment?</li> <li>- Less (more) response to extrinsic rewards?</li> <li>- More (less) professional skepticism?</li> <li>- More (less) effective team performance?</li> </ul>

*Note.* Column B draws from prior research and our own brainstorming to present the potential implications of each personality trait on audit performance (Barrick & Mount, 1991; Fitzgerald et al., 2015; Hosmanek et al., 2014; McCrae & Costa, 1999; Neuman et al., 1999; Van Kujjck & Paresi, 2020). We discuss performance implications for both high and low values of a trait (based on the mean trait score). Column C presents potential future research questions that examine the implications of homogeneity on audit team performance indicators such as job performance, client/team interactions, negotiation outcomes, professional skepticism, brainstorming, etc. Depending on the specific research question examined, these suggestions for future research are appropriate for experimental, qualitative, and empirical research methods. Research questions might be adapted to fit with the respective research method.

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