What makes audit partners, managers, and their teams successful?

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AND THEIR TEAMS SUCCESSFUL?

Lena Pieper

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DISSERTATION

to obtain the degree of Doctor at Maastricht University,

on the authority of the Rector Magnificus, Prof. dr. Pamela Habibović

in accordance with the decision of the Board of Deans,

to be defended in public

on Thursday 22nd of June 2023 at 10.00 hours.

by

Lena Pieper

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Prof. dr. Ann Vanstraelen

Prof. dr. Jere Francis

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Prof. dr. Wim Gijselaers

Prof. dr. Anna Gold (Vrije Universiteit Amsterdam)

Prof. dr. Mark Peecher (University of Illinois Urbana-Champaign)

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Almost exactly ten years ago, I moved to Maastricht to start my Bachelor's degree in International Business. Little did I know what journey was about to start for me. Now a decade later, I am about to close the 'Maastricht Chapter' by defending this dissertation, and can truly say "It has been a hell of a journey!" So, I want to use this opportunity to express my sincere gratitude to those who played a fundamental role in helping me achieve this goal and supported me along the way.

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Lena Pieper

Maastricht, June 2023

To my godmother Christiane,
whose unwavering belief in me
has inspired me to reach for the stars.

Contents

Chapter 1 : Introduction

1.1 The Importance of the Auditing Profession and Audit Quality

"Public trust in the audit is critical to vibrant capital markets."

(James R. Doty, Former Chairman of the PCAOB)

The auditing profession plays a fundamental role in the functioning of our capital markets: By providing an independent and objective opinion on the financial statements of companies, auditors provide investors with a level of assurance that the financial information presented is accurate and reliable, which ultimately enables an efficient allocation of capital. In order to fulfill this crucial role, investors need to be able to trust the auditing profession and the quality of the auditor's work. However, due to several high-profile accounting scandals and (alleged) audit failures, trust in the auditing profession has been severely damaged. Thus, to ensure the continued functioning and integrity of our capital markets, it is of utmost importance that the audit profession focuses on audit quality to safeguard confidence in the profession.

Yet, defining what constitutes a "high-quality audit" is not as straightforward as one might think. While a uniformly accepted definition of audit quality does not exist, it is often defined as some variation of "the market-assessed joint probability that a given auditor will *both* (a) discover a breach in the client's accounting system, and (b) report the breach" (DeAngelo, 1981, p. 186). This defines audit quality as binary in nature (failure/no failure), a view that is also frequently taken by regulators, whereas other studies (e.g., DeFond & Zhang, 2014; Francis, 2011) maintain that audit quality is continuous in nature. In particular, DeFond and Zhang (2014, p. 280) argue that a binary definition "understates the benefits of high quality, which extend well beyond the simple detection and reporting of GAAP violations to assuring financial reporting quality."

Regardless of the exact definition, audit researchers, practitioners, and regulators generally agree that audit quality varies across engagements and is impacted by a number of factors, ranging from factors at the individual audit partner-level, the office-level, the firm-level up to

the national-level. In an attempt to summarize different factors influencing audit quality, the International Auditing and Assurance Standards Board (IAASB), for example, developed a framework for audit quality (2014).[1] The framework includes five main factors. At the core, audit quality is influenced by inputs (e.g., the knowledge, skills, values, and attitudes of auditors conducting the audit), the actual audit process (i.e., the rigor of the audit process and quality control procedures), and by outputs (i.e., the audit report and other information that is formally prepared and presented). Because an audit is not conducted in a vacuum, the framework also includes contextual factors (such as the litigation and regulatory environment, broader cultural factors, and the applicable financial reporting framework), and interactions within the financial reporting supply chain (i.e., interactions with management or those charged with governance) (IAASB, 2014).

The input factors directly relates to the people who are conducting the audit. In general, a financial statement audit is conducted by an audit team, which is typically hierarchically structured and includes the signing audit partner, an engagement manager, and audit team members (seniors and staff members). While the audit partner bears the ultimate responsibility of the engagement and signs the audit report, she is typically not involved in the day-to-day supervision of the team. This is where the engagement manager comes in. The manager usually supervises the team on a daily basis and is in direct contact with the responsible partner. The actual audit evidence is mostly collected by the audit team members. It follows that to achieve the goal of completing a high-quality audit, the audit team should function well and needs to be supervised properly. However, given the limited access to audit firms, evidence on the functioning of the audit engagement team and its leaders is scarce. With this dissertation, I hope to fill this gap and provide novel insights from practicing audit teams with the ultimate

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[1] The framework is called "A Framework for Audit Quality: Key Elements that Create ab Environment for Audit Quality" (IAASB, 2014). Other regulatory bodies (such as the Financial Reporting Council (2008), similarly developed a framework to capture the different factors influencing audit quality. Given the overlap between the frameworks, I focus my discussion on the IAASB's framework.

goal of aiding audit firms in their mission to achieve consistently high audit quality and safeguard trust in the profession.

In particular, this dissertation answers the overarching research question "what makes audit partners, managers, and their teams successful?" As this is a broad research question, I break down the question into more specific research questions and I study them following the hierarchical levels within the audit team, see Figure 1. The specific questions are introduced in the next section.
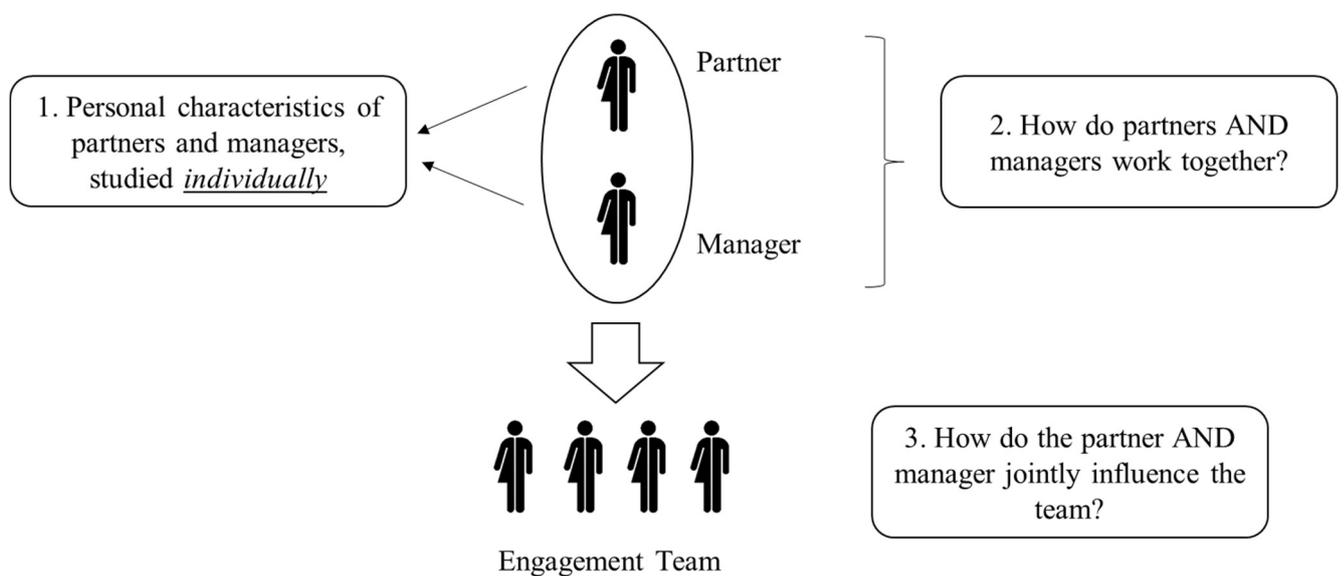
Figure 1: Overview of Research Questions

1.2 Introduction to Research Questions and Overview

The first step of my research, presented in Chapter 2, focuses on the two main leadership figures in the engagement team, the audit partner and the manager. Prior archival audit research documents that audit outcomes vary significantly across individual audit partners (e.g., Cameran, Campa, & Francis, 2022; Gul, Wu, & Yang, 2013; Knechel, Vanstraelen, & Zerni, 2015); however, our understanding of why these inter-auditor heterogeneities arise is limited. Previous studies investigated different demographic characteristics, such as age, gender, education, or experience, but these factors do not explain much of the observed variation

(Lennox & Wu, 2018). Thus, while the individual performance of auditors seems to matter, we do not fully understand what is driving differences in performance. I rely on insights from the organizational behavior (OB) and psychology literature and focus on examining auditors' personality traits. Personality has been shown to be a key determinant of our behavior, and consequently also of our job performance, even after controlling for education and mental ability (McHenry, Hough, Toquam, Hanson, & Ashworth, 1990; McManus & Kelly, 1999). In particular, I investigate the relationship between auditors' personality skills, different skills (commercial, technical, and leadership skills), and their individual job performance as assessed internally by the audit firms. The first descriptive analyses reveal that there is variation in personality traits between Big 4 and non-Big 4 auditors, and that as auditors move up the higher function levels, they become more homogenous in terms of their personality traits. Moreover, I find that distinct auditor skills, such as commercial, technical, and leadership skills, are predicted by their personality traits. Interestingly, the results also highlight that the tension between the commercial and technical aspects of auditing is reflected in opposing personality profiles that benefit each. Finally, the study shows that audit firm assessments of job performance are associated with personality traits, both directly and indirectly through their effect on skills.

In this first study, I look at the audit partner and manager separately to understand how personality influences their individual job performance. However, when looking at how an audit is ultimately performed, the partner and manager *jointly* lead the team and work together in supervising the audit engagement. This partner-manager dual structure is referred to as a "dyad". Thus, to be able to gain a more comprehensive understanding of how an engagement team functions, it is important to consider how the engagement partner and manager work together as a dyad. This is the purpose of my second study, included in Chapter 3.

Specifically, the study addresses two main research questions. As there is almost no prior evidence on the partner-manager dyad, I start by investigating a fundamental question on how partners and managers are selected and matched to work together. Are the partner's and manager's working styles supplementary or complementary? To inform my predictions, I leverage sociology theory, specifically the theory of homophily (McPherson et al., 2001). Homophily generally describes individuals' natural tendency to associate with individuals who are similar to themselves, and patterns of this tendency are evident in virtually all relationships. Therefore, I expect that partners and managers who form a dyad are on average more similar in terms of their working style than those who do not form a dyad.

The second part of this study then examines how the selected partner-manager dyad ultimately influences the functioning of the engagement team. Under which partner-manager combination are team dynamics optimized for team success? I focus on three different elements of team dynamics that are particularly relevant for the auditing context, psychological safety, team identity, and team commitment. As predicted, the results indicate that partners and managers who form a dyad are more similar in terms of their skills and leadership behavior than other random matches based on the available pool of auditors. However, it is important to note that this similarity is not always beneficial for the functioning of the engagement team. Specifically, the study finds that when both partner and manager are highly skilled and demonstrate strong leadership, the similarity between them is associated with a better functioning team. Otherwise, a complementary match is associated with better team dynamics.

The second study provides novel insights into the functioning of the dyad, and the analyses reveal that both the engagement manager and partner play a unique role in fostering team success. Because this dual-leadership structure is largely unexplored, both in the audit setting and more generally in the management literature, the third study, included in Chapter 4, investigates the *leadership behaviors* of the audit partner and manager in greater depth.

Following functional leadership theory (McGrath, 1962; Morgeson, DeRue, & Karam, 2010), the role of a leader is to primarily satisfy the needs of the team that arise during different phases of the teamwork. In the audit team, and many other modern teams, we see that leadership roles are taken on by multiple individuals who are now charged with satisfying the team's needs. Contrary to single leaders, teams with dual leadership structures must coordinate leadership behaviors across leaders, which leads to an important research question: What combination of leadership behaviors across the two leaders results in the highest team performance? I focus on two key leadership behaviors that prior team science literature has identified as important leadership behaviors to satisfy team needs: initiating structure and individualized consideration. Initiating structure refers to the "degree to which a leader defines and organizes his [or her] role and the roles of followers, is oriented toward goal attainment, and establishes well-defined patterns and channels of communication" (Judge, Piccolo, & Ilies, 2004, p. 36), whereas individualized consideration refers to the "degree to which a leader shows concern and respect for followers, looks out for their welfare and expresses appreciation and support" (Judge et al., 2004, p. 36).

The study then investigates different interactive effects between functional combinations of these leadership behaviors across the two team leaders to build team efficacy and improve team performance. The study finds support for both complementary and supplementary rationales. First, the results suggests that when one leader exhibits high initiating structure behavior, team efficacy and ultimately performance increases when the other leader shows more consideration behavior (i.e., a complementary effect). Second, when both leaders exhibit higher levels of consideration (i.e., a supplementary effect), team efficacy is also strengthened. The highest levels of team efficacy and performance occur when the partner exhibits both initiating structure and consideration behaviors, combined with a manager who exhibits high

consideration. The findings overall suggest that it is individualized consideration rather than initiating structure that is critical when a team is led by two leaders.

1.3 Research Method

To answer the different research questions evidence from practicing auditors and their teams is required. Therefore, my co-authors and I obtained a grant (Grant 2019 E01) from the Dutch Foundation for Auditing Research (FAR).[2] Under this grant, we worked together with the ten leading audit firms in the Netherlands (Big 4 firms + six medium-sized audit firms). All studies in this dissertation follow a mixed-method approach, combining evidence from survey data and internal audit firm data. In total, we administered three different surveys with the audit firms: In one survey, we measured auditors' personality traits and skills (used in Chapter 2). The second survey (the "leadership" survey) asked audit team members to evaluate the leadership behavior of the engagement partner and manager, and the third survey (the "team" survey) asked audit team members, including the partner and manager, to evaluate the functioning of the audit team. The data from the leadership and team survey is used for Chapter 3 and Chapter 4.

1.4 Contribution of the Dissertation

The findings of this dissertation enhance our understanding of audit team leaders and the functioning of engagement teams. Using a proprietary and comprehensive data set from practicing audit teams and their leaders, this dissertation makes several important contributions to both academic literature and audit practice.

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[2] The research team behind the 2019E01 grant consists of Jere R. Francis (Project Leader), Murray Barrick, Olof Bik, Ann Vanstraelen and myself. Prior to administering the different surveys, we obtained approval from the respective Institutional Review Boards.

First, while archival audit research assumed audit quality to be constant within an audit firm for a long time, more recent archival audit studies challenged this assumption and provide compelling evidence that audit quality varies significantly across audit firms' offices and even among their audit partners. Thus, a growing number of studies examined different demographic, or externally observable, characteristics to identify the drivers of the 'partner style'. However, "extant research finds that partners' estimated fixed effects are not readily explained by partner's observable characteristics" (Lennox & Wu, 2018, p. 18). Thus, Lennox and Wu (2018) call for more research on auditors' innate personal characteristics. Chapter 2 contributes to answering this call by investigating the role of auditors' personality traits. Unlike other studies on personal characteristics, I use a *direct* measure of the personality traits using a survey instrument from more than 1,600 partners and managers, rather than relying on publicly available data. My study provides a comprehensive analysis of how auditors' personality traits relate to different skills, and ultimately their job performance, for which audit quality delivered at the engagement level is a key performance evaluation criterion (Bik, Bouwens, Knechel, and Zou, 2022).

Second, the leadership and supervision of the audit team, and ultimately the functioning, is assumed to be an essential input to audit quality as also recognized in the auditing standards (e.g., ISA 220, PCAOB AS 1201). Yet, evidence on audit teams and how they work together is rather scarce in the archival literature, as well as the judgment-and-decision-making (JDM) literature, which typically focuses on individual auditor judgments rather than team dynamics. Only a few studies focus on audit team leadership and interactions of team members in decision-making. For example, Nelson, Proell, and Randel (2016) provide evidence that a leader's team orientation, i.e., the degree to which the leader "emphasizes collective group identity and team accomplishment rather than individual identity and accomplishment" (Nelson et al., 2016, p. 1785) positively affects junior auditor's willingness to raise audit issues.

In line with this finding. Gissel and Johnstone (2017) show that when the audit partner's communication emphasizes psychological safety, audit team members are more willing to share private information, resulting in a higher quality fraud brainstorming session. However, most of the experimental studies that study audit teams involve the interaction between an assigned leader and other experimental subjects, rather than members of an actual practicing audit team. Thus, it is not possible to fully capture the complex team dynamics that emerge throughout the entire audit process in a laboratory experiment. The studies in this dissertation rely on data from practicing audit teams, which allows me to conduct a more comprehensive analysis of the different elements influencing the functioning of an audit team.

In particular, Chapter 3 advances our understanding of the role of the partner-manager dyad in an audit team. Prior studies mostly focused on an individual leader, and this study extends the analyses by incorporating the manager. This is in line with concurrent working papers (e.g., Aobdia, Choudhary, & Newberger, 2022) that provide novel evidence on the important role of the engagement manager. I corroborate their findings by demonstrating the role that each leader plays in influencing team dynamics, and under which partner-manager combination the team functions best. Chapter 4 in turn examines in greater detail the leadership behaviors of the partner-manager dyad and different interactive effects. Unlike other dual-leadership studies, both leaders studied in this setting have the same objective (i.e., completing a quality audit). Thus, a key contribution of the third study is to apply functional leadership theory and examine unique influences when two leaders from different levels of authority share leadership responsibility and are jointly held accountable for the results of their team.

Lastly, the dissertation contributes to the wider organizational behavior literature. While the motivation for this dissertation primarily stems from learning more about auditors and the teams within an audit firm, several features of the audit setting make it a particularly interesting setting to study teams: Audit firms are highly decentralized, providing a great degree of

autonomy to the audit partner and her teams. The audit teams are generally fluid and temporary in nature, which might make it harder to develop a feeling of identifying with the team This feeling of mutual collaboration and accountability is a prerequisite for a work group to become a real team, and for the team to realize its full potential. As prior insights on teams are mostly from longstanding or highly specialized teams (e.g., medical teams or space exploration) (Mathieu, Hollenbeck, van Knippenberg, & Ilgen, 2017), the audit setting and its aforementioned attributes provide a more generalizable setting for understanding team functioning.

In addition to the academic contribution, the dissertation and its findings have practical implications for audit firms and other work teams. The studies provide the firms with insights into their performance assessment system, as well as make suggestions for possible hiring, training, and staffing decisions. For example, the first study (Chapter 2) documents that the variation in personality traits decreases across function levels. This suggests that a specific "type" makes it to the partner rank. This goes against the audit firms' stated objective of increasing diversity across ranks. Furthermore, Chapters 3 and 4 enhance our understanding of audit engagement teams and their leaders. For example, the data suggests that 68% of engagement partners in the study select the engagement manager themselves (rather than the audit firm assigning the manager). It is essential for audit firms to understand the consequences of providing partners with that freedom. The results in Chapter 3 reveal that partners are more likely to select a manager with a similar work style, which can negatively influence team dynamics. Chapter 4 further highlights the importance of individualized consideration as key leadership behavior, i.e., caring for the team and showing support and appreciation. Audits are typically very structured and involve numerous deadlines which are associated with significant time pressure. Therefore, audit firms should ensure that the team's leaders emphasize individualized consideration.

1.5 Outline of the Dissertation

The following three chapters present the three research studies that were introduced in this chapter. Chapter 2 presents the study on audit partners' and managers' personality traits and skills. Chapter 3 investigates the formation of the audit partner-manager dyad, and Chapter 4 analyzes the dual leadership role of the partner and manager in greater detail. Chapter 5 concludes by presenting a summary of the main findings, discussing the implications for practice, and offering directions for future research.

Chapter 2 : Does Personality Relate to Job Performance of Audit Partners and Managers?

Abstract[3]

I investigate if personality traits are associated with the skills and job performance of experienced auditors. Based on survey and internal audit firm data from around 1,600 Dutch auditors from the Big 4 and six mid-sized audit firms, I first provide descriptive evidence of significant variation in auditors' personality traits. Personality traits vary between Big 4 and non-Big 4 auditors, and auditors become increasingly homogenous in higher function levels. Next, I find that personality traits predict distinct skills (commercial, technical, and leadership) that are part of the auditor's job. The tension that exists between the commercial and technical aspects of the audit is also reflected in opposing personality profiles that are beneficial for each of the skills. Finally, audit firm assessments of job performance are associated with personality, both directly and indirectly through their effect on skills. Collectively, these results contribute to our limited understanding of what characteristics affect individual auditor performance.

JEL Classifications: M40; M42

Keywords: auditor personality; job performance; skills; audit partner; manager

2.1 Introduction

This paper examines the relationship between auditors' personalities, skills, and job performance. Specifically, I investigate how personality traits of audit partners and managers are related to their performance, both directly and indirectly, through different skills.[4] If auditors with certain personality traits receive higher job evaluations, it follows that the work of these auditors is better and may be associated with higher quality audit outcomes. Studying the potential role of auditors' personality traits is important because audit outcomes vary significantly across individual auditors, yet demographic variables like age or gender account for very little of this variation The lack of explanatory power suggests that other factors exist that affect the performance of individual auditors. To identify these factors, I rely on insights from psychology and organizational behavior (OB) research.

The literature in these two fields provides extensive evidence on the importance of personality in explaining individual behavior. Generally speaking, personality refers to "individual differences in characteristic patterns of thinking, feeling and behaving" (Kazdin, 2000) and is thus the part of our behavior that is constant across situations and stable over time (Barrick, Mount, & Li, 2013). In a professional context, personality traits have been shown to predict overall job performance, even after controlling for education level and inherent mental ability (McHenry et al., 1990; McManus & Kelly, 1999). In addition to being a direct antecedent to performance, personality traits further influence work-related attitudes, skills, and counterproductive work behavior, which in turn can affect job performance (Mount, Ilies, & Johnson, 2006; Rotundo & Sackett, 2002).

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[4] I use the terms personality characteristics and traits interchangeably to refer to the following: the Big 5 personality traits (agreeableness, conscientiousness, emotional stability, extraversion, openness to experience), the Dark Triad, and Bravery, all of which are defined in the next section

I do not study engagement-level audit quality, per se. However, discussions with the audit firms in my study indicate that the firms' job assessments of audit partners and managers take into account engagement-level audit quality, and in limit auditors may be fired for low quality audits identified by firms' internal reviews and/or external inspection reviews.

Despite its potential importance to job performance, evidence on auditors' personality traits is scarce, and it is not clear ex ante if findings from the OB literature generalize to the auditing profession for the following reasons. First, the auditing profession is a specialized niche profession, which might exhibit little variation in the auditors' personality profile. Second, even if variations in personality traits exist across auditors, audit firms have tight quality controls in place to reduce the influence of idiosyncratic behavior. These controls might mute (subtle) differences in personality. Third, being an auditor involves a multitude of tasks, each requiring different skills and competencies. For example, besides having the technical skills and knowledge to perform a high-quality audit, an auditor needs to have leadership competencies to manage an engagement team, and commercial skills for client acquisition and management. The OB literature highlights that not all personality traits matter equally across professions, across tasks, and across performance criteria (Barrick, Mount, & Judge, 2001). Thus, different personality traits might be beneficial for the distinct skills an auditor requires to perform well. Fourth, the auditing profession is distinctly different from other professional services firms: While the auditor has a duty to serve the public, the auditor is paid by the client. This creates an inherent tension, and personality might therefore play an important role for auditors in balancing this conflict.

Taken together, it is an empirical question whether and how auditors' personality traits are related to their job performance. I address this question by examining how personality traits relate to performance, both directly, and indirectly, through three distinct skills (commercial, technical, and leadership). To do so, I collect data from audit partners and managers at the ten

leading audit firms in the Netherlands, including the Big 4 firms and six medium-sized audit firms. I combine data from a survey instrument with internal audit firm data. Specifically, I use a survey instrument to collect data on auditors' self-assessed personality traits and skills, and rely on the audit firms' internal data to obtain the firms' formal assessments of auditor job performance.

The primary finding is that personality traits are associated with auditors' overall job performance. Specifically, the results from a structural equation model show that personality traits are related to job performance both directly and indirectly through commercial and technical skills. The strongest direct predictor of job performance is extraversion: being a more outgoing individual with a greater natural talent to lead, is positively associated with job performance. A greater degree of extraversion is also beneficial for commercial and leadership skills.

The results further highlight that several personality traits have opposing effects on skills and job performance: For example, agreeableness is positively related to commercial and leadership skills but has a strong negative association with technical skills and overall job performance. Another example is that individuals scoring high on the Dark Triad are associated with higher commercial skills, but the direct relationship between the Dark Triad and job performance is negative. Similarly, conscientiousness is positively associated with technical skills but has a negative effect on commercial skills. Thus, there is clearly some tension in how some of the personality traits affect skills and job performance.

Additional analyses look at unique aspects of the different personality traits, referred to as facets, and investigate how the relationship between personality and job performance varies across function levels. The most noteworthy difference is that audit partners, in contrast to directors and (senior) managers, are rewarded for their leadership skills rather than their commercial skills. A possible explanation for this finding is that in order to become a partner,

individuals must demonstrate their commercial competencies. Thus, all partners have a sufficiently high level of commercial skills, and leadership skills become the differentiating factor in job performance.

This study contributes both to academic research and practice. I extend the current literature by offering insights that result in a deeper understanding of how the characteristics of individual auditors affect their performance. Combining archival auditing literature with insights from the OB and psychology literature, I collect a unique and rich data set that allows me to directly measure personal characteristics (beyond demographics) that are associated with auditor job performance. To the best of my knowledge, this is the first large sample study in an audit setting that measures personality traits and skills. With around 1,600 audit partners and managers from ten different audit firms, I can provide a comprehensive analysis and respond to calls for research on audit partner characteristics (e.g., Lennox & Wu, 2018).

The importance of individual auditors' characteristics has also been recognized in several audit quality frameworks, such as the *Framework for Audit Quality* (IAASB, 2014) and the *Audit Quality Framework* by the FRC (2008). Both frameworks acknowledge that an auditor's individual characteristics, such as skills, capabilities, and attitude, influence audit quality. However, given the lack of archival evidence, there is currently a limited understanding of how these characteristics actually play a role. The findings provide a comprehensive analysis of how auditors' personality traits and their individual facets relate to different auditor skills, and ultimately their job performance, for which audit quality delivered at engagement level is a key performance evaluation criterion (Bik, Bouwens, Knechel, and Zou 2022).

The study also has implications for auditing practice. The results give audit firms insights into auditors' personality profiles and how personality is associated with different skills and firm-assessed job performance. I document that auditors become increasingly homogenous as they reach higher ranks, suggesting the existence of 'typical' partner characteristics. As the

audit firms are actively trying to increase diversity in their higher ranks, the insights from this study may help the firms to re-think their performance evaluation systems, and to broaden their job performance criteria[5]. In addition, audit firms generally face tension between professional and commercial dimensions of audit practice. This tension is also reflected in the opposing personality traits that are beneficial for each of these skills. As audit firms ultimately need both skills for sustained success, they must find an effective way to manage the seeming incompatibility. A possible solution could be to develop more targeted training sessions that consider inherent differences in personality traits.

The remainder of the paper is structured as follows. Section 2 provides the background of the study and provides a conceptual framework, and Section 3 describes the sample and data collection process. Section 4 presents descriptive evidence on auditor's personality profiles by comparing auditors to the general population, and examining differences across audit firms and function levels. Section 5 tests the conceptual framework and presents the main results. Section 6 reports additional analyses, and section 7 concludes and discusses the implications of the findings.

2.2 Background and Conceptual Framework

Background

An emerging research stream in the audit literature investigates partner demographic characteristics to explain variation in audit outcomes (Lennox & Wu, 2018). However, the analyses in Gul et al. (2013) and Cameran, Campa, et al. (2022) show two important results. First, differential partner effects are important and explain more variation in audit outcomes than the combined effects of audit firms and offices. Second, while partner effects are very

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[5] All participating audit firms emphasize a strategic focus on increasing diversity. They further acknowledge that building a diverse workforce goes beyond increasing female representation. For example, PwC (2021) states in their transparency report "Together also means inclusive. Innovative thinkers, critical thinkers with different opinions: we recognize the importance of a greater diversity of colleagues in all respects".

important, individual demographic variables have little or no explanatory power after simultaneously controlling for the effects of audit firms and offices. Thus, we need to go beyond publicly-available demographic variables to understand what it is about auditors that matters and drives differences in their job performance. To explore this, I rely on the OB and psychology literatures to identify factors that are connected to an individual's behavior. Reviewing this literature highlights the role of *personality* in determining an individual's behavior, in particular, job-related behavior and performance (Barrick & Mount, 1991; Barrick et al., 2001; Salgado, 1997, 2002).

Kazdin (2000) defines personality as "individual differences in characteristic patterns of thinking, feeling and behaving". These patterns are captured in different personality traits that influence behaviors in a way that is consistent over situations and time (Barrick et al., 2013), even after controlling for differences in education and mental ability (McHenry et al., 1990; McManus & Kelly, 1999). One's personality includes several distinctive factors, and different models of personality structures have evolved over time. In the 1980s, psychology research converged to the five-factor model of personality (often referred to as 'Big 5' personality traits or the 'FFM').[6] The five factors included in the model are agreeableness, emotional stability, extraversion, conscientiousness, and openness. Agreeable individuals are good-natured, considerate, and tolerant, rather than antagonistic and uncooperative. Conscientiousness reflects dependability and achievement orientation. That is, being thorough, organized, and disciplined rather than sloppy, distractible, and disorganized. Emotionally stable individuals are more calm and secure rather than ill-tempered and anxious. An extrovert is characterized by being outgoing, dominant, and ambitious rather than shy, quiet, and reserved. Finally, highly

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[6] More recently, a sixth factor (Honesty-Humility) was added to the traditional five factors (Ashton & Lee, 2007; Ashton et al., 2004). This factor is shown to have predicted power above and beyond the FFM, especially in Non-Western cultures. This factor was also measured in the survey, but an exploratory factor analysis on the data clearly confirms the existence of five factors and the sixth factor does not increase the variance explained. Hence, the focus is on the traditional FFM.

open individuals are imaginative and creative and prefer novelty to routine. These five traits are considered to "comprehensively capture the critical stable individual differences in personality." (Barrick et al., 2013, p. 134).

A considerable body of research has used the FFM to understand how personality traits are associated with employee behavior. For example, prior primary and meta-analytic studies show that while some personality traits are related to overall job performance in virtually all jobs, other traits relate to only certain aspects of job performance or job performance in only a few jobs (Barrick & Mount, 1991; Barrick et al., 2001). In general, the two personality dimensions predictive of job performance across occupational groups and job criteria are conscientiousness and emotional stability (Barrick & Mount, 1991; Barrick et al., 2001). It seems intuitive that employees who are more dependable, thorough, persistent, and hard-working (high conscientiousness) and who are calmer, secure, and not depressed (high emotional stability) will perform better overall. The other personality dimensions are valid predictors of performance in some occupational groups or for a specific job performance criterion. For example, extraversion is positively associated with performance when the tasks involve a high degree of interaction, for instance, when the job involves mentoring or leading (Barrick et al., 2001). When interaction mainly consists of helping, cooperating, and nurturing others, more agreeable employees perform better (Mount, Barrick, & Stewart, 1998). Openness to experience (i.e., employees that are intellectual, curious, and imaginative) exhibits a positive association with willingness to learn, and hence training performance (Barrick & Mount, 1991).

In addition to the Big Five personality traits discussed above, I consider two additional personality factors that are potentially important for auditors: the Dark Triad and bravery. While the traits in the FFM are considered a good indication of a 'normal' personality, psychology research identifies additional personality factors that extend the FFM. Paulhus and Williams (2002) introduce the 'Dark Triad of Personality', which captures malevolent qualities

at a subclinical level. The Dark Triad consists of three factors, narcissism, Machiavellianism and psychopathy. All three factors share a common theme with respect to a lack of appropriate empathy and emotionality in interactions with others (Paulhus & Williams, 2002). Individuals scoring high on the 'Dark Triad' often use manipulation "to 'get ahead' while disregarding 'getting along'" (Rauthmann & Kolar, 2012, p. 1). In their meta-analysis, O'Boyle, Forsyth, Banks, Story, and White (2015) investigate how the Dark Triad affects work behavior, particularly job performance and counterproductive work behavior. They find that Machiavellianism and psychopathy are associated with decreased job performance, and counterproductive work behavior increases in all three components of the Dark Triad. This negative effect is in line with Bailey (2015), who shows that individuals exhibiting higher levels of psychopathy are more likely to accept unethical behavior. Despite these negative aspects of the Dark Triad, Hobson et al. (2020) argue, and show experimentally, that the Dark Triad traits can also be beneficial for an auditor, as high Dark Triad auditors are more resistant to lapses in professional skepticism arising from social interaction. Thus, I also consider the Dark Triad as part of an auditor's personality profile.

Bravery is another personality factor associated with workplace behavior, especially in jobs that face conflicting pressures (Peterson & Seligman, 2004). It captures the extent to which "one is willing to accomplish goals in the face of opposition, either external or internal" (Peterson & Seligman, 2004). As an auditor's job regularly involves speaking up, even when facing opposition (e.g., as part of exercising professional skepticism), this could potentially be an important trait for an auditor.

Conceptual Model

Prior behavioral research provides compelling evidence that personality is a stable predictor of performance. Yet insights on auditors' personality traits are scarce and it is not clear ex ante

whether the insights from the OB literature generalize to auditors.[7] Auditing is a specialized niche profession in which audit firms recruit from a narrow pool of similarly educated applicants. Prior studies using accounting and auditing students show little variation in personality (e.g., Kovar et al., 2003; Levy et al., 2011). If no significant variation in the personality traits of auditors exists, then personality cannot be an underlying driver of the observed differences in audit outcomes. In addition, audit firms have tight internal control systems to minimize the effects of extreme individual behaviors. Hence, it is an empirical question whether and how personality traits influence an auditor's job overall performance. Providing an answer to this question is the purpose of this study.

To explore the relationship between personality and job performance, I consider possible direct and indirect effects in line with prior studies in the OB literature (e.g., Berry, Ones, & Sackett, 2007; Mount et al., 2006). Prior research shows that personality traits are associated with proficiency in a variety of skills that ultimately result in higher performance (Blickle et al., 2008; Matthews, 1999; Maurer, Lippstreu, & Judge, 2008). As Matthews (1999) summarizes, two main channels for personality-skill associations have been established: On the one hand, personality traits can be seen as "fixed characteristics of the cognitive architecture" (Matthews, 1999). These predispositions can naturally make you more skilled in certain areas. For example, an extrovert is more naturally talented at handling social situations than an introvert. On the other hand, personality traits can also foster the development of different skills. If placed in an environment that fits their personality, individuals will strive,

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[7] Relatively few studies investigate auditors' personality traits. As audit professionals are hard to access, prior research predominantly examines staff accountants or accounting students. Earlier studies (e.g., Kovar, Ott, & Fisher, 2003; Schloemer & Schloemer, 1997; Wheeler, 2001) use the Myers-Brigg-Type-Indicator to assess personality types and generally find little variation in personality traits among accounting students. Kovar et al. (2003) further find that personality traits are not predictive of performance on exams. More recent studies investigate a single personality trait, like narcissism (e.g.,Cameran, Lyu, & Perotti, 2022; T.-K. Chou, Pittman, & Zhuang, 2021; Kerckhofs, Vandenhaute, & Hardies, 2022), the Dark Triad (Hobson, Stern, & Zimbelman, 2020), or leadership ability (Dong, Kallunki, Nilsson, & Vanstraelen, 2023) but do not provide a comprehensive picture of auditors' personalities.

and more quickly develop traits that fit their personal disposition, as they will be more intrinsically motivated. For example, a highly conscientious individual will strive in an environment that requires consistent and organized effort. More agreeable individuals, in turn, will be able to develop their skills better in an environment that provides opportunities for cooperation.

I consider the indirect link to occur through the distinct skills required in auditing. For instance, an auditor's job includes a significant commercial component: Auditors should attract new business and maintain good client relations, while at the same time leading negotiations with the client during the audit (e.g., adjustments for misstatements). As this part of the job is characterized by a large degree of interaction, extraversion could be an important predictor of the skills needed to excel in this commercial task. Further, the auditor's job has an extensive technical component. Auditors need to possess detailed knowledge of accounting and auditing standards, be professionally skeptical, diligent and thorough. For the technical component, auditors scoring high on conscientiousness, i.e., being thorough, persistent and hard-working, might be beneficial. Furthermore, the majority of the work of an auditor will be conducted as part of a team. Hence, more senior auditors need leadership skills to manage and supervise a team, mentor less experienced team members, as well as deal with conflicts within the team. For this component of the job, traits like agreeableness and emotional stability are potentially important.

This discussion suggests that different personality traits may affect the distinct skills an auditor needs to ultimately perform well. Thus, to gain a comprehensive understanding of how personality might relate to an auditor's performance, I first examine the relationship between personality and different skills. To do this, I pose the following broad research question:

RQ1: *How do personality traits relate to the different skills of an auditor?*

Next, I turn to the relationship between personality and job performance. In line with the above argument, we consider how personality relates to performance both directly and indirectly through the development of skills that are related to job performance. Stated formally, the second research question is:

RQ2: *How do personality traits relate to an auditor's job performance, both (a) directly and (b) indirectly through skills?*

Figure 1 provides a conceptual framework that summarizes the different relationships that I examine in this study.
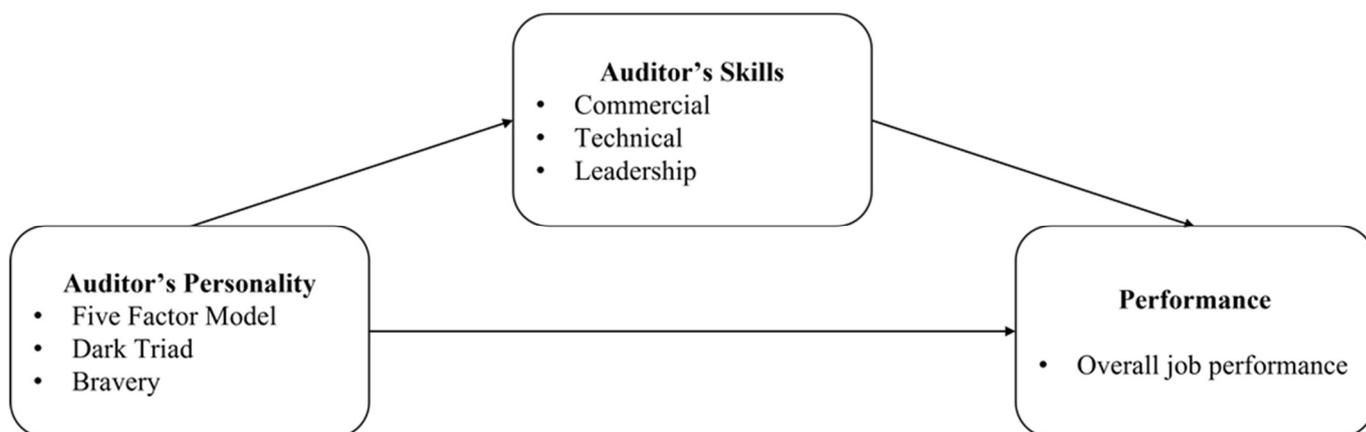
Figure 2: Conceptual Framework

2.3 Data Collection and Sample

I obtain data from ten audit firms in the Netherlands (the Big 4 and 6 medium-sized audit firms) through the Foundation for Auditing Research (FAR).[8] I use two data sources: I collect

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[8] The survey and data collection are part of a bigger project under the 2019E01 FAR grant, which is joint work with Jere Francis (project lead), Murray Barrick, Olof Bik and Ann Vanstraelen. In total, we collected data from three surveys, each complemented with internal firm data. All surveys have been approved by the corresponding Institutional Review Boards prior to administering the surveys.

data measuring auditor's personality traits and skills via a survey, and complement the survey with internal firm data on the evaluation of overall job performance. Survey data are appropriate to study these research questions as it provides a direct measure of personality traits, which is impossible using archival data (Van der Stede, Young, & Chen, 2005).[9]

Prior studies on individual auditors focus mainly on audit partners, even though audit teams are effectively led by two key figures: a signing partner and an engagement manager. The engagement manager is typically more directly involved in the day-to-day activities while the partner assumes a more supervisory role and bears the ultimate responsibility to sign the audit opinion. Thus, I am interested in personality and job performance of partners and managers, so the population of interest is all auditors acting as signing auditors (i.e., equity partners and directors) and engagement managers (i.e., managers and senior managers).

In order to obtain a representative sample from this pool, I rely on participating audit firms' internal meeting structures (e.g., audit technical trainings, summer schools, or partner-director meetings) and hand out a paper-pencil survey at these meetings. This non-probability sampling approach was chosen because the target audience (i.e., higher level auditors) is generally hard to reach. Using the internal meetings along with the official endorsement of the audit firms' leadership ensures a high participation in the survey. This approach reduces potential non-response bias, a common threat to validity in survey studies.

To safeguard anonymity while simultaneously allowing me to match survey responses to internal firm data, the audit firms shared a list of pre-registered attendants with an independent datacenter (CentERdata). CentERdata created unique IDs for each respondent and shared this ID via e-mail on the day of the survey distribution. Respondents were asked to fill in their ID on the front page of the survey. In total, the research team attended 28 internal firm meetings

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[9] I am aware of recent developments that use machine learning and big data to measure personality traits (e.g., Bleidorn & Hopwood, 2019). However, given the limited publicly available personal data on individual auditors, this approach seems not feasible when studying auditors' personality profiles.

between May 2019 and April 2020, resulting in the collection of 2,163 paper-pencil surveys. In case of non-attendance, an online invitation to the survey was sent out, resulting in 152 additional surveys.[10] The paper-pencil surveys were digitized by four research assistants, who were all blind to the purpose of the study. A total of 100 paper-pencil surveys were double coded to assess the error rate of manually digitizing the paper-pencil surveys. The double-coding revealed in total 65 differences, which is equivalent to an error rate of 0.40% (= 65 differences/ (163 Questions * 100 Surveys)). Manual inspection of the errors revealed no systematic patterns, i.e., they were randomly distributed across all surveys and research assistants. Overall, the final sample for this study consists of 1,608 surveys, excluding empty and incomplete surveys, surveys from senior audit staff (who attended some of the meetings), and responses that showed evidence of insufficient attention/effort.[11]

Table 1 provides an overview of the sample composition. The sample represents highly experienced auditors with an average professional experience of 16.1 years. The percentage (number) of responses by rank is 16.85% (271) for partners, 16.54% (266) for directors, 28.48% (458) for senior managers, and 38.12% (613) for managers. In total, 84% (1,351) responses are from Big 4 firms and 26.3% (423) of all respondents identify as female.

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[10] This only applies to three out of the ten audit firms.
[11] To detect insufficient effort responses, the responses to the demographic questions were scanned for non-sense responses (e.g., Nationality: Human; Office Location: Planet Earth). In addition, I used the reverse-scored survey items to look for possible straight-lining. This analysis resulted in five responses being dropped. As respondents filled out a paper-pencil version of the survey, I do not have a measure of how much (or little) time each individual took to complete the survey.

Table 1: Descriptive Statistics Sample

	Partner n = 271		Director n = 266		Senior Manager n = 458		Manager n = 613		Overall n = 1,608	
	Mean (Median)	SD	Mean (Median)	SD	Mean (Median)	SD	Mean (Median)	SD	Mean (Median)	SD
Age	48.1 (48.0)	5.70	44.3 (43.0)	6.96	39.4 (37.0)	7.78	31.9 (31.0)	4.78	38.8 (37.0)	8.8
Female	0.118		0.233		0.266		0.338		0.263	
Function Tenure	9.96 (9.0)	7.13	4.68 (3.0)	4.99	4.84 (3.0)	6.46	1.91 (1.0)	2.33	4.56 (2.0)	5.84
Firm Tenure	20.4 (21)	9.11	16.0 (16.0)	9.39	12.8 (11.2)	9.17	6.42 (6.0)	4.48	12.2 (10.0)	9.31
Professional Experience	25.5 (25.0)	5.81	21.4 (20.0)	7.34	16.8 (14.0)	7.94	8.96 (8.0)	4.11	16.1 (14.0)	8.83

Survey Instrument

The survey measured key constructs related to an auditor's personality, skill set, and demographic factors. Appendix A includes an overview of all constructs and survey items. All questions were asked on a 5-point Likert scale. If a construct consists of multiple items, I report Cronbach's alphas and factor loadings, and the final score is the average of all items in the construct.

I rely on previously validated instruments to measure an auditor's personality: The five factor personality trait model is assessed with 65 items from the Personal Characteristics Inventory (PCI; Mount, Barrick, Laffitte, & Callans, 1999). Prior studies demonstrate the PCI's convergent validity and divergent validity with other FFM measures (Mount et al., 1999). To assess the *Dark Triad*, I rely on the 12-question scale of Jonason and Webster (2010). *Bravery* is measured using the seven-item scale from Peterson and Seligman (2004). The order of all personality items was randomized to reduce bias and survey fatigue. In addition to using previously validated scales, I conduct reliability and factor analyses for all constructs.[12] Cronbach alphas are generally all above the threshold of 0.7 (Taber, 2018), and eigenvalues exceed one (see Appendix A).

As the skills required to perform the job of an auditor are unique to the profession, a new measurement scale was developed. The scale is built around the set of skills the Big 4 audit firms use to describe the expected competencies of their partners and managers.[13] The

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[12] All personality scales include several reverse-scored items. Reversed items are commonly used to avoid response bias, however, psychometric research demonstrates that these questions are often harder to answer and do not measure the same underlying construct as non-reversed items (Netemeyer, Bearden, & Sharma, 2003). Seven reversed items were excluded from the final scales, as these items showed extremely low factor loadings and reduced the reliability of the construct.

[13] All Big 4 firms employ internal competency mapping frameworks that detail the different capabilities the firms desire in their employees and that are needed to succeed in the organization. To illustrate, the framework of one of the Big 4 firms (name excluded for confidentiality purposes) includes four dimensions and is used when hiring, rewarding and promoting individuals. The capabilities described by the firm can be broadly classified as (1) technical and professional capabilities to deliver quality and value, (2) business acumen to innovate and create value for the firm, (3) leading others and being a mentor, and (4) delivering client service excellence and building sustained client relationships. The other Big 4 firms use similar frameworks that serve as the underlying guide in developing out scale.

developed scale initially included four dimensions (three questions each): Competencies related to (1) the firm, (2) managing client relationships, (3) managing an audit team, and (4) delivering audit quality. Participants were asked to self-assess their skills across these four competencies, using a scale from 1 = Needs Improvement to 5 = Outstanding.[14] The scale validation (using exploratory factor analysis) on the collected responses reveals three instead of four distinct factors (i.e., factors with an eigenvalue exceeding one).[15] The two factors intended to capture representing the firm and managing client relationships are highly correlated and the individual items loaded on one factor instead of two. Thus, I combine these two factors into one for the analysis in the paper. Based on the content of the questions, I refer to these three factors as *Commercial*, *Technical,* and *Leadership* skills*.* The *Commercial* skills factor (α = 0.65, EV = 1.97) captures capabilities related to acquiring business, building a client-portfolio and representing the firm to clients and in public. The *Technical* skills factor (α = 0.66, EV = 1.79) relates to the actual job of the auditor and the technical requirements to deliver a high-quality audit. The *Leadership* skills factor (α = 0.69, EV = 1.87) relates to leadership, teamwork and coaching capabilities. Appendix A provides an overview of the individual items.

Internal Firm Data

Internal audit firm data complement the survey data. In particular, we use the audit firms' data to construct the dependent variable of interest, overall job performance*,* and to obtain demographic data used as controls. Combining these two data sources has two key methodological advantages over pure survey data: 1) Using an external performance

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[14] In another survey of the 2019E01 project, audit engagement team members were asked to assess the skills of their partner/manager. Hence, for a subsample of respondents (n = 233) I have self-assessed and team-assessed skills (requiring at least three observers for a consistent rating).

[15] I conducted a number of analyses to confirm the existence of three instead factors: The team-assessed ratings similarly revealed three instead of four factors and this was further confirmed by running the factor analysis on subsamples split by function level. For each subsample, the analysis revealed three consistent factors.

assessment is more objective than using a self-assessed survey measure of performance; 2) Using a different data source for the dependent variable circumvents common method bias, which is a potential threat to quality in survey research.

The dependent variable is the firm's internal assessment of *Overall Performance*. The overall performance assessment is conducted annually and is performed by an assessment committee, also referred to as calibration committee. The committee, which typically consists of higher-ranked auditors, reviews the individual's performance ratings on all engagements, potentially adjusts them and derives an overall performance measure. This measure is thus reflective of the individual's performance across engagements. While the committees take multiple criteria into consideration, a key performance evaluation criterion is the delivered quality on the engagements (Bik, Bouwens, Knechel, & Zou, 2022).

Performance data is available for seven out of ten participating audit firms, which reduces the sample size to 1,369 for all analyses using performance data. Each firm has its own rating scale to assess their employees' overall performance. This firm-specific scale further differs per function level, so it is not comparable per se (e.g., for one Big 4 firm, partners are rated on a scale from 1 to 3, whereas managers and senior managers are rated on a scale from 1 to 5).[16] Therefore, I standardize the score by function level and audit firm to arrive at a comparable score. That is, for each function level-firm combination the mean is equal to zero and the standard deviation equals one. The audit firms also provide data on several demographic variables, *Age, Female (Gender),* and *Function Tenure,* which I include as control variables when estimating the different relationships depicted in Figure 1. Appendix B lists all variable definitions.

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[16] The scales typically include qualitative descriptions too. For the 3-point scales the descriptions are 1 = below norm, 2 = meets the norm/expectation, 3 = above norm.

2.4 Descriptive Statistics

Table 2 presents the descriptive statistics and correlations for the variables of interest. The statistics provide a first indication that variation in auditors' personality traits exists despite being a specialized profession. Compared to a representative sample (n = 5,021) of the Dutch population, auditors are significantly more homogenous, measured by significantly lower variation in the majority of the FFM traits.[17] In addition, it is noteworthy that auditors score, on average, significantly higher on four of five dimensions of the FFM: Auditors are more agreeable, conscientious, extroverted, and open to experiences than the general Dutch population.[18] Comparing the Dutch auditors to US executives (Colbert, Barrick, & Bradley, 2014), specifically CEOs and other top management team members, shows that executives score even higher on all FFM traits, except agreeableness, indicating that executives have even larger values for the personality traits than auditors.

The correlations in Table 2, see next page, also provide some initial evidence that personality traits are related to the different skills and overall job performance.

As evidence on auditors' personality traits is scarce, I provide detailed descriptive statistics to obtain a more comprehensive picture of auditors' personality profiles. Specifically, I consider differences in personality traits and skills along two main dimensions: Big 4 vs. non-Big 4 firms, and across different function levels. These comparisons can help to understand which personality traits are prevalent in different types of audit firms, as well as whether certain traits become more pronounced as auditors move up the career ladder in an audit firm.

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[17] I obtain the data for this comparison from the Longitudinal Internet studies for the Social Sciences (LISS) panel from CentERdata. Based on a probability sample drawn from the population register by Statistics Netherlands, CentERdata collects data on a number of measures, among which are the Big 5 Personality traits. I use the annual survey from 2019 for this comparison.

[18] Mean comparison is done using an independent two sample t-test, assuming unequal variances.

Table 2: Descriptive Statistics

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11
	Overall													
1	Performance	0.00	0.97	**1.00**										
2	Commercial	3.23	0.62	**0.11**	**1.00**									
3	Technical	3.70	0.55	**0.13**	**0.23**	**1.00**								
4	Leadership	3.66	0.59	**0.10**	**0.36**	**0.31**	**1.00**							
5	Agreeableness	3.97	0.40	0.01	**0.14**	-0.02	**0.43**	**1.00**						
6	Conscientiousness	3.84	0.37	**0.12**	0.04	**0.29**	**0.10**	**0.21**	**1.00**					
7	Emotional Stability	3.46	0.52	0.05	**0.15**	0.05	**0.09**	**0.09**	**-0.10**	**1.00**				
8	Extraversion	3.53	0.51	**0.18**	**0.40**	**0.22**	**0.29**	**0.20**	**0.36**	0.05	**1.00**			
9	Openess	3.60	0.51	**0.08**	**0.27**	**0.15**	**0.26**	**0.33**	0.080	**0.21**	**0.45**	**1.00**		
10	Dark Triad	2.43	0.46	0.03	**0.20**	0.01	-0.02	**-0.26**	-0.07	**-0.18**	**0.30**	0.00	**1.00**	
11	Bravery	3.58	0.49	**0.07**	**0.24**	**0.15**	**0.22**	**0.18**	**0.18**	**0.20**	**0.37**	**0.34**	**-0.10**	**1.00**
12	Age	38.8	8.8	0.01	**0.2**	-0.01	-0.03	-0.06	**-0.12**	**0.15**	-0.05	0.02	**-0.08**	**0.13**

This table presents the Pearson correlation coefficients. Significant correlations ($p < 0.01$) in **bold.**

Table 3: Differences in Personality Traits & Skills

Panel A: Comparison Non-Big 4 vs. Big 4

	Non- Big 4 n = 257		Big 4 n = 1,351		Difference
	Mean	SD	Mean	SD	p-value
Personality Traits					
Agreeableness	3.83	0.44	4.00	0.39	<0.001***
Conscientiousness	3.74	0.37	3.86	0.37	<0.001***
Emotional Stability	3.47	0.50	3.46	0.52	0.735
Extraversion	3.43	0.48	3.55	0.52	<0.001***
Openness	3.53	0.50	3.61	0.51	0.029**
Dark Triad	2.55	0.54	2.41	0.44	<0.001***
Bravery	3.57	0.48	3.58	0.49	0.743
Skills					
Commercial	3.33	0.62	3.21	0.61	0.006***
Technical	3.62	0.56	3.71	0.55	0.012**
Leadership	3.49	0.59	3.69	0.58	<0.001***

Panel B: Comparison across Function Levels

	A Partner n = 271		B Director n = 266		C Senior Manager n = 458	
	Mean	SD	Mean	SD	Mean	SD
Personality						
Agreeableness	4.00^{C}	0.40	3.97	0.37	$3.92^{A,D}$	0.43
Conscientiousness	3.80	0.37	3.83	0.36	3.85	0.36
Emotional Stability	$3.59^{C,D}$	0.46	3.53^{D}	0.47	$3.48^{A,D}$	0.49
Extraversion	$3.67^{C,D}$	0.45	3.59^{D}	0.44	3.50^{A}	0.49
Openness	$3.72^{C,D}$	0.44	3.62	0.49	3.55^{A}	0.53
Dark Triad	2.40	0.45	2.43	0.43	2.44	0.45
Bravery	$3.74^{B,C,D}$	0.43	$3.64^{A,D}$	0.43	$3.57^{A,D}$	0.46
Skills						
Commercial	$3.63^{B,C,D}$	0.53	$3.35^{A,C,D}$	0.52	$3.19^{A,B,D}$	0.56
Technical	3.71^{D}	0.56	3.74^{D}	0.49	3.77^{D}	0.57
Leadership	$3.80^{C,D}$	0.53	$3.73^{C,D}$	0.56	$3.61^{A,B}$	0.57

I compare the Big 4 and non-Big 4 firms because prior literature documents differences in audit outcomes between these firms, and anecdotally they also attract different types of people. Indeed, Table 3, Panel A reveals differences in personality traits between Big 4 and non-Big 4 auditors. Auditors at Big 4 firms are, on average, more agreeable (4.00 vs. 3.83, $p < 0.01$), conscientious (3.86 vs. 3.74, $p < 0.01$), extroverted (3.55 vs. 3.43, $p < 0.01$), open to experiences (3.61 vs. 3.53, $p < 0.05$) and score lower on the Dark Triad (2.41 vs. 2.55, $p < 0.01$) than their non-Big 4 counterparts. Big 4 auditors assess themselves higher on their *technical* skills (3.71 vs. 3.62, $p < 0.05$) and *leadership* skills (3.69 vs. 3.49, $p < 0.01$), while non-Big 4 auditors assess themselves higher on *commercial* skills (3.33 vs. 3.21, $p < 0.01$). The differences in the skill assessment combined with a higher score on *Conscientiousness* (i.e., being more diligent and thorough) could be a potential reason why Big 4 firms are associated with higher quality audits (the so-called "Big N effect", as documented by a large body of literature, e.g., Francis, Maydew, and Sparks (1999).[19] An untabulated comparison within the Big 4 firms reveals that these firms are more homogenous, as indicated by almost no significant differences in personality traits and skills. A possible explanation for this could be that the Big 4 firms as a group recruit from a common pool of applicants.

Table 3, Panel B compares the four different function levels. Given the up-or-out promotion system commonly used in audit firms, this comparison highlights whether certain personality traits and skills become more pronounced in the higher ranks. In accordance with such a promotion system, I note that the distributions become significantly more narrowly distributed around the mean at the top of the hierarchy, as demonstrated by a Levene's test of equality of variances. This implies that audit partners are more homogenous than the lower level professionals. This selection effect is strongest for *Extraversion, Openness to Experience* and

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[19] The majority of studies that provide evidence on the existence of this Big N effect investigate the US audit market. However, there is also empirical evidence from the Dutch audit market that suggests that Big 4 audit firms similarly provide higher quality audits in the Netherlands (Blay, Notbohm, Schelleman, & Valencia, 2014), which is also in line with the findings from the Dutch inspection body AFM.

Bravery, suggesting that these are potentially three important characteristics for becoming a partner. The mean comparisons further reinforce this observation. The results indicate that the higher you climb the career ladder, the more the personality traits will tend to favor the relationship aspect in an auditor-client relationship (i.e., higher values of *Extraversion* and *Openness*). This pattern corresponds to Downar, Ernstberger, and Koch (2020), who show that an auditor's economic capital (i.e., revenue-generating ability and winning a large public client) and social capital (i.e., connectedness within the audit firm, as well as participation in formal and informal networking activities) will increase the likelihood of making partner at a Big 4 audit firm. *Extraversion* and *Openness to Experience* are two personality traits that are potentially beneficial for an auditor's economic and social capital.

Similarly, partners score highest for *Bravery* (3.74 vs. 3.50 for Managers), i.e., they speak up for their beliefs and do not hesitate to express an unpopular opinion. This trait could be beneficial when negotiating with clients during the audit process. Audit partners further exhibit the highest level of *Emotional Stability*. This is in line with findings in the OB literature documenting that being emotionally stable is positively associated with leadership ability (Hogan, Curphy, & Hogan, 1994).

Looking at the self-assessed skills, it seems intuitive that skills increase in rank. Indeed, partners and directors score highest on *Commercial* and *Leadership* skills. However, there is no significant difference in *Technical* skills between partners, directors, and senior managers, only between managers and the higher ranks. This is in accordance with all auditors having achieved their professional competencies by the time they reach the senior manager level. Therefore, moving from senior manager to a higher function level seems driven by *Commercial* and *Leadership* skills. *Commercial* ability also seems to differentiate partners from directors. This corresponds with the view that in order to become partner one needs to be a salesperson too, while directors are often viewed as technical experts.

I repeat the comparisons across function levels separately for Big 4 and non-Big 4 firms to understand whether different personality profiles are more pronounced at the top of these firms (untabulated). This analysis generally reveals similar patterns as discussed above, with one noteworthy difference. While audit partners at the Big 4 firms score lowest on the *Dark Triad* compared to all other ranks, partners at non-Big 4 firms score highest on this trait.[20]

In summary, the descriptive statistics reveal significant differences in personality traits and skills across auditors. I conclude there is variation in auditors' personality traits, although the variation becomes smaller and certain traits (*Extraversion*, *Openness to Experience*, and *Bravery*) become more pronounced as auditors move from manager to partner.

2.5 Multivariate Analysis

Research Question 1 – Personality and Skills

I now investigate whether the documented differences in personality matter in terms of job performance. I first test whether personality traits are associated with the three job skills (RQ1). To do so, I estimate three OLS regression models using each of the three skills (*Commercial, Technical,* and *Leadership)* as dependent variables. I regress each skill factor on all previously mentioned personality traits. I include several demographic control variables that prior literature has shown are associated with different audit outcomes.[21] *Female* is an indicator equal to one if the respondent is female. *Age* captures the respondent's age in years. Given the documented differences between Big 4 and non-Big 4 firms, and across the different function

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[20] This could be another reason why Big 4 and non-Big 4 firms provide differential levels of audit quality. Audit partners are instrumental in setting a quality-oriented tone at the top, which may be influenced by their Dark Triad personality traits.

[21] Prior literature also shows associations between audit outcomes and an auditor's education and experience. I did not include the auditor's education in analysis, as there is very little variation in the data. Almost 95% of all respondents are certified auditors, given that these are highly experienced auditors. I do not have more detailed data on their education. I do not include their professional experience in my regressions because this variable is highly correlated with age.

levels, I also control for *Big 4* and *Function Level* in all regressions. Table 4 presents the

regression results for RQ1.

Table 4: Regression Results for Auditors' Skills

	Dependent Variable Skills		
	Commercial (1)	Technical (2)	Leadership (3)
Intercept	0.791***	2.341***	1.191***
	(0.037)	(0.036)	(0.036)
Agreeableness	0.206***	-0.190***	0.574***
	(0.039)	(0.036)	(0.036)
Conscientiousness	-0.081**	0.405***	-0.089**
	(0.039)	(0.039)	(0.038)
Emotional Stability	0.057**	0.005	-0.006
	(0.028)	(0.027)	(0.027)
Extraversion	0.313***	0.070***	0.154***
	(0.035)	(0.034)	(0.034)
Openness to Experience	0.072**	0.130***	0.038
	(0.031)	(0.033)	(0.033)
Dark Triad	0.188***	-0.048	0.031
	(0.034)	(0.033)	(0.033)
Bravery	0.083***	0.048	0.100***
	(0.030)	(0.030)	(0.029)
Controls			
Female	-0.185***	-0.139***	-0.126***
	(0.033)	(0.032)	(0.032)
Age	0.001	-0.006***	-0.011***
	(0.002)	(0.002)	(0.002)
Big 4	-0.086**	0.080**	0.106***
	(0.037)	(0.036)	(0.036)
Function Level	Yes	Yes	Yes
Observations	1,608	1,608	1,608
Adj. R2	0.296	0.144	0.261
F-Statistic (df = 13; 1,594)	53.026***	21.874***	44.634***

This table presents the results of OLS regressions of the different (self-assessed) skills, regressed on personality traits, controlling for demographic characteristics, Big 4 and function level.
Standard errors are reported in parentheses below the coefficients, ***, **, and * indicate significance at 1%, 5% and 10% level (two-tailed), respectively.

The results indicate that various personality traits are associated with each of the three (self-assessed) skills. For the *Commercial* factor (Table 4, Colum 1), *Extraversion* (0.313, p < 0.01) and *Agreeableness* (0.206, p < 0.01) are the strongest predictors. The positive associations are in line with the OB literature documenting that extroverted and more agreeable people are generally more sociable and talkative, which is beneficial for interactions with others. Surprisingly, *Dark Triad* (0.188, p < 0.01) is also positively associated with commercial skills. Even though the *Dark Triad* generally captures malevolent characteristics, prior research shows that individuals who exhibit these traits, also embody many desirable characteristics like charm, assertiveness, and impression management skills (Jonason, Slomski, & Partyka, 2012). This side of the *Dark Triad* may be useful for commercial skills. Other positive predictors are *Bravery* (0.083, p < 0.01) and *Emotional Stability* (0.057, p < 0.05)*. In contrast, *Conscientiousness* (-0.081, p < 0.05) is negatively associated with commercial skills. Witt, Burke, Barrick, and Mount (2002) provide evidence that highly conscientious individuals are often ineffective in tasks involving interaction, as they might lack interpersonal sensitivity.

Column 2 presents the results for the *Technical* skills factor. *Conscientiousness* (0.405, p < 0.01) exhibits the strongest positive relationship with *Technical.* This seems intuitive because the tasks of assessing the reliability and validity of the client's financial statements involves a lot of detailed work. Hence, being more thorough and diligent is beneficial. In contrast to the *Commercial* skills, *Agreeableness* (-0.190, p < 0.01) is negatively associated with *Technical* skills. *Openness to Experience* (0.130, p < 0.01) has a positive relationship with *Technical* skills. Individuals who score higher on *Openness to Experience* are open-mined and demonstrate a high willingness to learn (Barrick & Mount, 1991). Given the continuous on-the-job learning in the auditing profession, the positive relationship suggests that *Openness to Experience* is beneficial in learning and developing technical skills. *Extraversion* (0.07, p < 0.01) is also positive and significant, but smaller in magnitude than the other personality traits.

The results for the third skills factor, *Leadership,* are presented in Column 3. *Agreeableness* (0.574, p < 0.01) has the strongest positive association. This is in line with prior research documenting *Agreeableness* as an important predictor for job performance criteria involving coaching and mentoring others (Barrick & Mount, 1991), which is part of the *Leadership* factor. Similarly, *Extraversion* is positive and significant (0.154, p < 0.01), which confirms that this trait is beneficial when social interactions are involved. Similarly, *Bravery* is positive and significant (0.10, p < 0.01), while *Conscientiousness* (-0.089, p < 0.01) is negative and significant. This negative relation might indicate that in order to thrive in a cooperative task, highly conscientious individuals also need interpersonal sensitivity (Witt et al., 2002).

Looking at all three columns, personality traits explain more of the variance of the *commercial* (Adj. R^2 = 0.296) and *leadership* (Adj. R^2 = 0.261) skills than of the *technical* skills factor (Adj. R^2 = 0.144). A possible explanation is that technical capabilities are easier to develop through education and training, and hence less influenced by one's personality. The coefficient for *Female* is negative and significant in all three regressions, indicating a lower level of self-assessed skills across the three dimensions.[22]

In summary, the analysis provides evidence that auditors' personality traits are associated with job skills of auditors. However, both *Agreeableness* and *Conscientiousness* show contradicting results in the individual regressions: While *Agreeableness* is positively related to skills involving interaction (*Commercial* and *Leadership* skills), it is negatively associated with *Technical skills.* The opposite is the case for *Conscientiousness.* It remains to be seen how these contradictory relationships will play out in the full model predicting overall job performance.

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[22] In another survey of the same FAR project, audit engagement team members were asked to assess the skills of their partner/manager. Hence, for a subsample of respondents (n = 233) I also have team-assessed skills (requiring at least three observers for a consistent rating). When using the team-assessed skills I generally obtain similar results, except for gender. The negative effect of gender disappears when using the team-assessed skills rather than the self-assessed skills. This is in line with prior research that demonstrates the existence of gender differences in self-confidence (Barber & Odean, 2001).

Research Question 2 – Personality and Performance

Turning to the analysis on the relationship between personality and performance. I explore how personality is associated with job performance, both directly and indirectly through skills (see Figure 1). To do so, I follow the steps of a traditional mediation model (Baron & Kenny, 1986). That is, I initially test the direct relationship between personality and job performance without including the intervening variables. Next, I estimate the relationship between the three mediating variables and performance. Lastly, the full model is estimated as shown in Figure 1, which includes the personality traits, as well as the different skills as possible intervening variables. The full model is estimated using a path model (SEM) with bootstrapping (Hayes, 2009), and allows me to disaggregate the total effect of personality on job performance into direct and indirect effects. All models include the same controls as before.

Table 5 presents the OLS regression results for the set-up models. The results reveal that *Extraversion* (0.294, $p < 0.01$) has the strongest direct relationship with performance. Although the stereotypical image of an accountant might not include extraversion, it is intuitive that extraversion is beneficial to the job performance of experienced auditors. All audits are conducted within an engagement team and auditors are typically part of multiple fluid teams. Hence, their job is characterized by a large degree of interaction, both within the team but also with the client. Being outgoing and sociable thus leads to a higher performance. *Conscientiousness* (0.137, $p < 0.1$) and *Emotional Stability* 0.096, $p < 0.1$) show a marginally significant and positive relationship with performance. This result is in line with prior evidence in the OB literature that documents that these two traits are associated with performance in virtually all jobs (Barrick & Mount, 1991; Barrick et al., 2001). *Agreeableness* (-0.145, $p < 0.05$) is negatively related to overall performance. A potential reason for this could be that in order to perform well as a manger or partner, one needs to be comfortable with speaking up and managing conflicts with the client during negotiations about misstatements.

Table 5: Regression Results for Overall Performance

	Dependent Variable Overall Performance	
	(1)	(2)
Intercept	-0.673	-0.593**
	(0.483)	(0.251)
Agreeableness	-0.145**	
	(0.072)	
Conscientiousness	0.137*	
	(0.077)	
Emotional Stability	0.096*	
	(0.054)	
Extraversion	0.294***	
	(0.068)	
Openness to Experience	-0.009	
	(0.061)	
Dark Triad	-0.098	
	(0.067)	
Bravery	0.027	
	(0.058)	
Commercial		0.153***
		(0.048)
Technical		0.164***
		(0.050)
Leadership		0.016
		(0.049)
Controls		
Female	0.004	0.020
	(0.063)	(0.059)
Age	-0.034***	-0.036***
	(0.003)	(0.003)
Big 4	-0.105	-0.067
	(0.088)	(0.087)
Function Level	Yes	Yes
Observations	1,369	1,369
Adj. R2	0.075	0.067
	9.496***	11.979***
F-Statistic	(df = 13; 1,355)	(df = 9; 1,359)

This table presents the results of OLS regressions of overall performance (assessed by the firms) on the personality traits and skills. Standard errors are reported in parentheses below the coefficients, ***, **, and * indicate significance at 1%, 5%, and 10% level (two-tailed), respectively.

Highly agreeable individuals might not be comfortable with this, as they usually seek out harmony. The coefficients on the variables for *Openness to Experience, Dark Triad*, and *Bravery* are insignificant, indicating no direct relationship with performance for these traits.

Table 5, Column 2 includes the results for the relationship between overall performance, and the three different skills. *Commercial* (0.153, p < 0.01) and *Technical* skills (0.164, p < 0.01) are both positive and significant predictors of performance. However, *Leadership* is insignificant, which is surprising given that audit firms explicitly list leadership skills as part of their internal competency frameworks they also use in order to evaluate performance.[23] The results in this model suggest that the focus in the performance evaluation system is predominantly on *Commercial* and *Technical* skills.

These two regressions serve as a preliminary analysis to set up the complete model estimated using path modeling. The results are visually depicted in Figure 3. Table 6 shows the standardized regression weights (Panel A), as well as the direct, indirect, and total effects on job performance (Panel B), based on bootstrapping.

Similar to the previous results, the full model in Table 6 reveals that only *Commercial* (0.073, p < 0.05) and *Technical* (0.056, p < 0.10) skills are positively associated with performance assessment. The results further highlight that *Extraversion* is the strongest predictor of performance, and it affects performance both directly (0.134, p < 0.01) and indirectly (0.021, p < 0.01) through *Commercial* skills. This is in line with the rationale discussed above: the auditor's job involves a significant degree of interaction, especially at the manager and partner level. While the relationship between *Extraversion* and the different skills and performance is consistently positive, other traits exhibit more conflicting relationships:

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[23] As I show in section VI, leadership skills do matter for the performance evaluation of partners.
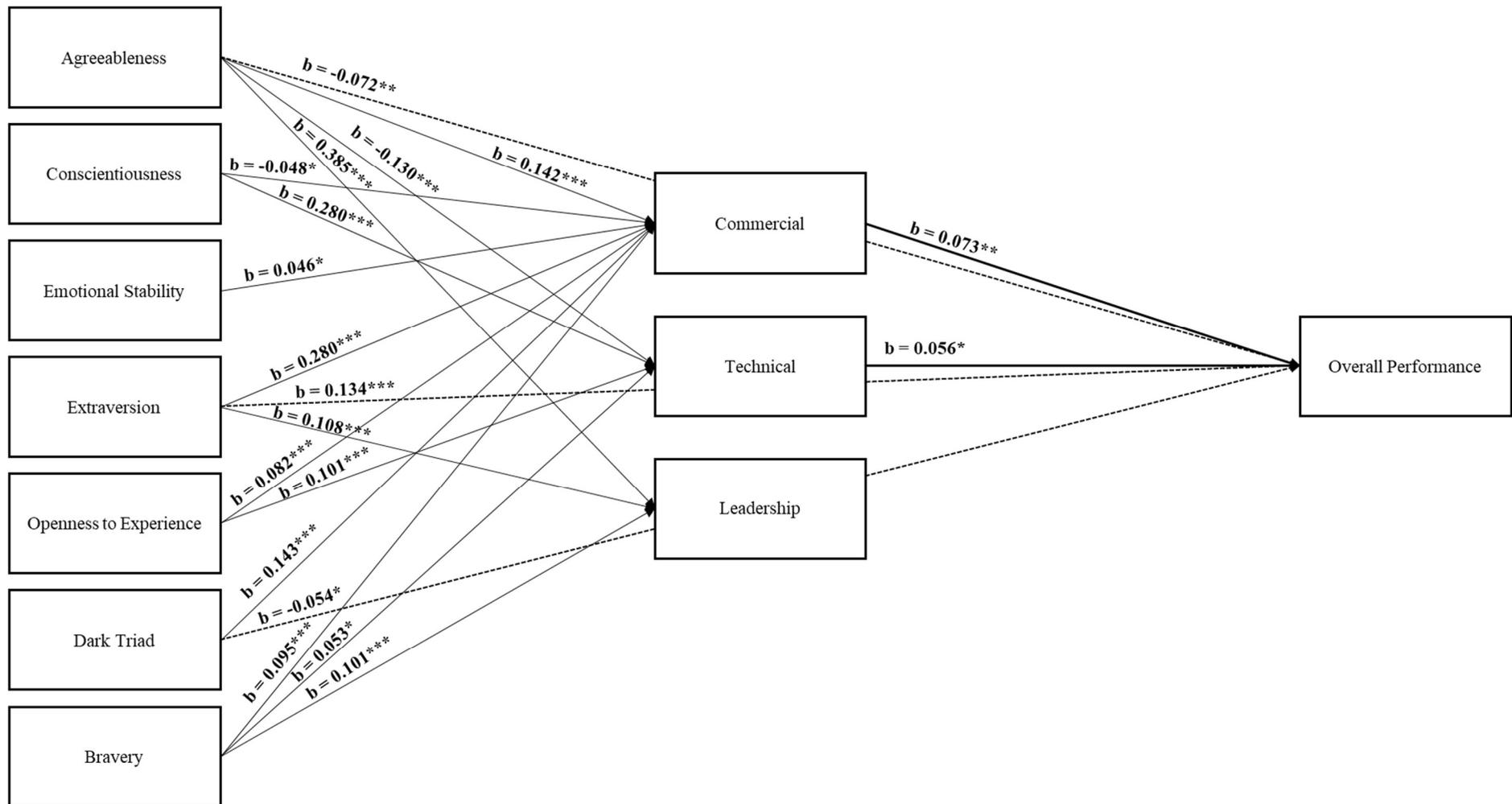
Figure 3: Visual Representation of full path model (the figure is a simplied version of the model, it only includes the main variables of interest and the (marginally) significant relationships).

Table 6

	Path			
	(1)	(2)	(3)	(4)
	Commercial	Technical	Leadership	Performance
Personality Traits				
Agreeableness	0.142***	-0.130***	0.385***	-0.072**
Conscientiousness	-0.048*	0.28***	-0.043	0.042
Emotional Stability	0.046*	0.017	0.01	0.047
Extraversion	0.216***	0.055	0.108***	0.134***
Openness to Experience	0.082***	0.101***	0.033	-0.017
Dark Triad	0.143***	-0.040	0.008	-0.054*
Bravery	0.095***	0.053*	0.101***	0.002
Skills				
Commercial				0.073**
Technical				0.056*
Leadership				0.022
Controls	*Yes*	*Yes*	*Yes*	*Yes*

The coefficients in this table are the standardized regression weights in the full SEM Model. Commercial, Technical, and Leadership Skills are positioned as mediating variables. ***, **, and * indicate significance at 1%, 5% and 10% level (two-tailed), respectively.

Panel B: Direct, Indirect and Total Effects of Personality on Performance

	Dependent Variable Overall Performance		
	Direct Effect	Indirect Effect	Total Effect
Personality			
Agreeableness	-0.072**	0.012	-0.060
Conscientiousness	0.042	0.011	0.053*
Emotional Stability	0.047	0.004	0.052*
Extraversion	0.134***	0.021***	0.155***
Openness to Experience	-0.017	0.012**	-0.005
Dark Triad	-0.054*	0.008	-0.046
Bravery	0.002	0.012***	0.014
Skills			
Commercial	0.073**		0.073**
Technical	0.056*		0.056*
Team	0.022		0.022

While *Agreeableness* is positively associated with *Commercial* (0.142, p < 0.01) and *Leadership* skills (0.385, p < 0.01), it is strongly negatively associated with *Technical* skills (-0.13, p < 0.01) and overall performance (-0.072, p < 0.05). These opposing results suggest that for skills involving interaction, *Agreeableness* is indeed beneficial, but it is harmful for technical parts and overall performance. A possible explanation, as mentioned above, is that a need for harmony might result in auditors being less comfortable with more "tough" conversations that are part of the auditor's job at the manager and partner level. Additional analyses are needed to understand these opposing associations.

Similarly, the *Dark Triad* is positively associated with *Commercial* skills (0.143, p < 0.01), but has a marginally direct negative relationship with overall job performance (-0.054, p < 0.1). This finding suggests that even though high *Dark Triad* individuals might be able to use their charm and manipulation to have higher *Commercial* skills, the malevolent traits of the *Dark Triad* ultimately is negatively associated with the performance assessment. *Conscientiousness*, in turn, is a significant positive predictor of *Technical* skills (0.28, p < 0.01) and also has a total

positive relationship with performance (0.053, p < 0.1), but has a marginal negative association with *Commercial* skills (-0.048, p < 0.1). Taken together, these conflicting relationships seemingly mirror the tension that generally exists between the technical and commercial aspects of auditing: For the commercial aspect, a personality that is more outgoing, not so careful and even has some dark elements seems to be beneficial, while the technical component benefits from an individual who is more careful and diligent, and less agreeable.

The other traits, *Emotional Stability*, *Openness to Experience*, and *Bravery,* are each positively associated with one or more skills, but have no direct relationship with overall performance. In particular, *Bravery* is positively associated with each of the three skills, and thus has a significant indirect effect on performance. This suggests that being willing to speak up, even when facing opposition, is beneficial for the skills and ultimately performance, but is not directly rewarded in the performance evaluation system.

Collectively, my findings provide evidence that personality characteristics predict the job performance of audit partners and managers, either directly or indirectly through skills.

2.6 Additional Analyses
Differences Across Function Levels

The descriptives in Section IV document significant differences in personality traits and skills across function levels. The extent to which each skill plays a role in the day-to-day work likely changes over the career of an auditor. This implies that different personality traits might be more or less important for performance and success at different stages in an auditor's career. Therefore, we use a multi-group SEM analysis to assess whether the relationship between personality and performance varies across function levels. In particular, I compare audit partners to all other function levels. I chose this comparison because the audit partners in this study are all equity partners, whereas the directors and (senior) managers are employees of the

audit firm. Thus, the tasks and responsibilities of audit partners, as owners of the firm, differ significantly from the other function levels. Table 7 provides a summary of the differences in the multi-group analysis.[24]

Table 7: Multigroup Analysis - Partner vs. Rest

Path	Standardized Regression Weights Coefficients		Chi Square
	Partner	Rest	
Conscientiousness → Commercial	0.071	-0.059**	3.196*
Extraversion → Commercial	0.103*	0.271***	3.821*
Openness to Experience → Commercial	0.208***	0.067**	3.344*
Bravery → Technical	0.164**	0.035	3.346*
Agreeableness → Leadership	0.529***	0.363***	2.802*
Agreeableness → Performance	-0.232***	-0.06*	3.270*
Emotional Stability → Performance	-0.091	0.081**	4.889**
Commercial → Performance	-0.061	0.104***	3.817*
Leadership → Performance	0.227***	0.005	6.454**

The analysis reveals two key differences. First, audit partners are rewarded for their *Leadership* skills (0.227, $p < 0.01$), but not for their *Commercial* skills (-0.061, $p > 0.1$). A possible explanation for this finding is that to become partner the individuals are required to demonstrate their commercial competencies. Thus, all equity partners will have a sufficiently high and similar level of *Commercial* skills, Second, the negative direct relationship between *Agreeableness* and *Performance* is significantly stronger for audit partners (-0.232, $p < 0.01$ vs. -0.06, $p < 0.1$). Similarly, the positive relationship between *Agreeableness* and *Leadership* skills is also greater for partners (0.529, $p < 0.01$ vs. 0.363, $p < 0.01$). This indicates that even though being agreeable is beneficial for leadership skills (which are rewarded for partners), the negative direct effect of *Agreeableness* remains.

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[24] For brevity, I only tabulate the (marginal) significant differences.

In addition, the results confirm that *Bravery* is an important trait for audit partners' *Technical* skills (0.164, p < 0.01). As the partner is ultimately in charge of the engagement, she will lead the discussions with client management about the most complex and material items. Thus, it seems intuitive that one's natural disposition to be willing to face opposition is beneficial for audit partners. In combination with the descriptive statistics in Table 4, this analysis provides additional evidence that personality traits differ across function levels, as does the relationship between personality traits and performance.

Personality Traits – Facets

The previous results in Tables 4 – 7 analyze the personality traits of the FFM, the Dark Triad, and Bravery. However, each of the traits in the FFM consist of multiple specific and unique aspects, referred to as facets (Costa & McCrae, 1995). In the next analysis, I break down the overarching traits of the FFM into different facets.[25,26] This allows me to gain a more granular understanding of which aspect of the trait drives the previously documented relationship with performance. Table 8 reports these results using SEM.

[Insert Table 8]

I capture two facets of *Agreeableness*, referred to as *Cooperation* and *Altruism*. *Cooperation* captures the extent to which an individual values cooperation and seeks close relationships with others, whereas *Altruism* represents "the tendency towards selflessness, interpersonal motivation and concern for others (Costa Jr, McCrae, & Dye, 1991). The analysis reveals that the documented negative direct relationship with performance is driven by the *Altruism* facet (-0.113, p < 0.01). This supports my argument that being focused on the well-

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[25] Including all possible facets of each trait was not possible as the time to complete the survey had to between 20 and 30 minutes. Thus, we included facets that prior research has investigated in relation to workplace behavior.
[26] We only use the facets that have a sufficiently highly reliability (Cronbach's alpha > 0.7). This means that I will not use the facets of Emotional Stability and Openness to Experience. The Dark Triad generally also consists of three dimensions (hence triad), but the reliability analysis suggests to not use the dimensions individually.

being of others and striving for harmony might be counterproductive in an audit setting, even though both facets are positively associated with *Commercial* and *Leadership* skills.

Next, I measure two distinct facets of *Conscientiousness*: *Dependability* and *Achievement Striving*. Dependability captures the part of conscientiousness linked to being organized, controlled, and detail-oriented whereas individuals striving for achievement are working tirelessly to get things done. Similar to the main analysis, the effect of *Dependability* and *Achievement* on job performance is fully mediated by *Technical Skills*. Both facets predict *Technical Skills*, but the effect of *Dependability* is larger in magnitude (0.195, $p < 0.01$ vs. 0.114, $p < 0.01$). This suggests that both facets are beneficial for developing this ability, but given that the work of an auditor is by nature detail-oriented, people's inherent tendency to be thorough is even more advantageous.

Moving to *Extraversion*, I consider two facets, which I refer to as *Ambition* and *Leaderlike*. *Ambition* captures an individual's desire to get ahead of others. *Leaderlike* refers to social boldness, i.e., the extent to which an individual enjoys being outgoing and leading others. Both facets are positively related to *Commercial skills*. Intuitively, *Leadership skills* is predicted by one's inclination to be a leader, as captured by *Leaderlike*. The main analysis documents a direct positive relationship between *Extraversion* and performance, which is driven by the *Leaderlike* (0.150, $p < 0.01$) component of *Extraversion* rather than by the desire to get ahead (0.031, $p > 0.1$).

Overall, the analysis of the facets provides a more granular exploration of the relationship between personality and performance by highlighting which unique aspects of personality traits influence performance.

2.6 Discussion and Conclusion

Using a proprietary dataset with over 1,600 experienced auditors in the Netherlands (partners and managers), I examine whether and how auditors' personality traits are associated with individual job performance, both directly and indirectly through their effects on job skills. The analyses reveal that even though auditing is a niche profession and auditors are more homogenous than the general Dutch population, significant variation exists in the innate personal characteristics of auditors. These differences are important, as they are associated with self-assessed job skills and the firm's overall job performance evaluation. The job performance measure includes engagement-level audit quality of partners and managers as part of the assessment criteria, and thus a higher job performance assessment should be indicative of higher quality audit outcomes.

The findings are relevant for the auditing profession and have implications for the audit firms' human resource management practices, including hiring, training, and performance evaluation systems. The results of the path model suggest that the tension between the commercial and technical side of auditing is reflected in the personality traits that are beneficial for each of the skills. While *Agreeableness* and the *Dark Triad* are associated with higher commercial skills, they have a negative relationship with technical skills and/or job performance. *Conscientiousness*, in turn, positively affects technical skills, but has the opposite effect on commercial skills. Technical skills it seems are benefited by being less outgoing and careful, while commercial skills are benefited by cheerfulness, being not so careful, and having a dark side. Despite the inherent tension and seeming incompatibility, both skills are needed for sustained success in the audit firms. Effectively managing this tension is a challenge for audit firms and could potentially be achieved by hiring auditors with more diverse profiles or through more targeted job training. For example, the negative effect of *Agreeableness* is driven by an individual's altruistic orientation, i.e., the caring for others' well-being and need for

harmony. To counteract possible negative effects of being too agreeable, the audit firms can consider more targeted training in how to raise problems and handle conflicts, which could help highly agreeable individuals to be more comfortable with interactions that risk the harmony in a team.

The analyses further highlight differences in personality profiles across audit firms and function levels. A key finding is that auditors become increasingly homogenous in the higher function levels, which suggests the existence of 'typical' characteristics desired in an audit partner. This finding should alarm the audit firms who are actively trying to increase diversity across function levels. They consider diversity to be more than gender equality and actively promote diversity in a number of attributes.[27] Yet, the results provide audit firms with empirical evidence that, on average, they promote similar individuals. As the findings are descriptive of "what is" rather than "what should be" important in the assessments, it is possible that the current systems overvalue certain traits, such as *Extraversion*. It is the single-most dominant personality trait across all analyses. An extrovert's tendency to stand out in a crowd might bias assessments, resulting in a lack of diversity in personality traits among higher function levels. Hence, if diversity in personality profiles among partners is truly desired, the firms may need to re-evaluate their performance evaluation systems.

A multi-group analysis reveals that leadership skills are only taken into consideration for audit partners but not the other function levels. As auditors are already involved in leadership roles at the manager level, it seems problematic that the firms only include this factor in their performance evaluation at the partner level. With the current evaluation system, the firms do not incentivize the development of leadership ability prior to becoming partner. This further

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[27] For example, "Together also means inclusive. Innovative thinkers, critical thinkers with different opinions: we recognize the importance of a greater diversity of colleagues in all respects" (PwC, 2021)

implies that the firms may overlook candidates with good leadership skills. This is in line with Dong et al. (2023) finding that younger auditors' leadership ability is not well-compensated.

Taken together, this study deepens our understanding of the role of auditors' personality traits. Hence, it directly contributes to the growing literature on the role of individual auditor characteristics. Unlike other studies on auditor characteristics, this study directly measures the key variable of interest rather than relying on a proxy for publicly available data sources. The sample further includes multiple function levels and can therefore produce a more comprehensive picture of the role of personality in the auditing profession. I document which personality traits seem important for becoming partner and further document how the relationship between personality traits and performance differs across function levels.

Finally, I recognize the limitations of this study. I focus on individual performance as the dependent variable. Even though the audit firms explicitly recognize and reward the ability to deliver a high-quality audit in their performance assessment, I do not test whether the performance assessment is indeed indicative of engagement-level audit quality. Further, I cannot conclude with certainty that the performance assessments of the audit firms are without any bias, although performance assessments are conducted by assessment committees and not by one individual supervisor. Prior research on the use of these committees (e.g., Grabner, Künneke, & Moers, 2020) provides evidence that calibration committees reduce performance evaluation bias, which should alleviate some concerns about a lack of objectivity. In addition, I use performance data from seven different audit firms, and it is unlikely that all of their performance evaluation systems are biased in a similar way.

This study only studies associations, so I do not make claims of causality. I document which traits are associated with the self-assessed skills and firm-assessed performance. Thus, these results only document what traits are currently associated with performance, not which ones *should* be. Yet, the insights can help the audit firms to identify any potential biases in their

assessments. As previously mentioned, they might not be aware that they are promoting a certain personality profile in the individuals who become partner.

Finally, I only consider personality traits at the individual level. However, an audit engagement is ultimately conducted by an entire team. I cannot speak to how different personality profiles work together in a team, and how diversity in personality traits influences team performance and audit quality. This is an important avenue for future research.

Appendices Chapter 2

Appendix A: Survey Items

Five Factor Model
All FFM personality questions from PCI (Mount, Barrick, Laffitte, & Callans, 1999). The final score is the average of all items as listed below.

Conscientiousness (Cronbach's alpha: 0.84 , EV: 5.16)	Factor Loadings
I am very thorough in any work I do.	0.56
I like order and keep things tidy.	0.41
I demand perfection in others.	0.52
I want every detail taken care of.	0.53
I want everything to be "just right".	0.28
I set high standards of quality for myself and others.	0.67
I want to be dependable and reliable.	0.30
I like to continue until everything is perfect.	0.62
I try to be decisive and consistent.	0.36
I always want things to proceed according to plan.	0.45
I demand quality and perfection from myself and others.	0.63
I finish what I start.	0.48
I set high standards of performance for others and myself.	0.64
I value hard work and am results-oriented.	0.56
I get energized when I get a lot accomplished at work.	0.45
I am a very persistent person.	0.36
I like to do the best I can, even if it requires a lot of extra effort.	0.58
I can always by counted on to get the job done.	0.51
I push myself very hard to succeed.	0.56
It bothers me when I do not complete my work on time.	0.45

Extraversion (Cronbach's alpha: 0.79 , EV: 3.43)	Factor Loadings
I have a strong desire to get ahead.	0.64
I like to compete and get ahead of others.	0.7
I like to earn bonuses and incentives and get ahead of others.	0.6
I want to be seen as the best at what I do.	0.59
I expect to compete and seek to stand out at work.	0.69
I am a "take charge" type of person.	0.52
I like to seek and maintain the role of a leader in a group.	0.68
I have a natural talent of influencing people.	0.5
I enjoy leading and influencing others at work.	0.59

Agreeableness (Cronbach's alpha: 0.81 , EV: 3.98)	Factor Loadings
I like to develop cooperative, collaborative relationships at work.	0.66
Others see me as a teamplayer, one who is committed to the team.	0.6
I tend to seek close relationships with others.	0.59
I value cooperation over competition.	0.49
I am good at cooperating and collaborating with others.	0.67
I really like being able to collaborate with others.	0.64
I like the opportunity to mentor and help others.	0.6
I am the kind of person who goes out of my way to help others.	0.49
I am good at understanding the feelings of others.	0.59
I believe in helping others who are down on their luck.	0.51
I like to show my gratitude.	0.51
I am generally seen by others as being quite cheerful.	0.5

Emotional Stability (Cronbach's alpha: 0.73 , EV: 2.97)	Factor Loadings
I worry about being embarrassed. (r)	0.38
I do not worry about things that have already happened.	0.5
I keep my emotions under control.	0.72
I often worry about things that turn out to be unimportant. (r)	0.65
Others have described me as very steady emotionally.	0.65
I have frequent mood swings. (r)	0.68
I experience my emotions intensely. (r)	0.65
I am not easily annoyed.	0.45
I adjust easily.	0.33

Openess to Experience (Cronbach's alpha: 0.74, EV: 3.11)	Factor Loadings
I prefer change to the traditional way of doing things.	0.6
I prefer variety to routine.	0.63
I like to visit new places and try new things.	0.61
I like to experiment with new and different ways of doing things.	0.81
I enjoy discussing books and movies with others.	0.22
I like working with difficult concepts and ideas.	0.61
I like to think up new ideas and solve problems.	0.73
People tend to think of me as a very creative and inventive person.	0.62

Dark Triad (Cronbach's alpha: 0.73, EV: 3.23)

Jonason, P. K., & Webster, G. D. (2010). The Dirty Dozen: A Concise Measure of the Dark Triad.

Psychological Assessment, 22(2), 420–432.	Factor Loadings
I tend to lack remorse. *(Psychopathy)*	0.48
I tend to be insensitive to the feelings of others. *(Psychopathy)*	0.46
I tend to not be too concerned with morality or the morality of my actions. *(Psychopathy)*	0.59
I tend to be cynical. *(Psychopathy)*	0.29
I want others to admire me. *(Narcissism)*	0.36
I like it when others pay attention to me. *(Narcissism)*	0.25
I seek prestige or status. *(Narcissism)*	0.49
I expect special favors from others. *(Narcissism)*	0.65
I tend to use deceit or have lied to get my way. *(Machiaveillanism)*	0.67
I tend to manipulate others to get my way. *(Machiaveillanism)*	0.66
I have used flattery to get my way. *(Machiaveillanism)*	0.38
I tend to exploit others towards my own end. *(Machiaveillanism)*	0.68

Bravery (Cronbach's alpha: 0.70, EV: 2.52)

Peterson, C., & Seligman, M. E. P. (2004). Character strengths and virtues: A handbook and classification.

Oxford University Press.	Factor Loadings
I have taken frequent stands in the face of strong criticism.	0.44
I don't hesitate to express an unpopular opinion.	0.7
I speak up in protest when I hear someone make an incorrect statement.	0.6
I often avoid dealing with awkward situations. (r)	0.61
I often do not stand up for my beliefs. (r)	0.57
I don't freely speak my mind when there might be negative results. (r)	0.6
I am a brave person who stands up for what I believe	0.65

Skills (Self-Assessed)

Respondents were asked to self-assess their skills in different audit-related areas. The questions are self-developed and based on participating audit firm's competency frameworks.

Commercial (Cronbach's alpha: 0.65, EV: 1.97)	Factor Loadings
I establish and maintain relevant networks/markets and acquire future sales and business.	0.78
I contribute to organizational image, represent the firm to clients and in the public debate, participate in community and social affairs.	0.65
I manage client relationships and build a portfolio.	0.74
I provide exceptional client services and impact.	0.62

Technical (Cronbach's alpha: 0.66 , EV: 1.79)	Factor Loadings
I am proficient at technical requirements, know what it takes to do the job, have recognized expertise.	0.8
I effectively manage compliance and risks to the firm.	0.73
I understand processes linked to audit engagement effectiveness, and am able to deliver a high-quality audit.	0.79

Leadership (Cronbach's alpha: 0.69, EV: 1.87)	Factor Loadings
I place an emphasis on visible leadership and building high performance teamwork.	0.72
I enhance employee motivation, satisfaction, and inclusiveness, and manage performance feedback	0.85
I develop and coach subordinates, and increase retention.	0.79

Appendix B: Descriptions of Main Variables

Variable	Description
Personality (Scale 1 - 5)	
Agreeableness	
Conscientiousness	
Emotional Stability	Measure of Big Five Personality Traits (Personal Characteristics Inventory, Mount et al. 1991); measured as the mean score of answers to the underlying items.
Extraversion	
Openness to Experience	
Dark Triad	Measure of Dark Triad (Jonason & Webster, 2012); measured as the mean score of answers to the underlying items.
Bravery	Measure of how willing one is to accomplish goals in the face of opposition, either external or internal (Peterson & Seligman, 2004); measured as the mean score of answers to the underlying items.
Skills (Scale 1 -5)	
Commercial	Skill factor capturing the auditor's capability to establish, maintain networks, generate revenue, manage client relationships, and build a portfolio, represent the audit firm.
Technical	Skill factor capturing the auditor's capability to provide high quality audit services, manage risks and compliance, and being technical proficient.
Leadership	Skill factor capturing the auditor's capability to manage a team, increase motivation and job satisfaction, mentor, and coach subordinates.
Dependent Variable	
Overall Performance	Overall performance score, based on the firm's internal performance data. The score is standardized per rank within the same firm.
Demographic Variables	
Age	Age in years, retrieved from the audit firm data (where available; otherwise taken from the survey).
Big 4	Indicator variable equal to one if the auditor is from one of the Big 4 audit firms.
Female	Indicator variable equal to one if the auditor is female.
Firm Tenure	# of years since the auditor works for his current audit firm.
Function Tenure	# of years since when the respondent works in his/her current function level

Function Level	Auditor's current function level: Audit partner (<u>only</u> equity partners), director (at some firms also referred to as salary partner), senior manager and manager.
Professional Experience	# of Years since when the respondent works in the auditing profession

Chapter 3 : Audit Partner – Manager Dyadic Fit and Team Functioning

Abstract[28][29]

 This paper investigates the formation of audit partner-manager dyads and the consequences of this formation on the functioning of the engagement team. Prior literature mainly focuses on the role of one leader alone, while in practice, an audit team is usually led by two key figures. This dual-leadership structure and its potential effect on the team are largely unexplored. We draw on the theory of homophily develop predictions, and test them using data from 221 engagement teams and their leaders. The analyses suggest that partners and managers that form a dyad are more similar in terms of their skills and leadership behavior than other random matches based on the available pool of auditors. However, the similarity is not always beneficial for the functioning of the engagement team: Only when the partner and manager are both highly skilled and demonstrate strong leadership does the similarity result in a better functioning team. Otherwise, a complementary match is associated with better team dynamics. The findings on the role of partner-manager dyads in guiding an engagement team can inform audit firms on how to better compose and manage their audit teams.

JEL Classification: M40; M42

Keywords: Audit Teams; Leadership; Team Dynamics; Audit Partner

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3.1 Introduction

This paper examines how different audit partner-manager combinations, or dyads, influence the functioning of an audit engagement team. Standard-setters emphasize the leadership responsibilities for managing and achieving quality on the audit engagement, which includes direction and supervision of the members of the engagement team, and review of their work (e.g., ISA 220, PCAOB AS 1201). While the engagement partner takes overall responsibility for the audit engagement quality and signs the audit opinion, we know from practice that it is the "subteam" of partners and managers that form the audit team leadership (e.g., Cameran, Ditillo, & Pettinicchio, 2018). This dual leadership structure is the focus of this study. Prior research on audit engagement teams mainly focuses on the role of one leader alone and identifies different conditions that improve team functioning, including audit team composition (e.g., Hossain, Yazawa, & Monroe, 2017; Cameran et al. 2018), and team climate (e.g., Gissel & Johnstone, 2017; Gold, Gronewold, & Salterio, 2014). However, the dual leadership structure and its potential effect on the dynamics of the audit engagement team and team performance are largely unexplored. We contribute to the literature by investigating the formation of audit partner-manager dyads and the consequences of this formation on the functioning of the engagement team.

We use the theory of homophily from the sociology literature to inform our predictions. Homophily describes an individual's natural tendency to associate with similar others (McPherson, Smith-Lovin, & Cook, 2001), and evidence of this pattern has been documented in all types of relationships, ranging from marital relations and close friendships to work relationships and other loose connections (Ertug, Brennecke, Kovács, & Zou, 2022; McPherson et al., 2001). Following homophily theory, we expect that audit partner-manager dyads are more likely formed among individuals with similar skills (technical and commercial) and leadership behaviors, while controlling for similarity in demographic factors. We focus on

leadership, technical and commercial skills because these are described by audit firms as key competencies of their partners and managers.

To test our predictions, we collect data via two consecutive surveys from the ten largest audit firms in the Netherlands, including the Big 4. In one survey, team members (n = 2,336) assess the skills and leadership behavior of the partner and manager. In the second survey (n = 1,287), the team members self-assess the functioning of the engagement team.

For our first analysis, examining the dyad formation, we create a sample of all partner-manager dyads that *could* have occurred ex ante. We then model the *actual dyads* as a function of the dyad members' similarity in skills and leadership behavior. Consistent with the theory of homophily, the results of this model suggest that the formed audit partner-manager dyads are more similar in terms of their skills and leadership behavior than the random pairs composed from the available pool. Interestingly, this pattern holds both for dyads with managers self-selected by the partner (68%) and for dyads with managers centrally assigned to the partner (32%).

Next, we examine how the dyadic fit influences the functioning of the team. Dual-leadership structures require coordination and cooperation between the two leaders to manage the team effectively. Similarity can facilitate cooperation by increasing communication (Reagans, 2005) and trust (Ahlf, Horak, Klein, & Yoon, 2019) and establishing a shared understanding (Downar, Ernstberger, & Koch, 2021) between the members of the dyad. This suggests that dyad similarity might positively influence the team. However, similarity can also result in biased decision-making (e.g., Ertug et al., 2022; Janis, 2008). In line with attribute substitution theory (Tversky & Kahneman, 1974), dyad members could rely too heavily on their (perceived) similarity rather than on their underlying abilities. In addition, while increased similarity can improve the communication between the dyad members, it might not automatically translate into a better functioning team if the leaders do not know how to

communicate with other team members. Thus, the direction of the relationship between the dyadic fit and team functioning is not clear ex ante. We find that similarity is not always beneficial for the functioning of the engagement team. It is only when the partner and manager are both highly skilled and demonstrate strong leadership that the similarity results in better audit team performance and audit team dynamics (psychological safety, team commitment, team identity). The analysis also indicates that a strong manager (partner) can compensate a weak partner (manager). The compensation effect is most pronounced for strong managers compensating for weak partners, which suggests that managers play a central role in dyadic performance and the functioning of the team.

In an additional analysis, we explore whether one dyad member influences the functioning of the team more strongly. The results highlight that it is not one leader alone but both the partner and manager who influence the team jointly. While the partner seems to matter more for psychological safety and team identity, the manager's influence is largest for team commitment and team performance. These findings further underscore the relevance of considering the dual-leadership structure.

Collectively, our results contribute to the growing literature on the functioning of audit teams and are relevant to audit practice. We provide novel insights on the role of audit partner-manager dyads who jointly lead the audit team. To date, prior literature has primarily focused on the role of one leader alone, which left the specifics of the dual-leadership structure in an audit largely unexplored. Our work addresses this gap. A related study by Downar et al. (2021) uses a German setting to study the dyad relation between a lead engagement auditor and a concurring review auditor. Our study is different for two main reasons. First, we focus on the dyad that is most central to the engagement team and where both dyad members supervise the engagement team. In contrast, a concurring auditor is tasked with reviewing the work of lead auditors and is not typically involved in any supervision of the team. Second, we extend the

findings by Downar et al. (2021) by considering how similarity in skills and leadership behavior, rather than demographic factors alone, affects the formation of a dyad.

Our findings have major implications for how audit firms manage their audit teams and, specifically, the composition of the partner-manager dyad. Audit partners are often given the choice of which manager they want to work with (in our sample, in 68 percent of the cases). Understanding the consequences of that choice is important to the audit firm's goal of achieving consistent outcomes across engagements. Our study informs audit firms with insights on how different dyad combinations can enhance the functioning of the team, which can ultimately improve both audit effectiveness and efficiency.

The remainder of the paper is organized as follows. Section 2 reviews prior literature and develops the hypotheses. Section 3 details the sample and data collection process. Section 4 presents our research design and results for the first hypothesis, and Section 5 presents the research design and results for the second hypothesis. Section 6 includes an additional analysis, and Section 7 discusses the implications of our findings.

3.2 Background and Hypotheses Development

Background

A financial statement audit is conducted by an engagement team. Audit teams are hierarchical and fluid in nature, and a 'typical' audit team consists of an audit partner, engagement manager, and audit staff (e.g., assistant managers, senior associates, junior staff). To achieve the goal of completing a high-quality audit, it is important that the audit team functions well together and is supervised properly. The auditing standards (e.g., PCAOB AS 10 and ISA 220) also recognize the role of the engagement team and the significance of proper supervision.

Prior studies that investigate audit teams are mostly experiments, both lab and field experiments (e.g., Dennis & Johnstone, 2018; Gissel & Johnstone, 2017; Jiambalvo & Pratt, 1982; Kadous, Proell, Rich, & Zhou, 2019; Nelson et al., 2016; Proell, Zhou, & Nelson, 2022). These studies focus on identifying different conditions under which team communication, members' voice behavior, and ultimately team performance and audit quality improves.

An initial key input for the functioning of any team is the team's composition (Morgeson et al., 2010). Hossain, Yazawa, and Monroe (2017) and Cameran, Ditillo, and Pettinicchio (2018) examine how an audit team's composition affects audit outcomes, such as audit fees, audit efficiency, and audit quality. The two studies also find that audit quality is associated with the diversity in audit teams, measured as the mix of work assigned to different function levels. Cameran et al. (2018) further consider the proportion of female auditors within a team and find that audit quality and efficiency increase with the proportion of female auditors.

Following the team formation, the team moves into an action phase in which the actual audit work is performed. As staff auditors collect most of the audit evidence, it is important that they work in an audit team in which they feel safe to speak, raise issues (Gissel & Johnstone, 2017; Nelson et al., 2016), and make mistakes (Gold, Gronewold, & Salterio, 2014). Several studies focus on the role of the team leader in ensuring such a team climate. For example, Nelson et al. (2016) provide evidence that a leader's team orientation, i.e., the degree to which the leader "emphasizes collective group identity and team accomplishment rather than individual identity and accomplishment" (Nelson et al., 2016, p. 1785), positively affects junior auditor's willingness to raise audit issues. In line with this finding. Gissel and Johnstone (2017) show that when the audit partner's communication emphasizes psychological safety, audit team members are more willing to share private information, resulting in a higher quality fraud brainstorming session.

Overall, prior research establishes that the audit team is important for achieving high quality, and the studies emphasize that team leaders play a key role in ensuring the functioning of a team, including establishing a safe team environment. These studies focus on the relationship between individual leaders and team members, such as the relationship between the partner and the team or between the senior in charge and the team. However, we know from practice that an audit engagement team is usually led by two key figures: the lead engagement partner and an engagement manager. While the partner has the ultimate responsibility for the engagement and supervision of the team, she normally delegates part of this responsibility to a (senior) manager. The manager is more involved in the day-to-day supervision of the team and is in regular contact with the partner.

The specifics of this dual-leader structure are largely unexplored. Thus, in order to get a more comprehensive picture of how an audit engagement team functions, we investigate the joint role of the audit partner and manager. As prior evidence on the partner-manager dyad is scant, we first examine the dyad formation: how are the audit partners and managers selected and matched? Then we investigate how this match influences the functioning of the audit team.

Hypotheses Development

Dyad Formation

To derive our predictions, we rely on sociology theory, specifically the theory of homophily (Lawrence & Shah, 2020; McPherson et al., 2001). Homophily, a term first introduced by Lazarsfeld and Merton (1954), describes individuals' natural tendency to associate with individuals who are similar to themselves. Homophily "structures the multiple social systems to which people belong" (Lawrence & Shah, 2020, p. 513). Prior research finds patterns of homophily in all types of relationships. That "birds of a feather flock together" is evident in the closest ties of marriage and friendship, in more distant relationships at work, and even in mere contact with others (McPherson et al., 2001). Psychology research provides evidence for

the cognitive processes underlying homophily by showing that attraction is affected by perceived similarity (Huston & Levinger, 1978). In addition, homophily arises due to simple factors such as geography, family ties, or organizational connections.

Researchers have demonstrated the existence of this phenomenon across a number of dimensions. Homophily manifests itself across sociodemographic factors like race, ethnicity, sex, or age (referred to as *status homophily* by Lazarsfeld and Merton (1954), but also across dimensions like behavior patterns, attitudes, skills, and aspirations (referred to as *value homophily* by Lazarsfeld and Merton (1954)). Prior studies that have investigated homophily in dyadic (i.e., two-person) relationships have, for example, looked at marriage (Kalmijn, 1998), friendship (Verbrugge, 1977), but also at dyadic relations within a professional context, such as the relationship between venture capitalist and entrepreneurs (Claes & Vissa, 2020; Gompers, Mukharlyamov, & Xuan, 2016), and different managers (Castilla, 2011). The studies all find patterns consistent with predictions based on homophily.

However, evidence on the audit partner-manager dyad formation is limited. One recent paper by Downar et al. (2021) combines interview evidence with publicly available data from Germany to study the dyad formation at the top of an engagement team. Their study focuses on the dyad of the lead auditor with a concurring (reviewing) auditor. Downar et al. (2021) find that the dyads are similar in terms of their gender and ethnicity, in line with the predictions based on homophily theory. While this study provides evidence of a dyad effect formation at partner review level, it does not examine the audit team leadership dyad. In contrast, we examine the dyad that is leading the engagement team, i.e., the lead partner and the engagement manager because this duo has the largest influence on the team. A concurring review partner only reviews the completed audit work at the end of the engagement and mostly interacts with the lead partner rather than the team.

Thus, we focus on the partners' and managers' skills and leadership behavior. These factors are more relevant to our setting than sociodemographic because psychology research provides evidence that skills and leadership are more predictive of behavior and thus have a larger potential effect on the team (e.g., Ajzen, 1991).

In line with homophily theory, we argue that audit partner-manager dyads are more likely to be formed among individuals who have a similar working style, as represented by their skills and leadership behavior. When given a choice, partners and managers will select themselves into a working relationship with similar others for ease of communication and other features that smooth the coordination of activity (McPherson et al., 2001). Hence, given the prevalence of homophily in all different types of relationships and the consistent patterns, we expect to observe homophily in the dyad formation. This leads us to formulate the following hypothesis.

H1: Audit partners and managers who form a dyad are, on average, more similar than partners and managers who do not form a dyad.

This hypothesis is not without tension. Even though anecdotal evidence suggests that partners have some freedom in selecting their engagement manager, the audit firms might either have constraints in place that limit the choice of engagement manager (e.g., availability, expertise, seniority) or assign a dyad based on some criteria (e.g., complementary abilities). The potential restrictions imposed by the audit firm would limit the impact of homophily and result in less similar dyads.

Dyadic Fit and Audit Team Functioning

The second research question examines if similarity of the dyad affects the functioning of the engagement team. On the one hand, homophily theory suggests, and prior empirical studies

provide evidence, that being similar results in affective closeness (Oelberger, 2019), interpersonal trust (Ahlf et al., 2019), and more frequent communication (Reagans, 2005). Being similar can further help to establish a mutual understanding (Downar et al., 2021). Taken together, these positive effects should facilitate the cooperation between the members of the dyad, which is needed in a dual-leader structure. In such a structure, it is important that both leaders communicate and coordinate their behavior to ensure that all team members are on the same page regarding team objectives. Following this argumentation, the similarity between the members of the dyad could have a positive influence on the functioning of the team.

On the other hand, similarity could negatively affect the dyad by strengthening biases (Ertug et al., 2022) or fostering groupthink (Janis, 2008). Specifically, when making decisions, dyad members might rely on the (perceived) similarity rather than the actual underlying ability of the dyad partner, a process referred to as attribute substitution (Tversky & Kahneman, 1974). Moreover, increased communication and affective closeness within the dyad might not automatically translate into a better functioning team if the leaders do not know how to communicate with other team members or if they lack general leadership abilities. Therefore, the direction of how dyadic similarity or fit influences the functioning of the team is not clear ex ante. Hence, we state our second hypothesis in non-directional form:

H2: *Audit partner-manager dyadic fit influences the functioning of the audit engagement team.*

3.3 Sample and Data Collection

Data Collection

Following the approval from our Institutional Review Board, we recruited survey participants from ten audit firms (the Big 4 and six medium-sized firms) via the Foundation for

Auditing Research in the Netherlands. To test our predictions, we require data about the partner-manager dyad and the functioning of the audit team. Therefore, we administered two separate surveys: in one survey, team members assessed the skills and leadership behavior of both the partner and manager on one engagement (hereinafter referred to as leader-survey), and the other survey focuses on team dynamics and functioning within the audit team on the same engagement (hereinafter referred to as team-survey).[30]

The sample for both surveys is based on a sampling process. We followed a systematic random sampling approach to ensure a representative sample. The starting point was a list of all engagement partners, and then after a random start, one-third of all partners were selected for participation in our study.[31] For the selected partners, the audit firms then selected two engagements that fulfill the sampling criteria of our study (min. 250 audit hours, variety of industries, smaller and larger clients, and a mix of PIE and private clients). The selection of engagements, including all team members, their positions, and hours spent on the client, was then shared with the research team (in anonymized form). This allowed us to identify the partner-manager dyad and the core team members who would participate in the surveys.[32] We categorize a team member as a core team member if they spent at least 20h on the engagement and if they were audit personnel rather than specialists or consultants. These criteria were put in place to ensure that team members can actually assess the dyad and team dynamics.

Following our selection, all team members (including partners and managers) received invitations to participate in the two online survey windows. Depending on the firm, participants

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[30] In addition to the survey data, the audit firms deliver internal audit firm data about all team members and engagements. As the data collection process is tedious and still ongoing, the data is currently not included in the analyses in this draft.

[31] In the European Union, all audit opinions are signed with the name of the individual who is ultimately in charge of the engagement. We refer to this individual as audit partner, but we include all function levels who are designated by the audit firm to legally sign the audit opinion; this includes equity partners, but also directors or salary partners. Similarly, "engagement manager" includes both senior managers and managers.

[32] In case multiple (senior) managers work on one engagement, we selected the manager most central to the team, i.e., the one who spent *most* hours on the engagement and/or was indicated by the audit firm as the responsible engagement manager.

had between three to six weeks to complete the survey, with one reminder sent after two weeks. In addition to the reminder, the leadership of the different audit firms introduced the survey to increase participation. The surveys were sent out on a rolling basis following the completion of the audit engagement to reduce the time window between the sign-off of the engagement and the completion of the survey to reduce potential recall bias.

In total, we collected 2,336 responses on the leader-survey for 661 unique leaders on 381 engagements. For the team-survey, we gathered 1,287 responses for 380 engagements.

Sample Construction

Based on the survey responses, we construct the sample for our study. The focus of the study is the partner-manager dyad. To have a meaningful assessment of the leader, we require at least three survey responses per leader. Thus, in order for a dyad to be included in this study, both partner and manager need to have at least three observer ratings. This reduces the sample from 381 engagements to 223 engagements. For our first analyses (see Section IV), we further require the office location for each leader, which is provided by the audit firm's internal data. As the data collection is currently still ongoing, the data is only available for seven out of ten firms, which further reduces the sample to 211 engagements with 199 unique dyads. Thus, 12 dyads work on two engagements. The dyads consist in total of 154 partners (mean = 6.14 raters) and 172 managers (mean = 4.57 raters). Table 1 presents the descriptive statistics for the individual leaders. Partners are, on average, 46.3 years old (SD = 6.13) with a mean firm tenure of 19.1 years (SD = 9.34), and 13.6 percent are female. The managers in our sample have an average age of 35.4 years (SD = 6.68), a mean firm tenure of 10.4 years (SD = 7.62), and 26.2 percent are female.

Table 1: Descriptive Statistics Sample

	Partner		Manager		Overall	
	n = 154		n = 172		n = 326	
	Mean	SD	Mean	SD	Mean	SD
Commercial Skills	3.48	0.370	3.27	0.447	3.37	0.425
Technical Skills	3.53	0.373	3.61	0.483	3.57	0.436
Leadership	3.54	0.378	3.75	0.407	3.65	0.407
Female	0.136		0.262		0.202	
Age	46.3	6.13	35.4	6.68	40.5	8.40
Firm Tenure	19.1	9.34	10.4	7.62	14.6	9.51
# of Ratings	6.14	2.44	4.57	1.78	5.31	2.25

Surveys

The leader-survey measured key constructs related to audit partners' and managers' skill set and their leadership behavior, and the team-survey featured different questions on the team dynamics and functioning of the engagement team. Appendix A includes an overview of all constructs and survey items. All questions were asked on a 5-point Likert scale. If a construct consists of multiple items, we report Cronbach's alpha as a measure of internal reliability.

Skills. We developed a new measurement scale to capture the unique skill set that is required to perform the job of an auditor.[33] The scale is based on the set of skills the Big 4 audit firms use to describe the competencies of their partners and managers (as part of their internal competency mapping). In this study, we focus on the commercial (Cronbach's alpha = 0.84) and technical skills (Cronbach's alpha = 0.81) of an auditor, as assessed by the team.

Leadership Behavior. To assess the leadership behavior of the partner and manager, we rely on previously established instruments from the team science literature. The key role of a team leader is to handle the numerous challenges that arise during the different phases of

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[33] The scale is validated and tested in a concurrent working paper by Pieper (2022). This paper examines how personality characteristics of auditors are associated with the different skills of auditors and the audit firm's assessment of their individual job performance.

teamwork and to satisfy the team's corresponding needs. Teamwork is "characterized by recurring cycles of mutually dependent interaction" (Morgeson et al., 2010, p.7) and these cycles can be divided into two distinct phases (Marks, Mathieu, & Zaccaro, 2001): transition and action. The transition phase includes planning and evaluation activities to foster goal attainment, whereas the action phases contains the actual work activities to accomplish the team's goal. The needs that arise in each phase are distinct and a good leader recognizes these needs, and implements different leadership behaviors in each phase.[34] We include six questions to capture a leader's transition behavior, and ten questions for action behavior. These questions are based on Morgeson et al. (2010). Cronbach's alpha is 0.91 for Action Behavior, and 0.87 for Transition Behavior. Correlation and factor analyses on our data, however, suggest that the two behaviors are highly correlated (r = 0.94) and one factor explains 95 percent of the variation. Thus, we combine the two leadership behaviors into one overall leadership factor. A higher score on this factor implies that the partner or manager implemented leadership behaviors more frequently (see Appendix A).

Psychological Safety. Given the importance speaking up and sharing information, especially by junior team members, psychological safety is an important aspect of the team climate (e.g., Gissel & Johnstone, 2017; Nelson et al., 2016; Proell et al., 2022). We use a six-question construct (Cronbach's alpha = 0.84) adapted from Edmondson (1999).

Team Commitment. A key antecedent of team performance is affective commitment to the team (Pearce & Herbik, 2004), which implies that team members are committed to a common goal and work towards this goal together. We use a five-item construct by Kirkman and Rosen (1999).

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[34] For example, during the transition phase, a team needs to set goals and establish a shared understanding within the team. Hence, a good leader will clarify team objectives, provide a clear vision, and set the tone.

Team Identity. In order to form a team, rather than being a simple work group, individuals need to identify with the team and share a feeling of pride when working in the team. We adapt a three-item construct (Cronbach's alpha = 0.69) by Kirkman and Rosen (1999).

Team Performance. We asked all team members to assess how well the audit engagement team performed overall. The self-reported measure is a five-item construct (Cronbach's alpha = 0.84) by Kirkman and Rosen (1999).

The final score for each leader and team is the average of all responses received. We require at least three ratings per leader and per team to have a reliable score.

3.4 Test of H1

Research Design H1

To show that the actual formed dyads are more similar than randomly matched dyads (H1), we follow an approach similar to prior studies (e.g., Downar et al., 2021; Francis, Golshan, & Hallman, 2022; Gompers et al., 2016). In particular, we create counterfactual dyads, i.e., the dyad matches that *could* have been formed ex ante but did not occur. To do so, we pair the actual audit partner with all available managers within an audit firm's *region*. Given the small geographic distances within the Netherlands, we observe that 41 percent of the dyads in our sample are not located in the same office but within the same geographic region. Hence, we consider all managers within a firm-specific region as possible matches for the engagement partner. The matching procedure results in 2,000 dyads, out of which 199 are *actual* dyads (i.e., actual engagement partner and manager) within our sample.[35]

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[35] We do not have a complete list with all the engagements each partner and manager works on. We have maximum two engagements per partner in our data set. Thus, it is possible that a partner works with a manager on a different engagement not included in our sample. That is, we would falsely classify an actual dyad as a counterfactual dyad. However, this only biases against us finding significant relations.

We estimate a probit regression model to test our prediction. The dependent variable, *Actual Dyad,* is equal to one for the actual partner-manager dyads and zero for the counterfactual dyads. The empirical model is specified as follows:

$$P(Actual\ Dyad) = \alpha + \beta_1 Similarity\ Commercial\ Skills +$$

$$\beta_2 Similarity\ Technical\ Skills + \beta_3 Similarity\ Leadership + \gamma Controls + \varepsilon \qquad (1)$$

The main variables of interest are the three similarity variables, which are captured by the absolute difference between the partner's and manager's scores on each dimension, and then multiplied by –1 to reflect a similarity score rather than the difference. Based on our first hypothesis, we expect the estimates of β_1, β_2, and β_3 to be positive and significant.

We include several control variables in our model: We include an indicator variable for whether the dyad members share the same gender to control for this source of homophily (Downar et al., 2021). We further control for the dyad being in the same office, as the descriptive statistics reveal that a majority is formed within an office (59 percent). We also include measures on the team's familiarity with the leader and control for potential firm-specific differences in matching practices. Appendix B includes all variable definitions.

The counterfactual analysis provides us with a first indication of who works together and whether audit partners and managers within a dyad are similar. However, a similar score could result either from both auditors scoring high on a specific dimension or low. In addition, the counterfactual analysis does not show whether a trade-off exists between dimensions. For example, a specific dyad might score similarly high on technical skills and similarly low on leadership behavior. Thus, to get a better understanding of the *overall* profiles of the dyad members, we implement a k-means clustering approach. This method takes all three dimensions into consideration simultaneously and aggregates individual data points together

because of similarities across all dimensions. We use this algorithm to categorize the profile of every partner and manager, and then we investigate whether dyads are formed within or across clusters. Following our first hypothesis, we expect that dyads are more likely formed *within* a cluster.

Results H1

An implicit assumption underlying our first hypothesis is that partners have some freedom in choosing their engagement partner. The descriptive statistics confirm this assumption for our sample. For 123 out of 211 teams, we know how the dyad was formed. In particular, the engagement partner selected the manager in 68% of all cases. The rest were assigned by the firm, either with or without consulting the partner. The descriptives in Table 2 give a first indication that the dyad members tend to be similar in terms of their technical (mean similarity = -0.404) and commercial skills (mean similarity = -0.387), as well as leadership behavior (mean similarity = -0.383).

Table 2: Descriptive Statistics - Dyads

	Mean	SD	Min	Max
Similiarity Commercial Skills	-0.404	0.316	-1.976	0.000
Similarity Technical Skills	-0.387	0.294	-1.619	0.000
Similarity Leadership	-0.383	0.308	-1.483	0.000
Same Gender	0.698			
Same Office	0.593			

Table 3 presents the results of the counterfactual analysis. We find significant and positive coefficients for all three variables of interest (0.275, 0.310, and 0.318 for similarity in commercial skills, technical skills, and leadership behavior, respectively). This suggests that the actual dyads are more similar than the randomly matched counterfactuals that were created based on the overall available pool of engagement managers. Thus, similarity increases the

likelihood that an actual dyad is formed. This pattern is consistent with the theory of homophily and therefore supports our first hypothesis. In addition, being in the same office increases the likelihood of a partner and manager being matched, which matches the pattern that the majority of dyads (59 percent of our sample) are formed within an audit office. In contrast to Downar et al. (2021), sharing the same gender does not increase the likelihood of dyad formation.

Table 3: Counterfactual Analysis – H1

	Dependent Variable P (Actual Dyad)	
	(1)	(2)
Intercept	-1.003***	-0.555
Similarity Commercial Skills	0.275**	0.282**
	(0.124)	(0.129)
Similarity Technical Skills	0.310**	0.301**
	(0.126)	(0.127)
Similarity Leadership	0.318**	0.345**
	(0.128)	(0.139)
Same Gender	0.062	0.06
	(0.087)	(0.087)
Same Office	0.355***	0.357***
	(0.081)	(0.081)
Familarity Partner		-0.072
		(0.113)
Familiarity Manager		-0.049
		(0.112)
Controls		
Firm Controls?	Yes	Yes
Observations	2,000	2,000
AIC	1,206.43	1,209.71

This table presents the results of Model 1. We use a probit regression model to test our first hypothesis. In Column 1, we predict the probability that an actual dyad is formed using the similarity of the dyad in terms of their skills and leadership behavior as main independent variables. We control for the dyad sharing the same gender and being in the same office, as well as for audit firm differences using a firm indicator. In Column 2, we add two additional controls for the team's average familiarity with the respective leader. See Appendix B for exact variable definitions. Standard errors are reported in parentheses below the coefficients, ***, **, and * indicate significance at 1%, 5% and 10% level (two-tailed), respectively.

In an untabulated mean comparison, we compare the similarity scores of the dyads that were assigned by the audit firm versus the ones where the partner selected the manager. We do not find a statistical difference between the two groups, which suggests that dyads assigned by the firm are also similar in their skills and leadership behavior.

Next, we perform the k-means cluster analysis. This method suggests the existence of three unique clusters, i.e., there are three distinct leader profiles. Figure 4 details a visual representation of the three clusters, and Table 4, Panel A, provides summary statistics for each cluster.
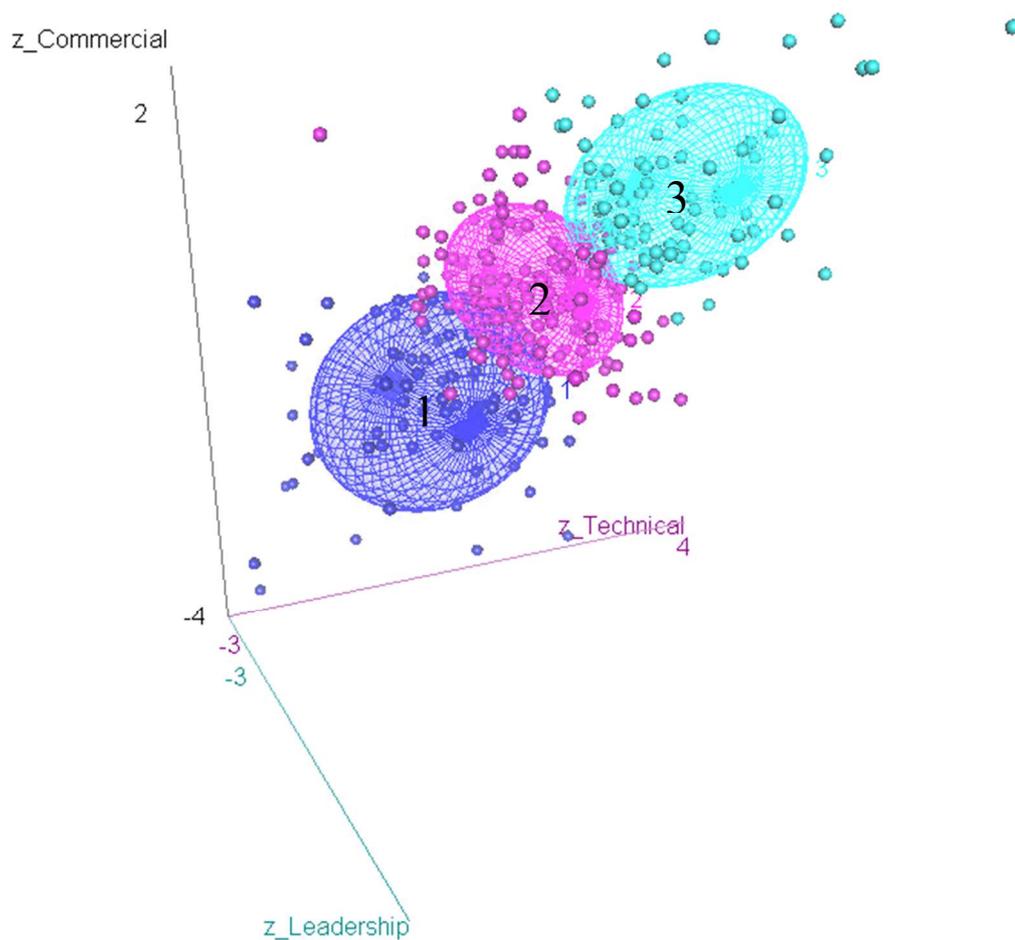
Figure 4: Visual Representation Clusters

Individuals in Cluster 1 (dark blue) score significantly below average on each of the three dimensions, whereas individuals in Cluster 2 (pink) score around the average on each of the three dimensions. Leaders in Cluster 3 (turquoise) score significantly higher on all three dimensions. This suggests that there is little variation across these three variables within a leader: either the team members perceive the leader as an above average leader with high commercial and technical skills and implemented the leadership behaviors frequently, or they do not perceive the leader as a good leader and rate her lower on all dimensions.

Next, we look at the dyad formation and whether dyads are more likely formed within or across clusters. Table 4, Panel B presents a frequency table on the dyad formation. The results provide further support for our first hypothesis because dyads are significantly more likely to be formed *within* a cluster (52 percent).

Table 4: Results Cluster Analysis

Panel A: Descriptives Cluster

	Cluster 1 Dark Blue n = 76		Cluster 2 Pink n = 168		Cluster 3 Turquoise n = 82	
	Mean	SD	Mean	SD	Mean	SD
Commercial Skills	-1.22	0.80	0.06	0.82	1.00	0.80
Technical Skills	-0.94	0.55	-0.12	0.61	1.11	0.65
Leadership	-1.08	0.61	0.02	0.71	0.94	0.59

Panel B: Dyad Formation using the Cluster Analysis

		Manager		
		1 – Low	2 – Avg	3 - High
Partner	1 – Low	**23**	20	4
	2 – Avg	17	**58**	26
	3 - High	3	26	**22**

In summary, the results from both the counterfactual analysis and cluster analysis are in line with our prediction. Audit partner-manager dyads appear to be similar in terms of their working style, as reflected in their skills and leadership behavior.

3.5 Test of H2

Research Design

To test how the formed dyad influences the functioning of the team, we use the preceding cluster analyses to classify each dyad. In particular, we are interested in whether a similar dyadic fit (i.e., supplementary) or a dissimilar fit (i.e., complementary) improves the functioning of the team. We classify a dyad as supplementary when both dyad members are in the same cluster and as complementary when they are in different clusters. For the supplementary dyads, we identify the cluster the leaders belong to, which results in three supplementary dyad categories: *Supplements Low*, *Supplements Avg*, and *Supplements High*. As the complementary dyads are in different clusters, we distinguish which leader (partner or manager) is rated higher. Hence, there are two complementary dyad categories: *Complements Partner High Manager Low* and *Complements Partner Low Manager High*. Figure 5 provides an overview of the dyad classifications.

		Manager - Cluster		
		1 – Low	2 – Avg	3 - High
Partner - Cluster	1 – Low	Supplementary Low [Baseline] (n = 23)	Complementary Manager > Partner (n = 43)	
	2 – Avg	Complementary Partner > Manager (n = 41)	Supplementary Avg (n = 51)	
	3 - High			Supplementary High (n = 20)

Figure 5: Overview - Categorization of Dyads

We merge the leader-survey with the team-survey to obtain the different outcome variables. This reduces the sample size to 178 engagement teams, for which we have at least three team member ratings (mean = 4.65 raters) . To test how the formed dyad influences the functioning of the engagement team, we estimate the following OLS Model:

$$Team\ Outcomes = \alpha + \beta * Dyad\ Type + \gamma Controls + \varepsilon, \tag{2}$$

where *Team Outcomes* is one of the four team-assessed outcome variables (*Psychological Safety, Team Identity*, *Team Commitment*, or *Team Performance*) and *Dyad Type* reflects the five different dyad categories as classified above. *Supplements Low* serves as the baseline. We include controls for *Same Office, Same Gender,* and the audit firm.

Results H2

Table 5 presents descriptive statistics and correlations for the different outcome variables and the similarity measures of the dyad. Based on the correlation matrix, there is no relation between the different similarity measures and the team outcomes. However, the similarity measures do not differentiate between a high degree of similarity resulting from weak or strong performing dyads. Thus, we turn to the main analyses that used the dyad types rather than the raw similarity scores.

Table 4: Descriptive Statistics & Correlations

		Mean	SD	1	2	3	4	5	6	7
1	Psychological Safety	3.96	0.26	**1.00**						
2	Team Commitment	3.91	0.27	**0.77**	**1.00**					
3	Team Identity	3.60	0.38	**0.62**	**0.59**	**1.00**				
4	Team Performance	3.83	0.38	**0.63**	**0.71**	**0.40**	**1.00**			
5	Similarity Technical Skills	-0.39	0.30	-0.1	-0.09	-0.13	-0.04	**1.00**		
6	Similarity Commercial Skills	-0.40	0.31	-0.08	-0.09	-0.08	0.00	**0.21**	**1.00**	
7	Similarity Leadership	-0.34	0.29	0.00	-0.03	0.01	0.01	**0.22**	**0.15**	**1.00**

This table presents the Pearson correlation coefficients. Significant correlations ($p < 0.01$) in **bold.** As the dyad types, the key independent variables of interest for H2, are categorical, they are missing from this output.

Table 6 presents the results of Model 2. The results are consistent across the different team outcome measures and provide evidence of both supplementary and complementary effects. First, a dyad consisting of a similar partner and manager who both possess strong skills and leadership behaviors (*Supplements High)* has the strongest influence on audit team dynamics (psychological safety, team commitment, and team identity) and audit team performance. Second, a strong partner (manager) can compensate a weak (manager) partner, as indicated by the positive and significant coefficients for the two complementary dyads. The complementary dyads also outperform the two other supplementary dyads (*Supplements Average,* and *Supplements Low* [baseline]). The results suggest that rather than matching two individuals who have low or average skills and leadership behaviors, it would be more beneficial for the functioning of the team to create complementary dyads with one stronger leader. We find the lowest levels of team functioning if the dyad consists of two leaders who score below average on skills and leadership. While it might not be surprising that a team with two weaker leaders performs worse, the fact that such a dyad is formed is concerning. Untabulated frequency tables show that such a dyad is also assigned by the firm and is not only a result of self-selection by the auditors.

Comparing the two types of complementary dyads, we note that for all of the four outcome variables, the coefficient for the dyad with a stronger manager and weaker partner (*Complements Partner Low, Manager High)* is larger than the coefficient of the dyad with a strong partner and weaker manager (*Complements Partner High, Manager Low)*. While the difference is not significant at conventional levels, it highlights that the manager seems to play an important role in the functioning of the team.

Table 6: Regression Results H2

| | Dependent Variable | | | |
| | Team Dynamics | | | |
	Psychological Safety (1)	Team Commitment (2)	Team Identity (3)	Team Performance (4)
Intercept	3.790***	3.195***	3.688***	3.425***
	(0.085)	(0.122)	(0.085)	(0.120)
Complements Partner High Manager Low	0.171***	0.364***	0.239***	0.402***
	(0.065)	(0.093)	(0.065)	(0.092)
Complements Partner Low Manager High	0.225**	0.414***	0.256***	0.424***
	(0.065)	(0.092)	(0.065)	(0.088)
Supplements Average	0.065	0.203**	0.109*	0.320***
	(0.063)	(0.089)	(0.063)	(0.088)
Supplements High	0.309***	0.591***	0.424***	0.602***
	(0.076)	(0.108)	(0.076)	(0.107)
Same Office	0.013	0.022	-0.0002	0.018
	(0.038)	(0.054)	(0.038)	(0.053)
Same Gender	-0.002	0.047	0.016	0.126**
	(0.042)	(0.059)	(0.042)	(0.058)
Team Size	0.005	0.012	0.003	-0.011
	(0.012)	(0.017)	(0.012)	(0.017)
Firm Controls?	Yes	Yes	Yes	Yes
Observations	178	178	178	178
Adj. R2	0.102	0.157	0.161	0.154
F-Statistic (df = 7; 170)	3.864***	5.709***	5.860***	5.593***

This table presents the results of Model 2. We rely on an OLS regression model to test our second hypothesis. We report results for four dependent variables, all assessed by the audit team members: (1) Psychological Safety, (2) Team Commitment, (3) Team Identity, and (4) Team Performance. We control for the dyad sharing the same gender, being in the same office, the team size, and conrol for audit firm differences using a firm indicator. See Appendix B for exact variable definitions. Standard errors are reported in parentheses below the coefficients, ***, **, and * indicate significance at 1%, 5% and 10% level (two-tailed), respectively.

Collectively, our findings indicate that dyadic fit influences team functioning. The direction of this relationship depends on the type of dyad: similarity can have a positive influence on the team if the dyad consists of two skilled individuals with high leadership behavior. If one of the dyad members displays average or below average skills and leadership behavior, it is beneficial for the team to pair this dyad member with a stronger leader.

3.6 Additional Analyses

The functioning of the dual-leadership structure in an audit team is largely unexplored. Thus, there is no evidence of the relative influence of each of the leaders on the team. We conduct this additional analysis to explore whether one dyad member influences the functioning of the team more strongly. To do so, we regress the different team outcome variables on the skills and leadership behavior of the partner and manager separately. Table 7 presents the results.

The analysis provides two main insights. First, we note that the team functioning is influenced by the leadership behavior rather than the dyad members' professional and technical skills. The positive coefficient implies that more frequently implementing leadership behaviors that satisfy the needs of the team ultimately results in a better functioning team, as suggested in the team science literature (e.g., Morgeson et al., 2010).[36] Second, the analysis suggests that both partner and manager influence the team, which emphasizes the importance of studying the dual-leader structure. The partner's leadership behavior influence is largest on *Psychological Safety* (0.062) and *Team Identity* (0.055), whereas the manager's leadership behavior is associated with *Team Commitment* (0.109) and *Team Performance* (0.103).

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[36] We include technical and commercial skills because we expect the skills to influence other engagement-related outcomes, such as efficiency and audit quality. Once the internal firm data is delivered, these outcome variables will be added to the analysis.

Table 7: Additional Analysis: Individual Leaders - Team Dynamics

	Dependent Variable			
	Team Dynamics			
	Psychological Safety	Team Commitment	Team Identity	Team Performance
	(1)	(2)	(3)	(4)
Intercept	3.872***	3.499***	3.855***	3.890***
	(0.070)	(0.099)	(0.073)	(0.096)
Commercial Skills Partner	-0.038	-0.008	-0.007	0.048
	(0.024)	(0.034)	(0.025)	(0.033)
Commercial Skills Manager	0.045	0.049	0.066**	0.044
	(0.028)	(0.040)	(0.029)	(0.038)
Technical Skills Partner	0.032	0.05	0.04	0.028
	(0.024)	(0.035)	(0.026)	(0.034)
Technical Skills Manager	-0.006	-0.046	-0.031	-0.023
	(0.076)	(0.036)	(0.026)	(0.034)
Leadership Partner	0.062**	0.070*	0.055**	0.061
	(0.026)	(0.038)	(0.028)	(0.036)
Leadership Manager	0.047*	0.109***	0.018	0.103**
	(0.028)	(0.040)	(0.059)	(0.039)
Female Partner	0.067	0.019	0.021	0.097
	(0.056)	(0.080)	(0.045)	(0.078)
Female Manager	0.009	-0.030	-0.009	-0.087
	(0.043)	(0.061)	(0.039)	(0.059)
Controls?	Yes	Yes	Yes	Yes
Observations	178	178	178	178
Adj. R2	0.204	0.251	0.175	0.279
F-Statistic (df = 7; 170)	3.864***	5.709***	5.860***	5.593***

This table presents the results from our additional analysis. We use this analysis to examine the influence of each leader separately. We report results for four dependent variables, all assessed by the audit team members: (1) Psychological Safety, (2) Team Commitment, (3) Team Identity, and (4) Team Performance. We control for the dyad sharing the same gender, being in the same office, the team size, and conrol for audit firm differences using a firm indicator. See Appendix B for exact variable definitions. Standard errors are reported in parentheses below the coefficients, ***, **, and * indicate significance at 1%, 5% and 10% level (two-tailed), respectively.

A possible interpretation of this finding is that psychological safety and team identity are elements of a team climate that be initiated top-down, whereas team commitment and performance require continuous attention, which is why the manager, as the daily supervisor, is more important. Overall, the analysis confirms that both the partner' and manager's leadership behavior influences the dynamics in the audit team.

3.7 Conclusion

In this study, we address two related research questions. The first question revolves around the formation of the partner-manager dyad that jointly leads the audit engagement team. The second question asks how the formed dyad influences the functioning of the team. We rely on the theory of homophily to formulate our predictions and test those by collecting data via two large-scale surveys. Our sample includes ten audit firms (Big 4 firms and six medium-sized firms) in the Netherlands, and the final sample includes 211 engagement teams and their partner-manager dyads.

We find that partners and managers that form a dyad are, on average, similar in terms of their skills and leadership behavior, regardless of whether the dyad is assigned by the firm or the partner selected the manager. We further document that similarity can positively affect the team, but only if both partner and manager are above average in skill and demonstrate consistently high leadership. Otherwise, it is better to assign complementary dyads, as a strong partner (manager) can compensate for a weak manager (partner).

These findings can provide audit firms with useful information on how they manage and compose their audit teams. As most audit partners (in our sample, 68 percent) are given the freedom to choose their engagement managers, audit firms should understand the potential consequences of that choice. This could help the firms to achieve their goal of establishing consistent levels of audit quality across engagements. Our study emphasizes the dual-

leadership role of the audit partner and the team: both leaders influence the functioning of the team. The audit standards and (internal) quality reviews largely focus on the audit partner, as the leader who is ultimately responsible for the engagement, and do not pay as much attention to the responsible engagement manager. Our findings suggest that more carefully matching audit partners and managers can positively influence the functioning of the audit engagement team, which should ultimately increase audit efficiency and effectiveness.

Our study is subject to some limitations. We focus on engagement team dynamics as outcome measures. While we assume that a better functioning team will ultimately conduct a higher quality audit, this assumption needs to be validated in future analyses using actual audit outcomes. We also rely on team members' ratings for the skills and leadership abilities of the partner and manager. Even though observer ratings are frequently used in the OB and psychology literature, we cannot rule out that the assessments are potentially not reflective of the true abilities of the dyad members.

Appendices Chapter 3

Appendix A: Survey Items

Leader-Survey

All items were assessed on a 1-5 Likert scale.

Skills

Respondents were asked to assess the level of skills demonstrated by the partner/manager. 1 = Needs improvement, 2 = Just below expectations, 3 = meets expectations, 4 = Exceeds expectations, 5 = Outstanding.
The Partner/Manager..

Commercial Skills (Cronbach's alpha = 0.84)

Establishes and maintains relevant networks/markets and acquires future sales and business.

Contributes to organizational image, represents the firm to clients and in the public debate, participates in community and socail affairs.

Manages client relationships and builds a portfolio.

Provides exceptional client services and impact.

Technical Skills (Cronbach's alpha = 0.81)

Is proficient at technical requirements, knows what it takes to do the job, has recognized expertise.

Effectively manages compliance and risks to the firm.
Understands processes linked to audit engagement effectiveness, and is able to deliver a high-quality audit.

Leadership Behavior (Cronbach's alpha = 0.93)

Respondents were asked to describe their partner's (manager's) leadership behavior. 1 = Rarely or never, 2= Once in a while, 3 = Sometimes, 4 = Fairly Often, 5 = Very frequently or always.
I believe this [partner/manager] implemented the following behaviors:

Defining the mission. Clarifies team objectives, provides a clear vision and sets the tone.

Estsblishing expectations and goals. Sets and communicates challenging yet realistic goals.

Structuring and planning. Assigns tasks, roles and responsibilities, and coordinates team activities.

Training and developing. Provides interpersonal, problem solving and audit skill development.

Providing feedback. Gives constructive feedback on performance relative to standards and results.

Sensemaking. Helps to understand and makes sense of events, trends, and changes.

Monitoring operations. Checks on progress, considers problems toward individual or team success.

Managing resources. Obtains and allocates people, expertise and other resources.

Challenging the team. Suggests new ways of doing things, questions assumptions and status quo.

Solving problems. Seeks multiple perspectives and encourages participation to solve problems.

Supporting the social climate. Provides encouragement and support, looks out for team members.

Encouraging collaboration. Emphasizes the use of teamwork, deals with conflicts and disagreements.

Building relationships with clients. Timely discussions of audit progress and problems with clients.

Recognizing praise and performance. Gives recognition and links rewards to effective performance.

Resolving conflicts. Encourages constructive and collaborative problemsolving, defuses conflict.

Communicating clearly. Communicates information in an open, articulate, confident manner.

Team – Survey

All items were assessed on a 1-5 Likert scale. 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree

Psychological Safety (Cronbach's alpha = 0.84)

I believe the members of this audit engagement team:

Respect one another

Are able to bring up problems and tough issues with other.

Make each other feel valued.

Are encouraged to ask other members for help.

Share and accept constructive criticism without making it personal.

No one on this team would deliberately act in a way what would undermine anyone else's work.

Team Commitment (Cronbach's alpha = 0.83)

I believe the members of this audit engagement team:

Are all committed to our team.

Find that their values and the team's values are very similar.

Really care about the fate of this team.

Believe that this is the best of all possible teams for which to work.

My team really inspires the very best from its members in the way of job performance.

Team Identity (Cronbach's alpha = 0.69)

Please rate your agreement with each statement:

I feel great pride when my team does well, even if I'm not the main reason for its success.

The successes of my team are my successes too.

When someone praises my collaboration with this team, it feels like a personal compliment.

Team Performance (Cronbach's alpha = 0.84)

I believe my audit engagement team:

Meets or exceeds its goals.

Completes its tasks on time.

Makes sure that audit services meet or exceed service standards.

Responds quickly when problems come up.

Is a productive team.

Appendix B: Variable Descriptions

Variable	Description
Observed-assessed attributes of the leader	
Scale 1 - 5	
Commercial Skill	Skill factor capturing the auditor's capability to establish, maintain networks, generate revenue, manage client relationships, and build a portfolio, represent the audit firm. Assessed by at least three team members. The final score is the average of all ratings.
Technical Skill	Skill factor capturing the auditor's capability to provide high quality audit services, manage risks and compliance, and being technical proficient. Assessed by at least three team members. The final score is the average of all ratings.
Leadership	Leadership factor capturing how frequently the auditor implemented the different action and transition leadership behaviors. Assessed by at least three team members. The final score is the average of all ratings.
Similarity between leaders	
Similarity Commercial Skills	(| Commercial Skill Partner - Commercial Skill Manager|) * (-1)
Similarity Technical Skills	(| Technical Skill Partner - Technical Skill Manager|) * (-1)
Similarity Leadership	(| Leadership Partner - Leadership Manager|) * (-1)
Same Gender	1 if both partner and manager share the same gender, 0 otherwise.
Same Office	1 if both partner and manager are located in the same office, 0 otherwise.
Dyad Types	
Complement Partner High Manager Low	The dyad falls in this category, if the dyad members are in different clusters <u>and</u> the partner's rating exceeds the manager's rating.
Complement Partner Low Manager High	The dyad falls in this category, if the dyad members are in different clusters <u>and</u> the manager's rating exceeds the partner's rating.
Supplements Low	The dyad falls in this category, if both partner and manager are in Cluster 1 (i.e., their rating is below average on both skills and leadership). This type serves as baseline in Model 2.
Supplements Average	The dyad falls in this category, if both partner and manager are in Cluster 2 (i.e., their rating is average on both skills and leadership.)
Supplements High	The dyad falls in this category, if both partner and manager are in Cluster 3 (i.e., their rating is above average on both skills and leadership.)
Controls	
Familiarity Partner	Team's average familiarity score with the partner (how well do they know the partner + do they like the partner, 5 question item).
Familiarity Manager	Team's average familiarity score with the manager (how well do they know the manager + do they like the manager, 5 question item).
Team Size	Number of observations per team
Firm	Indicator variable for each firm in the sample.
Female	1 if the auditor is female, 0 otherwise.

Chapter 4 : It Takes Two to Make a Team Go Right: The Impact of Dual Team Leader Consideration and Initiating Structure Behaviors on Team Efficacy, Performance, and Viability

Abstract[37][38]

Today's teams often rely on two different leaders, yet prior research has almost exclusively examined effects of one team leader to motivate team members and ensure successful team outcomes. This is problematic because this research cannot unequivocally be applied to complex dual leadership structures. Using 93 professional service (i.e., audit) teams, we examine effects of partner and manager leaders simultaneously exhibiting initiating structure and consideration leadership behaviors on team efficacy and, ultimately, team performance and viability. Supporting both hypothesized complementary and supplementary dual leadership effects, we find that when at least one leader exhibits high initiating structure, higher levels of team efficacy occur when at least the other leader exhibits high consideration (i.e., a complementary effect). When both leaders exhibit higher levels of consideration, team efficacy is also strengthened (i.e., a supplementary effect). We further find when the higher status partner exhibits high initiating structure and consideration, the effect on team efficacy is augmented when the manager exhibits high consideration. Single leader studies are unable to account for team leadership effects when dual leader structures are functioning. We conclude that consideration, and not initiating structure, is more critical for building team efficacy, team performance, and viability in dual leadership structures.

Keywords: dual leadership structures; professional service teams; audit teams; consideration; initiating structure; team efficacy; team performance; team viability

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4.1 Introduction

Organizations continue to use teams to carry out work and accomplish goals (Mathieu, Gallagher, Domingo, & Klock, 2019). Although teams have been used for over three decades, today's team designs are more complex. Teams are more likely to be dynamic, fluid, and project-based, rather than stable and ongoing (Hollenbeck, Beersma, & Schouten, 2012). Unlike teams of the past, today's teams also often have more than one leader to motivate team members and ensure healthy team outcomes (Vidyarthi, Erdogan, Anand, Liden, & Chaudhry, 2014). Contrary to teams with single leaders, teams with "dual" leadership structures must coordinate leadership behaviors across leaders to ensure that all team members are on the same page regarding team objectives. Dual leadership structures are commonly found in flatter organizational structures in which work is project-based (Gallo, 2013). In support of their importance, Vidyarthi et al. (2014) estimate that between 24 and 71 million workers in the U.S. report to more than one leader.

Despite increases in dual leadership structures, research has mainly focused on single-leader team designs (Morgeson et al., 2010) and relied on traditional leadership models that do not capture complex leader-team dynamics. As a result, "there are considerable gaps in our understanding of the unique interplay between teams and leadership processes" (Morgeson et al., 2010, p. 6). Thus, researchers and practitioners are left to draw insights from studies that are not applicable to these teams.

This lack of research raises several key questions. How do differences or similarities in dual leader styles affect the functioning and motivation of teams? Should dual leadership structures emphasize complementary (i.e., each leader uses a different type of behavior) or supplementary (i.e., both leaders exhibit similar behaviors) approaches to ultimately maximize team performance and even the viability of teams? To deal with the lack of answers to these questions in the literature, we employ one example of dual leadership structures in a

professional service team setting; more specifically, audit engagement teams charged with issuing an audit opinion on a client organization's financial statements and corporate reporting (Francis, 2011).

Audit teams typically have two leaders who collaboratively manage a team to complete financial statement audits. One is an audit engagement "partner," who is traditionally viewed as externally-focused, obtains clients, and must "sign off" on an audit opinion, which has reputational and legal implications. The second hierarchically lower-level leader is an audit engagement "manager," who is predominantly internally focused and manages day-to-day leadership of an audit team. Other audit team members often include assistant managers, senior associates, and junior staff, who all report to the partner-manager leaders. Although research on audit teams has focused mainly on audit partners (Cameran, Campa, & Francis, 2022; Gul, Wu, & Yang, 2013; Knechel, Vanstraelen, & Zerni, 2015), both the partner and manager have important leadership roles for their teams (e.g., Alberti, Bedard, Bik, & Vanstraelen, 2022; Cameran et al., 2018). What is unknown and, to our knowledge, has never been examined is the dynamic interplay of leader behaviors between two leaders in the dual leadership structure with hierarchically-differentiated responsibilities and interactions. This is problematic because scholars and practitioners have relied on research from single team leadership studies, even erroneously applying this knowledge to these more complex team leadership structures.

Hence, we examine effects of dual partner-manager leadership structures on audit team efficacy and, ultimately, team performance and viability. Team efficacy is "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments"(Bandura, 1997, p. 477) We focused on team efficacy as a mediator for two reasons. First, theoretically, team efficacy as a mediator is consistent with input-mediator-output (IMO) process models of team effectiveness (Ilgen, Hollenbeck, Johnson, & Jundt, 2005), in which emergent states (e.g., team efficacy) mediate between inputs

(e.g., leadership) and outputs (e.g., performance, viability). Second, as audit teams adjourn and reconvene during a typical audit, team members must maintain ongoing collective confidence to drive client service when reconvening, even if the team undergoes member composition changes (usually more junior staff). Dynamic membership also makes both team performance and viability critical outputs because the success of audit firms will depend not just on consistently performing well, but also having team members that are willing to continue to work together in the future to encourage the viability of new teams.

As an overarching theoretical framework to choose and explain relationships between constructs, we use functional leadership theory, which indicates that the role of leaders is "to do, or get done, whatever is not being adequately handled for group needs"(McGrath, 1962, p. 5). Two of the most important team needs that must be met are ensuring team members (a) accomplish tasks (i.e., taskwork), and (b) maintain healthy relationships between team members (i.e., teamwork) (Crawford & Lepine, 2013; Kozlowski & Bell, 2013). Thus, leaders need to behave in ways that foster team task accomplishment and enhance interpersonal relationships.

Matching up with these two primary team needs, leadership researchers have identified two key leader behaviors that drive individual and team success (Judge et al., 2004). Initiating structure refers to the "degree to which a leader defines and organizes his [or her] role and the roles of followers, is oriented toward goal attainment, and establishes well-defined patterns and channels of communication"; and, individualized consideration refers to the "degree to which a leader shows concern and respect for followers, looks out for their welfare, and expresses appreciation and support" (Judge et al., 2004, p. 36). Rather than merely re-examine the main effects of these leadership behaviors of a single leader as has been the primary focus of earlier research, our purpose is to investigate theory-driven interactive effects between functional

combinations of both leadership behaviors across the two different team leaders (i.e., partners and managers) to build team efficacy and ultimately influence team performance and viability.

We offer three theoretical implications for team leadership research. First, we extend nascent research examining the impact of dual leadership structures on team outcomes. Classic research on matrix organizations focuses on the dynamic interplay between two leaders, a functional leader (i.e., leading members from a department) and a project leader (i.e., leading members on a specific project). However, the focus has been on understanding how employees navigate conflicts from dual leadership because the two leaders often have different goals and interests (Dunne Jr, Stahl, & Melhart Jr, 1978), resulting in employees being pulled in conflicting directions. In contrast, in audit teams and other dual team leadership structures (Vidyarthi et al., 2014), both partner and manager leaders have the same goal: to complete the audit effectively, efficiently, and satisfactorily. As such, there are limits to what can be applied from the matrix literature to these team types, and there is much more to be learned about the collaborative nature of dual team leadership. Thus, a key contribution of our study is to apply functional leadership theory and examine unique influences when two leaders from different levels of authority share leadership responsibility and are jointly held accountable for the results of their team.

Second, we extend research on the impact of initiating structure and consideration on team outcomes. As noted, most research has examined the impact of a single leader's use of these behaviors on teams. In a meta-analysis, Burke et al. (2006) found that initiating structure explained 10 percent of the variance in team effectiveness and four percent in team productivity; and, consideration explained six percent of the variance in team effectiveness and five percent in team productivity. Again, such research focused on single leader behaviors. As a result, we have little understanding of the impact of initiating structure and consideration on team outcomes when they are exhibited in a dual leadership structure. Yet, we go one step

further and examine the possibility there could be interactions between these two functional leadership styles when originating from two different leaders in the same team to help shed more light on how these behaviors can be used in a supplementary or complementary fashion to influence team success.

Finally, our research has implications for functional leadership theory itself. Morgeson et al. (2010, p. 27) describe existing team leadership research as limited because it primarily examines single sources of leadership such that "the total leadership capacity of a team is underestimated"; and, accordingly, they note that "considering all of the sources of team leadership is essential for developing a complete understanding of team leadership processes and the leadership capacity within the team." In calling for future research, Morgeson et al. (2010, p. 28) suggest that scholars need to simultaneously explore multiple leadership sources, and that in the absence of such research, "we do not have a clear understanding of how these different sources of leadership are interrelated and how they might interact in a dynamic way." They also point to the importance of examining how external and internal team leaders combine to deliver leadership resources to teams. To address this important call to extend functional leadership theory and gain a more complete understanding of this key leadership dynamic applied to teams, we examine the interaction of both externally-focused (i.e., partner) and internally-focused (i.e., manager) leaders as two unique sources of leadership in audit teams and the combined influence of initiating structure and consideration behaviors across these two leaders have on team functioning. We depict our theoretical model in Figure 6.
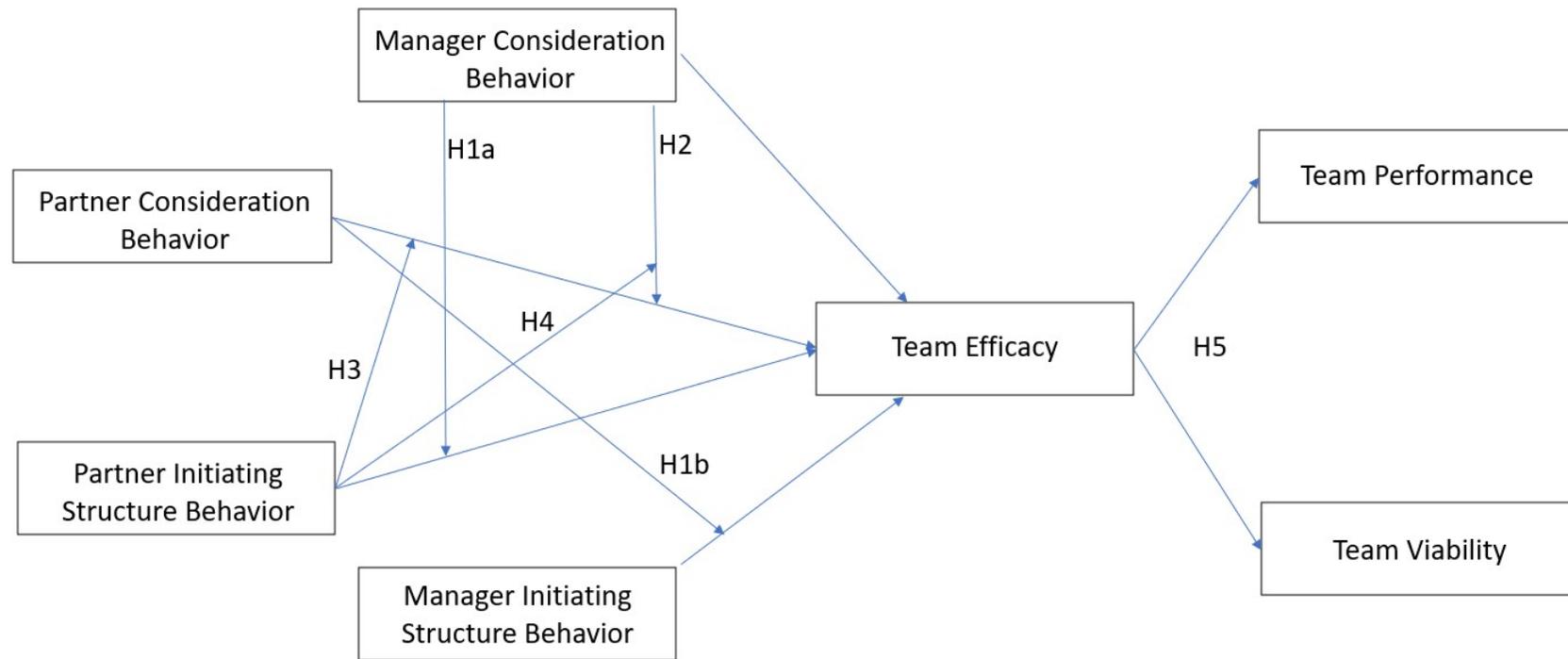
Figure 6: Theoretical Model

4.2 Theoretical Development and Hypotheses

Two key leader behaviors that all work groups and teams need, initially identified in the Ohio State Leadership Studies (Stogdill, 1974), are initiating structure and consideration. In the over 75 years that researchers have been examining these two leadership behaviors, studies have consistently shown that they promote effective individual and team functioning. In numerous studies at the individual level, they have been linked to satisfaction with leaders, job satisfaction, motivation, leader effectiveness, and job performance (Judge et al., 2004). At the team level, albeit with fewer studies, both have been linked to team effectiveness and productivity (Burke et al., 2006). The focus on explaining team outcomes implies these leader functions directly influence mediational mechanisms through which the two leadership behaviors ultimately affect outputs. Current models have not adequately examined the ways these leadership functions are mediated to impact team outputs in a dual leadership structure with both an externally-focused (i.e., partner) and internally-focused (i.e., manager) team leader (Morgeson et al., 2010).

Team efficacy has consistently explained how collective team leadership affects team outcomes (Sivasubramaniam, Murry, Avolio, & Jung, 2002). Team efficacy is a team's shared perception of its capacity to successfully perform tasks (Gibson, Randel, & Earley, 2000; Tasa, Taggar, & Seijts 2007). Gibson (1999, p. 138) explained that team efficacy "forms as group members collectively acquire, store, manipulate, and exchange information about each other and about their task, context, process, and prior performance." Team efficacy is generally regarded as a team emergent state, or a dynamic team-level property that emerges from team member interactions (Marks et al., 2001). In IMO models of team effectiveness (Ilgen et al., 2005), team viability and performance are viewed as more distal outputs of team leader behaviors, whereas team efficacy is seen as more proximal.

Effects of Interactions between Partner and Manager Initiating Structure and Consideration on Team Efficacy

To enhance team efficacy, leaders need to focus on both taskwork and teamwork. For taskwork, leaders can use initiating structure behaviors because they promote completing tasks, such as organizing roles, setting goals, monitoring progress, and creating defined patterns and methods of communication (Judge et al., 2004). For teamwork, leaders can use consideration behaviors because they enhance aspects of being a teammate, such as showing concern and respect for other members, looking out for their welfare, and expressing appreciation and support (Bass, 1990). Enhanced taskwork will contribute to team members' beliefs that their team is capable of successfully accomplishing tasks because they will have the clarity and guidance needed for getting tasks done effectively. Increased teamwork will also promote team members' belief in their ability to accomplish tasks because it builds confidence in the collective ability of a team to produce high quality team outputs.

Considerable evidence exists that people assume initiating structure is more important to leadership than consideration (Frost & Robinson, 1999). For example, people often hold a "bottom-line" focus, stressing sales, productivity, and financial outcomes over other goals (Barrett-Howard & Tyler, 1986; Greenbaum, Mawritz, & Eissa, 2012). Likewise, meta-analyses report larger main effects for initiating structure over consideration on team outcomes (Burke et al., 2006; DeRue, Nahrgang, Wellman, & Humphrey, 2011; Judge et al., 2004). We argue that instead of focusing on simple main effects, to establish the maximum capacity of all a team's leadership behaviors researchers must jointly account for interactions between initiating structure and consideration. Because our criterion is team efficacy, we also argue that leaders must enact consideration behaviors because they likely impact follower receptivity to initiating structure behaviors in building team confidence.

Decades ago, Fleishman and Harris (1962, pp. 53-54) argued that employees would be more receptive to initiating structure when leaders demonstrated consideration because such leaders "may establish a climate of mutual trust and that in such a climate, workers are more likely to accept (and implement) challenging standards and role structure initiated by the leader." In support of this contention, studies have shown that effects of initiating structure on individual and group/team outcomes were more strongly positive when leaders also exhibited higher consideration (Cummins, 1971, 1972; Dawson, Messe, & Phillips, 1972; House, Filley, & Kerr, 1971; Schriesheim, 1982). These findings illustrate that high levels of leader consideration can satisfy follower needs for concern, support, and respect, which are necessary to follow a leader demanding high levels of task structure. We also posit leader consideration behaviors are particularly influential when building team confidence and efficacy.

Although these studies revealed the interplay between initiating structure and consideration by a single leader, it is theoretically problematic that no research has assessed this dynamic for dual team leaders, which again are widely prevalent. In audit teams, as partners and managers could conceivably show higher or lower levels of either leadership behavior, it is both theoretically and practically important to examine how the effects of either leader's behavior on teams are influenced by the behavior of the other leader, thereby authenticating a team's total functional leadership capacity (Morgeson et al., 2010). We argue that the total leadership capacity of two audit team leaders working together can only be fully realized by accounting for both taskwork, or setting demanding goals, including criticism of mistakes (i.e., initiating structure), as well as teamwork, or assisting and encouraging, by showing that their leaders are supportive and care about members personally (i.e., consideration). Functional leadership theory thus provides an overarching theoretical framework that clarifies why jointly fulfilling both taskwork and teamwork functional needs is critical to influencing key team outputs via team efficacy. We first theorize how the dynamic interplay between partner and manager

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initiating structure and consideration behaviors jointly influences our mediating mechanism, team efficacy.

We argue that the positive relationship between an audit partner's initiating structure behaviors and team efficacy is more strongly positive when the manager's consideration behavior is higher, rather than lower. High consideration leaders establish trust and concern for teammates by providing teamwork support, which can overcome directive and demanding aspects of high initiating structure and enable members to accept and follow the taskwork structure by the other leader. In the absence of a manager using consideration, a partner's initiating structure behavior could be viewed as demanding, restrictive, or even threatening (Fleishman & Harris, 1962), which would erode team efficacy. Such treatment by a partner, without a balance of consideration from a manager, likely weakens the positive relationship between a partner's initiating structure behaviors and team efficacy. Indeed, deficient levels of consideration can "interfere with employees' need for a supportive work environment" (Lambert, Tepper, Carr, Holt, & Barelka, 2012, p. 916). We also expect the same outcome when manager and partner leadership roles are reversed, such that key behaviors are provided by the other leader.

Consequently, applying functional leadership theory, we argue that higher levels of team efficacy occur when partners (managers) exhibit higher levels of initiating structure behavior while managers (partners) exhibit higher levels of consideration behavior at the same time. Decades-old research with individual leaders supports our theoretical contention that when predicting team efficacy, a combination of higher initiating structure and consideration leader behaviors is associated with more positive outcomes (Cummins, 1971; Dawson et al., 1972; House et al., 1971). Based on our theorizing and tangential evidence from single leader research, we hypothesize in a dual leadership structure:

H1a: Partner initiating structure and manager use of consideration interact to predict team efficacy, such that more reliance on initiating structure by the partner results in greater team efficacy when paired with higher, rather than lower, use of manager consideration.

H1b: Manager initiating structure and partner use of consideration interact to predict team efficacy, such that more reliance on initiating structure by the manager results in greater team efficacy when paired with higher, rather than lower, use of partner consideration.

Beyond complementarity, we argue for a supplementary effect. Higher team efficacy could result from both leaders using high initiating structure or consideration behavior. Because our criterion is team efficacy, the highest team efficacy results when partners and managers use higher consideration. First, audit teams that adjourn and reconvene throughout consecutive phases of a typical audit need to maintain both ongoing and immediate collective confidence necessary to complete the engagement effectively when reconvening, even if the team undergoes member composition changes. Second, whereas the consecutive phases and serial audit procedures these teams conduct are well defined and structured, initiating structure, albeit still important, may not necessarily be as important in audit teams as it could be in other team types. Building on the previous functional arguments acknowledging the cost of the authoritative demands and criticisms that could emerge if both leaders rely solely on initiating structure behaviors, we do not make the same supplementary argument for initiating structure alone.

Leaders can boost team efficacy by consistently demonstrating genuine concern for all members, which besides eliciting their best efforts also conveys confidence in their team's ability to achieve its objectives and perform tasks. By using more consideration behaviors, including treating members with respect, encouraging them, and establishing mutual trust,

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leaders can strengthen member efficacy perceptions. If partners (managers) show higher consideration behaviors and managers (partners) display lower levels of this leadership style, team members would likely perceive mixed messages about their leaders' beliefs in their level of team efficacy. The salience of such low consideration by a manager (partner) is made even stronger by the juxtaposition of a partner (manager) exhibiting higher encouragement and support.

We argue that the positive relationship between partner (manager) consideration behavior and team efficacy is enhanced when managers (partners) also display high consideration. If partners and managers are aligned in their encouragement and support, there is power in the consistency of messaging that teams receive. Members get reinforcement about the importance of teamwork from both leaders. From a sensemaking perspective, consistent information is likely associated with members collectively internalizing a higher degree of team efficacy in response to such leaders' encouragement. Thus, we argue that there is a synergistic effect when both partners and managers exhibit higher consideration behaviors, in that the positive effect of one leader's consideration behavior on team efficacy is further enhanced when the other leader's consideration behavior is higher, rather than lower (i.e., the power of consideration).

> *H2: The partner's (manager's) use of consideration interacts with manager (partner) consideration to predict team efficacy, such that partner (manager) reliance on consideration behavior results in greater team efficacy when paired with higher, rather than lower, manager (partner) consideration.*

Although both partners and managers have important leadership roles that enhance team efficacy, given the hierarchical reporting structure of the partner-manager relationship in audit teams, we argue that a partner's leadership behavior should have a stronger effect on team efficacy compared to a manager. Because partners have influence over managers through hierarchical responsibilities and have more status and power than managers (including input

on raises and promotions), team members are likely to respond very favorably to cues when partners express concern and support about their capabilities to further aid their team, all while bearing the ultimate (externally-oriented) responsibility of signing off on a client's financial statements. In contrast, managers are seen as providing more (internally-oriented) day-to-day oversight and coaching of their audit teams, while partners are relatively removed from such interactions. Research suggests it is critical for partners to set the tone for their teams (Cameran et al., 2022; Lennox & Wu, 2018), in our case by providing a high level of initiating structure and consideration behaviors at the outset of an audit team's client engagement to build up their team's sense of efficacy right from the beginning.

Using functional leadership theory, we suggest the possibility that the higher status and greater responsibilities of the partner can differentially influence team efficacy when examining dual leadership structures. Specifically, given the centrality that teamwork support and consideration have for building team efficacy, we propose that when the more powerful and higher status leader (i.e., the audit partner) sets clear taskwork goals and roles and exhibits teamwork support and coaching, this combination of functional leader behaviors should contribute to higher team efficacy in a dual leadership structure. Thus, when partners are higher on both leadership behaviors, team members likely interpret these behaviors as signals that their most powerful leader is actively focused on their taskwork while also fostering productive teamwork interactions thus engendering team efficacy. This hypothesis builds on studies from the 1970s supporting the notion that a single leader's consideration and initiating structure interact to influence follower's motivation (Cummins, 1971, 1972; Dawson et al., 1972). Because team members view partners as higher status and more powerful, they likely prioritize the partner's leadership behaviors. Thus, we predict:

H3: *The partner's use of consideration interacts with partner initiating structure to predict team efficacy, such that partner reliance on consideration behavior results in*

greater team efficacy when paired with higher, rather than lower, partner initiating structure.

Finally, based on these arguments and applying functional leadership theory, we also examine a three-way dynamic for dual leadership, as we argue that the positive effects that result when the higher status partner exhibits higher initiating structure and consideration (as predicted in H3) are likely to be even stronger when managers exhibit higher consideration at the same time. As managers have day-to-day responsibilities for leading audit teams, lower consideration could erode team efficacy. As noted, consistency of leadership across two leaders in teamwork support and encouragement to build team efficacy sends a unified message about members' collective belief in their team's ability to accomplish tasks. Yet, when members perceive leader behaviors as sources of team efficacy beliefs, they are attentive not only to consistency between leaders, but also their overall joint leadership. As a result, for team efficacy, we predict a three-way interaction between a manager's consideration behaviors due to the impact of their day-to-day interactions with team members, and the partner's consideration and initiating structure behaviors, expressed by the more powerful and higher status leader. Specifically, we propose that manager consideration moderates the positive effects of both initiating structure and consideration behavior simultaneously exhibited by the partner, such that the effects on team efficacy of both partner leader behaviors are more strongly positive when manager consideration is higher, rather than lower. Based on this, we hypothesize:

> *H4: Partner consideration and initiating structure jointly interact with manager consideration to predict team efficacy, such that the joint effect of the partner's consideration and initiating structure is more likely to result in greater team efficacy when the manager's consideration is higher, rather than lower.*

The Mediating Role of Team Efficacy

As a reaction to dual leaders via taskwork and teamwork behaviors, team efficacy plays a mediating role for two team outcomes, performance and viability (cf. H.-W. Chou, Lin, Chang, & Chuang, 2013; Srivastava, Bartol, & Locke, 2006). We follow IMO models of team effectiveness (Ilgen et al., 2005) that position emergent states, such as collective efficacy, as mediators between team inputs, such as team leadership, and outputs, such as team performance and viability. Team efficacy plays a key role in influencing team success through leadership behaviors of the dual leader structure in audit teams. We argue that in audit teams the interactive effects of both partner's and manager's initiating structure and consideration behaviors work through collective efficacy to ultimately affect audit team performance and viability.

Empirically, meta-analyses show when members perceive team leaders as providing support for taskwork and teamwork, team efficacy rises (Judge et al., 2004). Second, prior research has also consistently demonstrated positive effects of collective efficacy on both team performance and team viability. For example, Gully, Incalcaterra, Joshi, and Beaubien (2002) meta-analysis showed that collective efficacy was positively related to team performance; and, Stajkovic, Lee, and Nyberg (2009) replicated these findings. Quinteiro, Passos, and Curral (2016) found a strong relationship between team collective efficacy and team viability. Third, tangential evidence comes from the empowering leadership literature, which demonstrated that team efficacy mediates the effects of empowering leadership on team outcomes (H.-W. Chou et al., 2013; Srivastava et al., 2006). Based on these arguments and empirical evidence, we propose:

> H5: *Manager consideration moderates the indirect effects of partner leadership behaviors on team outcomes via team efficacy, such that:*

H5a: *The indirect effects of partner initiating structure (H1a) or consideration (H1b) on team performance and team viability via team efficacy will be positive and enhanced as manager consideration (H1a) or initiating structure (H1b) increases.*

H5b: *The indirect effect of partner consideration (H2) on team performance and team viability via team efficacy will be positive and enhanced as manager consideration increases (H2).*

H5c: *The indirect effect of partner consideration (H3) on team performance and team viability via team efficacy will be positive and enhanced as partner initiating structure increases (H3).*

H5d: *The indirect effects of the partner simultaneously exhibiting initiating structure and consideration (H4) on team performance and team viability via team efficacy will be positive and enhanced as manager consideration (H4) increases.*

4.3 Methods

Sample and Procedure

In accordance with our Institutional Review Boards, we recruited participants from the 10 largest audit firms in the Netherlands through the Foundation for Auditing Research. Given our focus on studying dual leadership effects in teams, we chose to select audit engagement teams at each firm. Audit teams typically consist of an audit partner, an audit manager, and audit staff (e.g., assistant managers, senior associates, junior staff) who jointly work on completion of annual financial statement audits of organizations (i.e., clients), reflected in the auditor's opinion included in the clients' audited financial statements. As audit engagements typically last six months to a year and encompass consecutive phases of work in between intervals when teams adjourn, audit teams are "fluid" project teams with members who differ in skills and hierarchical rank (Hollenbeck et al., 2012). Audit team composition differs from client to client,

but members often stay on a specific audit for multiple recurring years. Although the audit engagement partner is ultimately responsible for signing the audit opinion on a client's financial statements (i.e., the main objective of an audit team), the partner and manager jointly lead the team serving the client, often for several years (i.e., dual leader effects).

We collected survey data via two consecutive online surveys, one focused on leadership behaviors and the other on team functioning. To avoid survey fatigue, we distributed surveys over a three- to six-week period completed by partners, managers, and audit staff from a selection of audit teams, sampling among one-third of the audit partners from each of the 10 firms. We selected two teams for each partner that met several criteria, including that the audits involved at least 250 hours of audit work, were from a variety of industries, and consisted of smaller and larger audit clients from listed Public-Interest-Entities (PIE) as well as private companies. Thus, we selected 392 audit teams comprising 2,856 individuals to participate.

Audit team members rated both the partner's and manager's leadership style and the aggregate of observer-ratings, including matched partners and managers, were used to depict how leaders typically behave. We then asked participants to assess the audit teams, and we used the aggregate of all team members' ratings to measure team efficacy. To reduce common source bias and because the partner is the ultimate leader responsible for evaluating team outcomes, we measured team performance and team viability of the target teams through single partner-only-ratings from the team survey. We further reduce concerns about common method bias by using aggregate ratings and interaction terms to analyze moderated leadership effects (Siemsen, Roth, & Oliveira, 2010), not just mediated effects.

Our sampling efforts yielded a total of 2,299 observer responses (from 1,950 unique respondents) assessing leadership styles of 235 partners (1,170 responses, yielding a response rate of 41.0%) and 371 managers (1,129 responses, yielding a response rate of 39.5%); and, 1,287 observer responses of 379 audit teams for the team survey (from 1,075 unique

respondents, yielding a response rate of 45.1%). Because our hypotheses focus on the dual leadership of the partner-manager dyad, those partners and managers included in the study had to have provided matched partner and manager responses of each other and at least two team-specific observer ratings. Our final sample consisted of 93 dual-leader-team combinations, comprising 77 unique partners and 89 unique managers nested within 92 unique teams, for which we received matched partner and manager responses. Complete matched observer-ratings for those 93 dual-leadership teams resulted in 882 responses assessing the leadership style of the 77 partners (493 unique ratings, mean = 6.40 raters) and 89 managers (389 ratings, mean = 4.37), 448 team member ratings of team efficacy for 93 teams (mean = 4.82), and 93 partner-only ratings of team performance and team viability.

Partners had an average age of 46.5 years (SD = 6.4), average functional tenure of 7.6 years (SD = 6.1), and average tenure on the team of 3.0 years (SD = 1.7), and were 17.2 percent female (16 female, 77 males [n = 93]; but only 14 unique females and 63 unique males [n = 77]). Managers had an average age of 42.1 years (SD = 7.6), average functional tenure of 5.2 years (SD = 4.7), and average tenure on the team of 3.2 years (SD = 2.4), and were 22.6 percent female (21 female, 72 male [n = 93]; but only 68 unique males [n = 89]). The partners reported working with the matched managers on average 16.4% of their time over the past year; and the managers with the matched partner 30.4% of their time, reflecting the general hierarchical build-up and fluidity of audit teams.

Measures

We used 5-point, Likert-type scales (1 = strongly disagree, 5 = strongly agree) for all measures. Items were slightly adapted to the audit team context where appropriate to ensure understanding by our participants.

Consideration. In the leadership survey, we asked participants to describe the behavior of their leader by responding to six items adapted from the LBDQ consideration scale (Lambert et al., 2012; Rosen et al., 2019; Stogdill, 1974). Items assessed included: "This leader is concerned for personal welfare, builds mutual trust and collaboration; provides encouragement and support; and emphasizes collaboration" (α = .88; ICC(1) = .15, .23 and ICC(2) = .54, .57 for partners and managers, respectively; $r_{wg(j)}$ = .84 and .82 for partners and managers, respectively).

Initiating Structure. Participants rated leaders' initiating structure behavior using four items based on Rosen et al. (2019) and Lambert et al. (2012), including: "assigns tasks, roles and responsibilities, and coordinates team activities; checks on progress, maintains definitive performance standards" (α = .84; ICC(1) = .16, .22; ICC(2) = .55, .56 for partners and managers, respectively; $r_{wg(j)}$ = .72 and .78 for partners and managers, respectively).

Collective Team Efficacy. In the team survey, participants rated the degree to which team members share a sense of confidence in their team's capacity to mobilize task-specific team competence using five items adapted following Riggs, Warka, Babasa, Betancourt, and Hooker (1994)and used by Chen, Thomas, and Wallace (2005); Hoyt, Murphy, Halverson, and Watson (2003). Example items included: The team "is totally competent and capable of performing all of our audit tasks" and "is confident about its ability to complete the audit successfully" (α = .81; ICC(1) = .17, ICC(2) = .50; $r_{wg(j)}$ = .90).

Team Viability. In the team survey, the partner rated each team's capability to maintain team viability over time. We used the 3-item team viability scale employed by Barrick, Stewart, Neubert, and Mount (1998), and sample items included: "This team should not continue to function as a team" (reverse-scored), and "This team is capable of working together again in the future" (α = .83).

Team Performance. In the team survey, the partner assessed the overall performance of the audit team using Barrick et al.'s (1998) 5-item team performance scale. Sample items included: "This team makes sure that audit services meet or exceed service standards," and "This team completes its tasks on time" ($\alpha = .84$).

Control Variables. To account for possible confounding effects, we controlled for leaders' gender in line with previous research (Barrick et al., 1998). To ensure familiarity with the team and leader being assessed, we measured the dual leaders' familiarity with each other through self-ratings. We broadly considered familiarity, assessing both familiarity and liking. We examined each of these facets separately, but as the results were similar, we report our results using the aggregated 4-item familiarity scale (Barrick, Mount, & Strauss, 1994) including "I believe I know this manager very well professionally" and "I really enjoy working with this person" ($\alpha = .86$).

To test for potential non-independence concerns related to the 77 partners and 89 managers leading the 93 teams, we compared results from a partial team-level OLS regression to a two-level HLM regression analysis with partners as the level 2 grouping variable and team as level 1, and found similar results to those reported below, whether predicting team efficacy or team performance and team viability, after accounting for full mediation. Thus, we found robust results for comparative regression results of partner consideration and partner initiating structure on team performance and team viability, allaying non-independence concerns

4.4 Results

Table 1 presents the descriptive statistics for the study variables. As expected, correlations between the leadership styles and team efficacy, as well as between team efficacy and team performance and team viability are significant and positive.

Table 1: Descriptive Statistics and Correlations (n = 93 teams)

		Mean	SD	1	2	3	4	5	6	7
1	Team Performance	3.96	0.51	**1.00**						
2	Team Viability	4.05	0.56	**0.78**	1.00					
3	Team Efficacy	3.90	0.30	**0.39**	0.55	1.00				
4	Partner Consideration	3.78	0.34	0.21	**0.25**	0.58	1.00			
5	Partner Initiating Structure	3.41	0.42	0.161	**0.272**	0.49	0.684	1.00		
6	Manager Consideration	3.77	0.49	**0.243**	0.274	0.44	0.39	0.35	1.00	
7	Manager Initiating Structure	3.83	0.46	0.23	**0.262**	0.39	0.01	0.236	**0.77**	1.00
	Partner Gender	0.17	0.38	0.04	-0.061	-0.13	-0.123	0.001	-0.121	-0.10
	Manager Gender	0.23	0.42	0.00	**0.03**	0.168	0.126	0.065	0.183	0.10
	Leader's Familiarity with each other	4.08	0.48	**0.31**	**0.26**	**0.31**	**0.395**	**0.285****	**0.365**	0.12

Significant correlations ($p < 0.01$) in **bold.**

We compared a series of nested models through path modeling to test our hypotheses (see Table 2). We gauge model fit by reporting the standardized root mean square residual (SRMR < .10 are acceptable; < .08 are excellent), the Comparative Fit Index (CFI > .90 are acceptable), and chi-square values to test the relative fit of nested models (Mathieu et al., 2019). As shown, adding all direct effects (model 1, SRMR = .097; CFI = .706), and including the mediating variable of team efficacy (model 2, SRMR = .071; CFI = .789), enhanced the fit of the data to the model over the base model with just control variables (SRMR = .180; CFI = .091) or a model with partner-only leadership behaviors (SRMR = .124, CFI = .668). Fit improved further once we accounted for the hypothesized two-way interaction terms between the two leaders combined (i.e., dual) leadership styles (model 4, SRMR = .060; CFI = .892). The fit indicators improved further when the hypothesized three-way combined leadership interaction, including the two-way partner's *single* leadership behavior interaction in the context of this dual leadership structure, was also included (model 5, SRMR = .057, CFI = .905); and, the fit was slightly better than the alternative, non-hypothesized three-way interaction (i.e., manager consideration and initiating structure, along with partner consideration) shown in model 6, tested to thoroughly check the robustness of our findings. Thus, we used path modeling to test our hypotheses and because all our hypotheses were directional and theory-driven, we used one-tailed tests (Pedhazur, 1997). Further, the best fitting model was our model depicting the three-way interaction (model 5), which had a significantly better fit than any other nested model comparison, confirming the importance of these interactions. Thus, we report these path coefficients when examining results.

Table 2: Comparative moderated mediation path models (n = 93 teams)

Variables	Model 1		Model 2			Model 3			Model 4	Model 5	Model 6
	Team Performance	Team Viability	Team Performance	Team Viability	*Team Efficacy*	Team Performance	Team Viability	*Team Efficacy*	*Team Efficacy*		
Leaders' Familiarity with each other	0.278**	0.198	0.246*	0.148	0.088	0.210*	0.101	0.088	0.091	0.091	0.123
Partner Gender	0.07	-0.029	0.102	0.004	-0.059	0.097	0.017	-0.059	-0.063	-0.063	-0.058
Manager Gender	0.026	0.006	0.058	0.055	0.087	0.061	0.066	0.087	0.100	0.097	0.102
Partner Consideration	0.074	0.014	-0.061	-0.194	**0.364****			0.364**	0.367**	0.419**	0.388
Partner Initiating Structure	-0.006	0.168	-0.061	0.082	0.15			0.15	0.118	0.101	0.124
Manager Consideration	-0.043	-0.040	-0.049	-0.049	0.016			0.016	0.174	0.159	0.191
Manager Initiating Structure	0.218	0.22	0.138	0.098	**0.214***			0.214*	0.071	0.100	0.151
Mediation: Team Efficacy			**0.371****	**0.570****		0.349**	0.532**				
Hypothesized 2-way moderated mediations											
Partner Initiating Structure X Manager Consideration (H1a)									0.051	0.092	
Manager Initiating Structure X Partner Consideration (H1b)									**-0.284***		**-0.353***
Partner Consideration X Manager Consideration (H2)									**0.316***	0.107	**0.366***
Partner Consideration X Partner Initiating Structure (H3)										0.230*	
Manager Consideration X Manager Initiating Structure											0.153
Hypothesized 3-way moderated mediations:											
Partner Consideration X Manager Consideration X Partner Initiating Structure (H4)										**-0.313***	
Alternative 3-way moderations tested											
Manager Consideration X Manager Initiating Structure x Partner Consideration											-0.103
SRMR		0.097		0.071			0.076		0.06	0.057	0.059
CFI		0.706		0.789			0.799		0.892	0.905	0.885
Chi-square (CMIN/DF)		78.872		70.724			8.388		5.398	4.784	5.161

** $p < 0.01$, * $p < 0.05$ (one-tailed). Standardized estimates.

In Hypothesis 1a and 1b, we posited a complementary interaction, such that team efficacy only increased significantly for those audit teams led by dual leaders when the partner (or manager) is higher in initiating structure and the manager (or partner) is higher in consideration behaviors aimed at all followers. As shown in our hypothesized model 4, we do not find support for the notion that when the partner is higher in initiating structure, to build higher team efficacy, the manager had to be higher in consideration (H1a, $b = .05$ ns). However, we do find partial support (model 4) for Hypothesis 1b, in that the manager's initiating structure interacts with the partner's consideration behavior (H1b, $b = -.28$, $p < .05$). Although we do find team efficacy is relatively high when a manager exhibits higher levels of initiating structure behavior and the partner exhibits higher levels of consideration behavior at the same time, Figure 7 shows a substitution effect, not just a complementary effect.
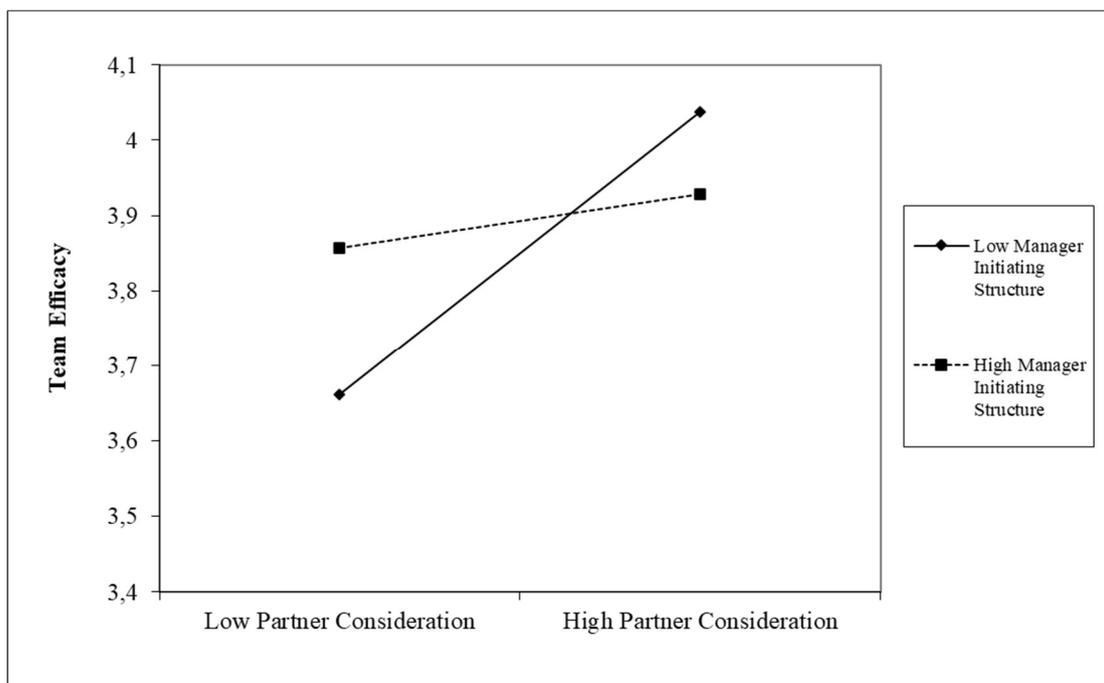

Figure 7: Moderating Effect of Manager Initiating Structure on the Relationship between Partner Consideration and Team Efficacy

The significance of this effect means the highest levels of team efficacy emerge when the partner uses higher levels of consideration behaviors, regardless of whether the manager is higher or lower (simple slope $b = .19$, $p < .01$) in initiating structure. Although the partner's higher use of consideration preserves higher team efficacy in the *absence* of manager's

initiating structure, this is not meaningfully higher team efficacy than what occurs when the partner is high in consideration and the manager is high in initiating structure (as posited in H1b), or when the manager is high in initiating structure, but the partner is low in consideration.

Hypothesis 2 predicted that team efficacy would benefit when both the partner and manager emphasized a supplementary leader style, when both leaders exhibit high consideration. This "power of consideration" is illustrated in Figure 3, based on the hypothesized model 4, when both the partner and manager are high in consideration (H2, b = .32, p < .05), we find the highest levels of team efficacy occur (simple slope b = .20, p < .01), supporting Hypothesis 2. Specifically, Figure 8 also supports these conclusions as when either leader is low in consideration, the level of efficacy attained by the team is appreciably lower, compared to the situation when both leaders are high in consideration. This reveals that when *both* leaders are high in consideration, the result is a significant increase in team efficacy, which ultimately increases key team outcomes.
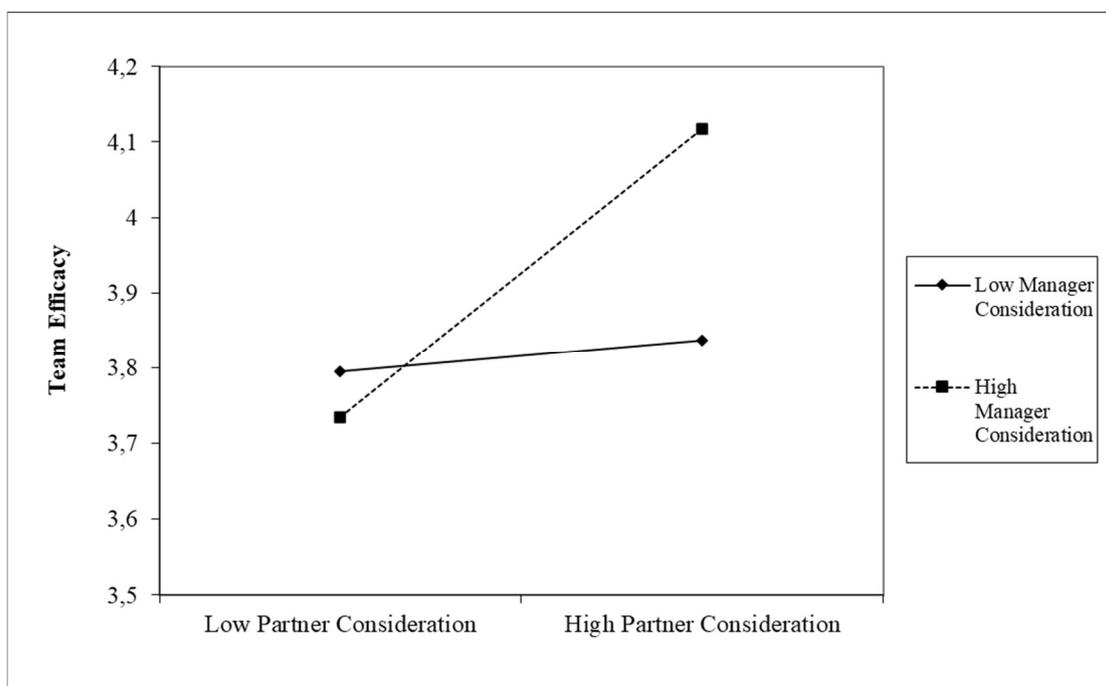

Figure 8: Moderating Effect of Manager Consideration on the Relationship between Partner Consideration and Team Efficacy

For Hypothesis 3, we also examined complementary interaction effects of one leader's behavior in the context of a dual leadership structure, particularly when the higher status partner uses both initiating structure and consideration. Specifically, we consider whether a partner setting both clear goals and roles for their teams (i.e., initiating structure) and exhibiting a high level of support and coaching (i.e., consideration) at the same time would contribute to a healthy level of team efficacy. We tested this hypothesized single-leader interaction in model 5, and we find significant support (H3, $b = .23$, p < .05). This effect is illustrated in Figure 9 and shows that the highest levels of team efficacy occur (simple slope $b = .18$, p < .01) when the partner is higher in both initiating structure and consideration.
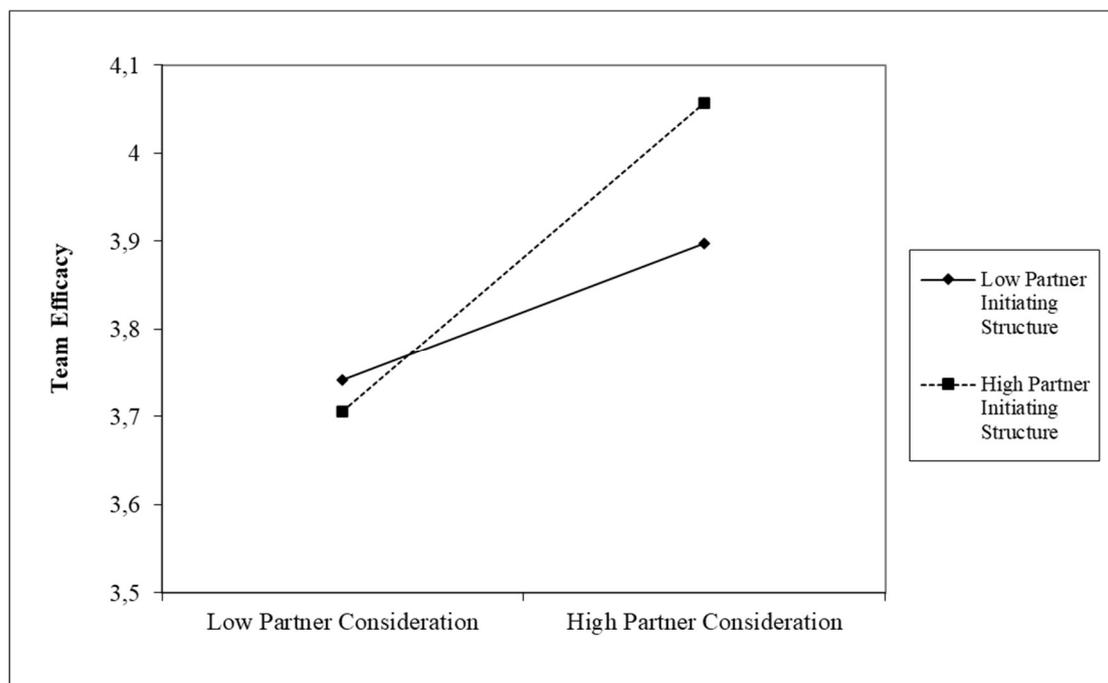
Figure 9: Moderating Effect of Partner Initiating Structure on the Relationship between Partner Consideration and Team Efficacy

Finally, we hypothesized a three-way interaction (H4) positing the partner's and manager's consideration behaviors would interact with the higher hierarchical leader's use of initiating structure, when predicting team efficacy. As hypothesized and shown in model 5, this three-way interaction among leadership behaviors was significant (H4, $b = -.31$, p < .05). Inspecting

Figure 10, we find that when all three leadership behaviors were exhibited by both leaders (i.e., the partner is high in consideration and initiating structure, and the manager is high in consideration), we find the team attains the highest levels of team efficacy (high partner initiating structure, simple slope $b = .17$, p = .01), supporting Hypothesis 4. That is, the effect of the partner's initiating structure behavior, which is expected to create significant pressure by placing task demands on the audit team members, is most effective when *both* leaders are also highly considerate and thereby able to build strong relationships with the followers. This again underscores the importance of consideration behavior in building teamwork efficacy in dual leadership structures.
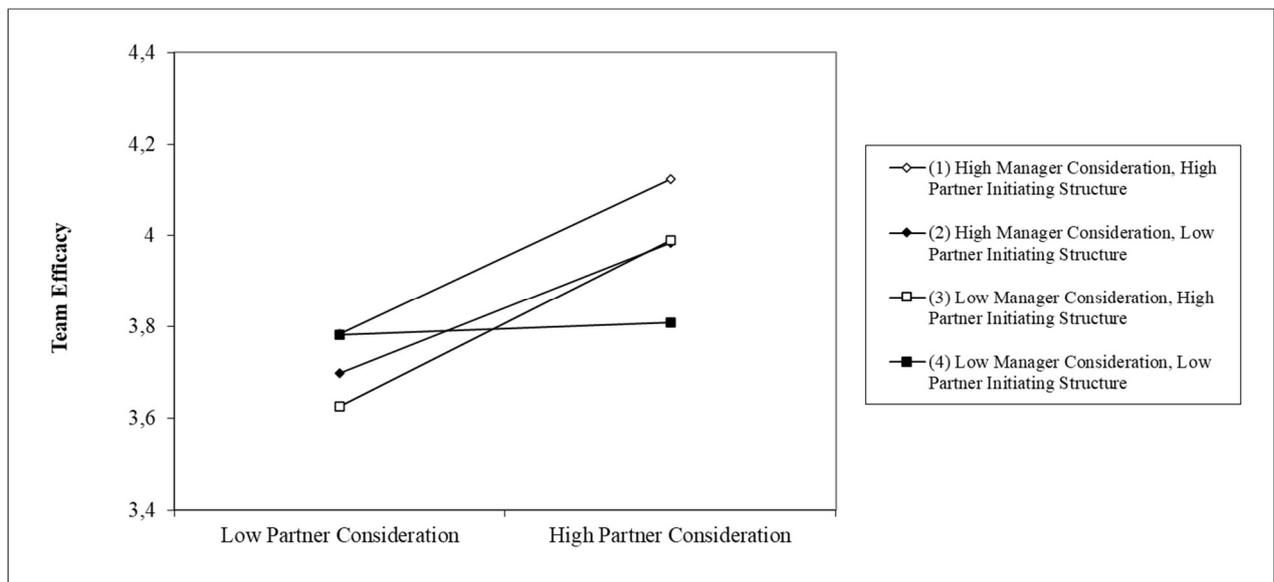
Figure 10: Three-Way Moderating Effect of Manager Consideration and Partner Initiating Structure on the Relationship between Partner Consideration and Team Efficacy

Conditional Indirect Effects (H5a – H5d)

In Hypothesis 5, we examined the mediating role of team efficacy between our leader behaviors in the dual leadership structure and two key team outcomes: team performance and team viability. Results reported in Table 2, model 3, confirmed that team efficacy was strongly and positively related to both team performance ($b = .35$, p < .01) and team viability (b = .53, p < .01). Furthermore, consistent with mediation, our analyses showed relatively modest

correlations between leader behaviors and team performance and team viability (Table 1) and no direct effects of leader behaviors on either team performance or team viability once team efficacy is introduced as mediator in the model (model 2), while direct and interacting leader behaviors do relate to team efficacy (model 3 onwards). Hence, our results show full mediation of team efficacy, in that the interactive effects of manager consideration and both partner's initiating structure and consideration behaviors work through collective team efficacy to ultimately affect team performance and viability.

More importantly, Table 3 reports the conditional indirect effects for the hypothesized interactions. Consistent with the significant interactive effects found for Hypothesis 1, the indirect effect of manager initiating structure interacting with partner use of consideration (H1b) on team performance and viability respectively, as hypothesized in Hypothesis 5a, is significant (b = -.10, 95% CI = [-.262, -.022]; b = -.15, 95% CI = [-.371, -.042]). Yet, the indirect effect of partner initiating structure interacting with manager use of consideration (H1a) on team performance and viability is not (b = .03, 95% CI = [-.053, .184]; b = .05, 95% CI = [-.084, .266]). This means that Hypothesis 5a is only partially supported. Although the interactive effect posited for Hypothesis 2 (in model 4) was significant, we did not find support for the indirect mediational effects proposed in Hypothesis 5b. However, as expected, we did find support for Hypothesis 5c, in that the indirect effect is significant (b = .08, 95% CI = [.017, .197]; b = .12, 95% CI = [.023, .281]), when partner consideration interacts with partner initiating structure (H3) on team performance and viability respectively. Lastly, consistent with the significant three-way interaction effect found in Hypothesis 4, we also find support for the indirect effect of manager consideration interacting with the positive effect of partner's simultaneous initiating structure and consideration behavior on team performance and viability respectively in Hypothesis 5d (b = -.11, 95% CI = [-.331, -.021]; b = -.17, 95% CI = [-.507, -.036]).

Table 3: Conditional indirect interaction effects (n = 93 teams)

Variables	Team Performance				Team Viability			
Moderated mediation:	Indirect Effect	p	Lower Bound	Upper Bound	Indirect Effect	p	Lower Bound	Upper Bound
Partner Initiating Structure X Manager Consideration (H1a / H5a)	0.032	0.23	-0.053	0.184	0.049	0.25	-0.084	0.266
Manager Initiating Structure X Partner Consideration (H1b / H5a)	-0.099	0.01*	-0.262	-0.022	-0.151	0.01*	-0.371	-0.042
Partner Consideration X Manager Consideration (H2 / H5b)	0.037	0.14	-0.027	0.163	0.057	0.15	-0.048	0.215
Partner Consideration X Partner Initiating Structure (H3 / H5c)	0.08	0.02*	0.017	0.197	0.122	0.02*	0.023	0.281
Partner Consideration X Manager Consideration X Partner Initiating Structure (H4 / H5d)	-0.109	0.02*	-0.331	-0.021	-0.166	0.02*	-0.507	-0.036

** $p < 0.01$; * $p < 0.05$ (one-tailed) Estimates based on percentile confidence intervals at 95%.

Robustness Checks

To better understand our findings and to ensure no other practically significant dual leader interactions existed, as shown in model 6, we did not find a significant two-way interaction (b = .14, *ns*) for manager initiating structure and consideration behavior nor did we find a three-way interaction (b = -.10, *ns*) supporting an alternative explanation that initiating structure behavior would have to come from the manager rather than the partner as hypothesized in Hypothesis 4 (i.e., the partner is high in initiating structure and both leaders are high in consideration) in a dual leadership structure wherein both leaders also show consideration behavior. These non-significant findings, coupled with the significant effect found for Hypothesis 4, shows that the higher-status partner's use of initiating structure is more impactful than the manager's use of initiating structure when building team efficacy, as we posited for Hypothesis 3. We also note the alternative explanation examined in model 6 does provide support for the hypothesized two-way interactions in Hypotheses 1b and 2 as previously reported in model 4. In contrast, after accounting for the partner's leadership behaviors (i.e., high in both consideration and initiating structure), these two hypotheses are not significant as shown in model 5, indicating that the single-leader combination of both high consideration and initiating structure behaviors when provided by the partner can significantly increase team efficacy. Finally, it should be noted that model 6 also does not find support for a significant supplementary interaction when solely examining partner and manager initiating structure leader behavior (b = .02, ns, untabulated). Thus, when the dual leadership solely relies on high initiating structure, we do not find evidence of greater team efficacy, as expected consistent with functional leadership theory.

4.5 Discussion

Modern day teaming arrangements in organizations are more complex than those of the past. One key feature of today's teams is that they are often led by two different leaders resulting in what are known as dual team leadership structures. Although over 30 years of research on team leadership has led to a convergence around the effects of single team leaders on team outcomes, little research exists for dual leader structures. Problematically, this has left scholars and practitioners in the dark as to whether the findings from single team leadership studies can be applied to teams with dual leadership structures. As our findings indicate, there are important differences, along with similarities, in the functional effects of initiating structure and consideration behaviors by leaders in dual, instead of single, team leadership structures.

Using functional leadership theory as an overarching theoretical framework to understand the effects of partner and manager leaders' initiating structure and consideration behaviors in a dual leadership audit team context, we found support for both complementary and supplementary rationales for dual leadership interaction effects. First, we found that when at least one leader exhibits high initiating structure, the highest levels of team efficacy occur when the other leader exhibits high consideration (i.e., a complementary effect). These results functionally suggest that the consideration behavior by one leader enables team members to accept and follow the strong directive and demanding aspects of taskwork structure initiated by the other leader. This shows the importance of accounting for interactive, not just main, effects in the leadership styles of the two leaders in dual leadership structures, which is currently missing in contemporary research.

Second, given our focus on team efficacy as our proximal team outcome, we also found that when both leaders build teamwork by exhibiting high levels of consideration, team efficacy is also strengthened via a supplementary effect. Consistent with our theorizing, we did not find this same functional supplemental effect for initiating structure. Across results, we consistently

find evidence for the "power of consideration" leadership behaviors in that team efficacy is preserved with the partner's higher use of consideration, even in the *absence* of initiating structure behavior by either the manager or partner, and is increased when *both* leaders are high in consideration. Thus, as expected, teams benefit by building team efficacy when one or both leaders are high in consideration and able to establish strong bonds with team members.

Third, given that partners have higher status and influence than managers in audit teams, due to their externally-oriented focus and greater hierarchical authority, we also found a partner high in initiating structure or demanding taskwork was able to enhance team efficacy when that partner was also high in consideration, suggesting a "partner as super leader" effect. Prior meta-analyses (Burke et al., 2006; Judge et. al., 2004) reveal that initiating structure and consideration leadership behaviors by a single leader would significantly relate to higher team efficacy, as well as team performance and team viability. In dual leadership structures, we find this is particularly relevant for the leader that has the responsibility for signing off on the audit at the end. Yet, we also find that because the manager, as the internally-oriented team leader, is responsible for day-to-day performance and team functioning, a team gains when the manager also exhibits higher consideration. We thus demonstrate the "power of consideration," and to a lesser extent "partner as super leader," in a dual team leadership structure.

Finally, we found that team efficacy mediated some of the effects of the dual leadership interactions on the distal team outcomes of team performance and viability. Thus, our research supports prior findings that collective beliefs of member efficacy are the foundation of agency in a team (Bandura, 1997; Gibson et al., 2000). These findings show that unless members of a team believe that they can produce successful performance by their collective actions, they have little incentive to continue performing if they encounter difficulties or continue to function as a viable team on current or future audits. Next, we discuss theoretical and managerial implications, followed by limitations and directions for future research.

Theoretical Implications

Our findings have several important implications for team leadership research. First, we extend classic research on dual leadership structures in matrix organizations, which focused primarily on the "dual-boss" conflict that often existed between functional and project leaders in these structures, as the two leader types pursued different objectives. This research found that employees in matrix organizations frequently reported being pulled in different directions, and thus primarily focused on how to overcome this "dual-boss" conflict and reconcile competing goals being promoted by these leaders (Dunne et al., 1978).

In contrast, our audit team context allowed us to examine the effects of two leaders having the same objective: to oversee successful audit team performance and team viability by satisfying clients while generating a financial audit statement. Thus, a substantive theoretical contribution of our study is to apply functional leadership theory to establish why positive taskwork and teamwork leadership behaviors from two unique leaders with different levels of authority, who must share leadership responsibility while being jointly held accountable for team outcomes, combine to improve team performance and team viability via enhanced team efficacy. Clearly understanding how leader behavior-team outcome relationships occur in dual leadership structures can provide actionable guidance on ways two leaders' leadership approaches can work together effectively to positively influence team members' experiences of collective efficacy. Thus, we extend prior research that almost exclusively examined the dual-boss conflicts inherent in matrix dual leadership structures to show that leadership emanating from two functioning leaders can have positive synergistic effects on team outcomes.

Second, we extend the seminal research that has been conducted on initiating structure and consideration behaviors in organizations. To our knowledge, almost all existing research on these two leadership behaviors has been conducted in only single team leadership contexts and

showed that both leadership behaviors are uniquely and positively related to important team outcomes, such as team productivity and effectiveness (Burke et al., 2006). What was not known to date is what effects initiating structure and consideration when conducted by two different leaders have on team outcomes when they are jointly directed at building team efficacy.

A key question we raised is whether team success is maximized when the two leaders exhibit different leadership behaviors simultaneously (i.e., a complementary approach) or when they both exhibit one leadership behavior at the same time (i.e., a supplementary approach). We found that when both leaders were highly considerate and the high-status leader (i.e., the partner) exhibited high taskwork in addition to high teamwork behaviors, team efficacy had the greatest gain. Thus, we found support for a complementary approach, especially when the high-status leader exhibits both taskwork and teamwork leadership behaviors, revealing the "partner as super leader," while also consistently finding a supplementary approach with high consideration leadership behaviors from both leaders, which underscores the "power of consideration."

Turning to the complementary perspective, we found that team efficacy (and, ultimately, team performance and viability) is maximized when the high status, more powerful leader (i.e., audit partner) exhibits a high level of initiating structure and a high level of consideration. This finding supports existing research primarily conducted in the 1970s (e.g., Cummins, 1971, 1972) on single team leadership that showed that individual and team outcomes are enhanced by effective leaders, as we find similar results but now in a dual leadership structure when the leader with hierarchical authority (i.e., the partner) exhibits high levels of both types of leadership (i.e., "partner as super leader"). This finding also supports research conducted in the 1960s and 1970s that showed a functional interaction between these two leader behaviors, such that consideration behaviors are critical for demanding, task-oriented leaders. However, we

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depart from this seminal research by also demonstrating that team success is not necessarily dependent on just one leader exhibiting high levels of both behaviors. That is, we also found complementary effects across two leaders, such that one type of leadership can be enacted by one leader while the other type can be exhibited by another leader. And, importantly, we demonstrated that the source of the leadership did not matter; that is, initiating structure and consideration can come from either leader, if there are high levels of both behaviors being exhibited within the dual leadership structure. These findings break new ground by extending prior findings about the role of initiating structure and consideration to dual leadership structures.

We also found support for a supplementary approach in that our findings showed that when both the partner and manager exhibited high levels of consideration behavior, team efficacy was significantly enhanced. This is a clear departure from existing research on consideration behavior because single team leadership studies clearly could not have demonstrated this effect. To our knowledge, we are the first to show this "power of consideration" effect in a dual leadership structure, meaning that team members will respond more positively when there are multiple sources of consideration behavior aimed at them. As we argued, building up a team's sense of collective efficacy is closely tied to the consideration behaviors of coaching, demonstrating support, and displaying encouragement to teams. Thus, in contrast to much of the earlier single team leadership research that showed initiating structure was more important for team success, we depart from that logic and findings to show that functionally it is teamwork and consideration alone, and not taskwork or initiating structure, that is critical for team efficacy to thrive. These findings underscore the necessity of examining the joint influence of both leaders, as accounting for just the "supervisor" (i.e., the manager) does not show a significant main effect for the manager's initiating structure behavior in many of our models. Only after we consider the total leadership capability of the team (Morgeson et al.,

2010), do we fully realize the importance of consideration behaviors. Clearly, consistency in consideration behaviors in dual leadership structures matters, as does the more powerful leader's behavior, specifically the partner's teamwork and taskwork behavior directed towards the team.

Finally, our study has implications for the overarching theory we used to develop our theoretical model – functional leadership theory. Morgeson et al. (2010) applied functional leadership theory as a lens to critique existing team leadership research. One key limitation they identified, and that served as an impetus for our research, is that almost all existing team leadership research examined single sources of leadership. As a result, prior research often has underestimated the total leadership capacity of teams and, problematically, left the field with little understanding about how different sources of leadership "interact in a dynamic way" (Morgeson et al., 2010: 28). We took this critique to heart in designing our study to be able to directly examine how different hierarchical sources of leadership in an audit team context influence team efficacy and, ultimately, team performance and viability.

Another specific area Morgeson et al. (2010) pointed to in need of theoretical and empirical investigation is to incorporate how both externally-focused and internally-focused leaders work together to influence critical team outcomes. Our audit team context provided fertile ground for just such an investigation, as we incorporated the influence of both externally-focused partner leaders and internally-focused manager leaders on audit team outcomes. Such investigations of leadership sources coming from both outside and inside teams are rare, and we answer Morgeson et al.'s call (2010) to investigate a broader set of leadership sources in teams. In doing so, we extend prior research that only examined either externally-focused (e.g., sponsor, coach) or internally-focused (e.g., team leader, supervisor) team leadership, by demonstrating that team outcomes can be enhanced by a dynamic interplay between both external and internal leaders' leadership behaviors simultaneously. We also find evidence that

the external leader may be somewhat more influential, as shown by our "partner as super leader" effects. By incorporating both sources, we move closer to capturing Morgeson et al.'s (2010) conception of the total leadership capacity for teams.

Managerial Implications

Because so many of today's teams are led by more than one team leader, our findings have actionable recommendations for organizations using dual team leadership structures. First, organizations should ensure that both initiating structure and consideration receive strong emphasis by dual team leaders, with audit partners (in our setting) directing action by applying initiating structure and both leaders (partners and mangers in our setting) exhibiting consideration behaviors. That is, it takes two to "make a team go right." Leaders can be trained on both types of leadership behaviors, and they should coordinate their actions in such a way as to complement each other.

Second, to take fruit of the "power of consideration" we found, organizations should ensure that both leaders exhibit high levels of consideration behaviors, particularly when attempting to build up team member convictions of team efficacy. Unlike initiating structure behaviors, when two leaders both emphasize consideration, they send a powerful and consistent message to their teams that members should have the confidence to tackle their challenges and performance issues head-on. Like our context of audit teams, which experience dynamic membership changes over time, building up team efficacy through consistent consideration behaviors is particularly critical for teams that have fluid and ever-changing membership, and whose work is episodic, starting and stopping multiple times during phases of the audit taskwork.

Finally, in team structures that have leaders with higher hierarchical responsibilities that are externally-oriented and team leaders that are internally-oriented with more day-to-day team

involvement, our "partner as super leader" findings support organizational efforts to ensure that the externally-oriented partner leaders exhibit both initiating structure and consideration behaviors, while the internally-oriented managers use more consideration. Our findings could be particularly surprising, as audit partners often do not have much to do with audit team employees below the manager level, as they typically choose to focus on external client relations. Yet, our results reveal that the audit team's leader (partners) need to be more collaborative in nature and, hence, that partners along with the managers both need to be fully engaged with leading the audit team. The importance of both leaders is shown through the three-way combination of "the power of consideration" coupled with the "partner as super leader" leadership behaviors, that resulted in the highest levels of team efficacy and, ultimately, greater team performance and viability.

Limitations and Future Research

Notwithstanding our main theoretical and managerial contributions, as with all research, ours is not without limitations, which can provide fruitful avenues for future research. First, although we collected our data through two consecutive surveys and used distinct sources of data (i.e., collaborators, team members, and partners), considered leadership by two different leaders, and examined interactions between these leadership behaviors to reduce common method bias, we were not able to unequivocally demonstrate causation. We did rely on the commonly used IMO framework of team effectiveness to justify the positioning of constructs in our theoretical model. However, we do recommend that future research use experimental designs to support the causal nature of the dual leadership behavior variables on our mediator, team efficacy.

Second, as we collected our data in the specific team context of audit engagement teams, questions of generalizability could arise (e.g., as theorized, the greater importance of

consideration over initiating structure, while not unimportant, may be due to the specific "fluid" nature of an audit team in combination with the standardized structuredness of an audit). However, we do note that dual team leadership structures are used in a wide variety of industries and contexts, and so our expectation is that the audit engagement team context does represent a common approach to team leadership functioning and is similar to other knowledge intensive teams in which leaders interact and collaborate towards a common goal. We do encourage future researchers to examine other dual team leadership contexts to replicate and extend our findings.

Third, although team efficacy is a widely examined construct illustrating agency and motivation in the team science literature (Tasa et al., 2007), particularly as a mediator of leadership and other team input effects, there are other theoretically plausible choices for team mediating mechanisms between leadership and team performance and viability (e.g., team trust, empowerment, cohesion, psychological safety). We encourage future researchers to expand the nomological network of mediators of dual team leadership effects on team outcomes. Similarly, we included only team performance and viability as team outcomes largely because they capture both current and future success, yet we encourage researchers to examine a wider array of team outputs (e.g., proactivity, satisfaction, customer service). Also, we focused exclusively on initiating structure and consideration as our two leadership behaviors. Despite their close theoretical alignment with the two primary team needs of taskwork and teamwork, there are other functional leadership behaviors (e.g., authentic, empowering, transformational, transactional leadership) that could conceivably influence team efficacy and other team mediators and outcomes, and we encourage future researchers to examine these possibilities.

Finally, although we did examine and found moderation effects in terms of leadership behaviors emanating from different leaders, including a complex three-way interaction effect,

while controlling for team familiarity with the leaders, there could be contextual or situational moderators potentially influencing the effect of these leader behavior interactions on team outcomes. For example, the effects of initiating structure and consideration could be influenced by aspects of organizational structure, such as more mechanistic or organic arrangements. Similarly, aspects of organizational culture, such as tight vs. loose cultures, could also play a role. We urge future researchers to explore the moderating role of the organizational context.

Conclusion

Today's complex teaming arrangements in organizations call for comprehensive examinations of team leadership (Morgeson et al., 2010). In particular, the prevalence of dual team leadership structures has increased without corresponding attention to how and why leadership behaviors from two sources affect team outcomes. Our research demonstrated that dual leadership structures have similarities with single team leadership structures but, perhaps more importantly, key differences. We hope that our findings will inform and motivate additional research and managerial practices on how two unique team leaders can effectively drive team efficacy and, ultimately, team performance and viability. Only in this way can we continue to "ensure that we are capturing and embracing the complexities of current team arrangements and seeking to better understand them rather than to fit them into our current frameworks" (Mathieu, Maynard, Rapp, & Gilson, 2008, p. 463).

Chapter 5 : Conclusion

5.1 Summary of Main Findings

Audit quality is influenced by several factors, including the skills, values, and attitudes of the individuals conducting the audit, which are referred to as input factors in the IAASB's Framework for Audit Quality. Despite their significance, our comprehension of what occurs within the audit firm and the audit team is limited. Academic research often refers to this lack of insights into the firm as the "black box" of auditing. This dissertation strives to provide new insights into this black box by exploring the following question: "What makes audit partners, managers, and their teams successful?" Through this investigation, this dissertation aims to enhance our understanding of audit teams and their leaders and contribute to the broader conversation on audit quality.

The first study, presented in Chapter 2, focuses on investigating how the personality traits of audit partners and managers are related to their job performance, both directly and indirectly, through different skills. I use a survey instrument to gather data on auditors' personality traits, which includes measures on the 'Big Five' traits, the Dark Triad, and bravery, and their self-assessed commercial, technical, and leadership skills. I rely on the audit firms' internal performance assessment as an external measure of performance. The final sample includes over 1,600 audit partners and managers from ten audit firms in the Netherlands. In a first descriptive analysis, I compare personality traits between Big 4 and non-Big 4 firms and across different function levels. I find significant differences in personality profiles between the two groups of audit firms, where Big 4 auditors are on average more extroverted, conscientious, and open, and score lower on the Dark Triad than their non-Big 4 counterparts. In addition, the comparison across the different function levels reveals that the variation in personality traits decreases significantly among the higher function levels. In the second part of the study, I explore the relationships between personality, the three distinct skills, and job performance. The tension between the professional and commercial aspects of auditing appears to be

reflected in the personality traits that benefit the commercial and technical skills. Furthermore, the results suggest that the leadership skill is only significantly associated with the job performance evaluation of partners, which runs counter to the emphasis placed on this skill in audit firms' competency frameworks. Overall, these results shed light on the complex relationships between personality traits, skills, and job performance in the auditing profession.

While the first study focuses on individual performance of audit partners and managers, the second study, presented in Chapter 3, recognizes that the partner and manager ultimately function as a dyad when jointly leading the engagement. Two fundamental questions guide this investigation: how are partners and managers selected and matched, and how does the dyadic fit between partner and manager influence team dynamics? To answer these questions, I rely on data from 221 engagement teams and their leaders. The results of a counterfactual analysis reveal that partners and managers who form a dyad are, on average, more similar in terms of their working style, as captured by their technical and commercial skills and leadership behavior than partners and managers who do not form a dyad. This finding is in line with homophily theory, which posits that individuals are more likely to form relationships with others who are similar to themselves. The second part of this study investigates the consequences of the similarity between partners and managers on the functioning of the team, specifically on team identity, team commitment, psychological safety, and ultimately performance. I find that only when the partner and manager are both highly skilled and demonstrate strong leadership does the similarity result in a better functioning team. However, the good news is that one strong manager (partner) can compensate for a weak partner (manager). Overall, this study enhances our understanding of audit team leadership and is among the first studies to consider the joint role of the engagement partner and manager in shaping team dynamics.

Chapter 4 of this dissertation presents the third study, which similarly focuses on the partner-manager dyad. This study examines the effects of the partner and manager simultaneously exhibiting two key leadership behaviors, initiation structure and consideration, on team efficacy, team performance, and viability using data from 93 teams. As coordination is required between the leaders in a dual-leadership structure, it is not clear ex ante which combination of leadership behaviors results in the highest team efficacy, and ultimately performance and viability. The results provide support for both complementary and supplementary rationales. When one leader exhibits high initiating structure, higher levels of team efficacy occur when at least the other leader exhibits high consideration, indicating a complementary effect. Furthermore, team efficacy is further strengthened when both leaders are high on consideration, indicating a supplementary effect. The highest level of team efficacy and performance occurs when the audit partner is a 'super-leader', i.e., exhibiting high initiating structure and consideration behavior, combined with a manager who exhibits high consideration rather than initiating structure. Overall, the results point towards consideration being more critical for building team efficacy and performance in dual leadership structures. Notably, single-leader studies are unable to account for these effects, making this study an important contribution to our understanding of team leadership in modern day teams, where leadership often originates from multiple sources.

5.2 Contribution and Implications

Overall, this dissertation makes contributions to the literature by providing novel insights into audit teams and their leaders. I believe each study adds a puzzle piece to our understanding of different factors that influence the functioning of the engagement team. This is an important area of research that is largely understudied due to the difficulty of accessing auditors and their data. Through a research grant from the Foundation for Auditing Research, I obtained access

to audit partners, managers, and their teams from ten audit firms in the Netherlands. I constructed an extensive and proprietary data set using data from three different surveys and internal data from the firms. This remarkable data set allowed me to answer questions that would have been challenging to study with archival or experimental methods. The contribution of each study is discussed in detail in the respective chapters. I reiterate the important points here and focus my discussion on the implications for practice.

The first study, presented in Chapter 2, adds to the growing literature on auditor personal characteristics. The study utilizes a direct measure of personality based on a survey, in combination with the audit firm's internal assessment of job performance to investigate how personality traits influence the job performance of audit partners and managers. Several significant findings emerge from this study that have important implications for audit firms. Firstly, the comparison of personality profiles across different function levels indicates that auditors become increasingly homogeneous at higher levels in the hierarchy. This is contrary to the firms' stated objectives of increasing diversity, which they define to include more than a fair gender split or ethnicity. It appears that the firms might not be aware that their performance assessment system tends to favor individuals with a specific personality profile. Secondly, the study reveals that the inherent tension between the professional and commercial aspects of auditing is mirrored in the personality traits that benefit each of the two skills. Audit firms ultimately need both for sustained success and must find a way to balance them effectively. Thirdly, it is important to note that the findings show the relationship between personality and performance as it is, not as it *should* be. Thus, the implication of the findings is not that audit firms should only recruit individuals with specific characteristics, but that audit firms should consider personality in their human resource practices. For example, the analysis suggests that while higher levels of agreeableness are positively associated with leadership skills, agreeableness is also negatively associated with job performance and technical skills. A

possible explanation for the negative relationship between agreeableness and performance is that agreeable individuals may be less comfortable with seeking out conflict and discussions, which is often necessary for example when negotiating possible adjustments with the client. This suggests that more targeted negotiation training could be useful for more agreeable auditors. This example illustrates a key implication for audit firms who typically follow a one-size-fits-all approach to training which might be disadvantageous given the variation in personalities and associated inherent abilities of the auditors.

The second study in this dissertation, Chapter 3, is among the first studies in the auditing literature that examines the joint role of the audit partner and engagement manager in leading the audit team. Specifically, I examine how the audit partner-manager dyad is formed and how this match influences the functioning of the engagement team. Using data from 227 audit engagement teams, I find that 68% of all engagement partners indicated that they selected the engagement partner themselves, rather than having the audit firm assign the engagement manager. This finding has important implications for audit firms, as they must understand the potential consequences of granting this choice. The findings suggest that while dyads are generally similar in terms of their working style, this similarity is not always beneficial for the team. However, the study also reveals that compensating for a weaker leader is possible. The analyses also highlight that some of the partner-manager dyads in which both have below-average skills on all three dimensions are working on high-risk clients, as captured by the risk of material misstatement. Given these findings, one potential implication for audit firms is to be more actively involved in the assignment of dyads. While it may be the case that partners and managers prefer to work together, this does not necessarily translate into better team functioning. By taking a more proactive approach to the selection and assignment of dyads, audit firms can help ensure that audit teams and their leaders are better equipped to address the specific challenges presented by each engagement.

Building on the empirical findings presented in Chapter 3, the third study featured in Chapter 4, delves into two distinct leadership behaviors, namely initiating structure and consideration, and investigates how the interaction of these behaviors originating from two leaders impacts team performance. Prior research has underscored the importance of these leadership behaviors in satisfying team needs, and this study reaffirms their importance in the context of audit teams. Leaders can receive training in both types of leadership behaviors, which can complement the technical training that auditors commonly receive.

Traditionally, audit partner's role typically involves external engagement with the client, with limited direct interaction with the audit team members below the manager level. However, our results indicate that when the partner actively engages with the team and promotes their well-being, the team's performance improves. This underscores the importance of both the audit partner and the manager fully engaging with leading the audit team, rather than the partner being solely externally focused. This finding supports recent initiatives (e.g., PCAOB (2015) or by the 'Quatermasters' in the Netherlands (2022)) that formulate different audit quality indicators, one of which is the actual involvement of the audit partner and manager.[39]

In summary, firms (and regulators) predominantly focus on the role of the engagement partner for the supervision of the team, but the findings of this dissertation, in particular Chapter 3 and 4, provide evidence that it is both the partner and the engagement manager who play a critical role in managing and leading the team.

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[39] For example, the PCAOB describes three indicators that capture the involvement of the partner and manager in their "Concept Release on Audit Quality Indicators" (2015): (a) Ratio of audit partners' chargeable hours for the engagement to chargeable hours of all other engagement personnel, (b) ratio of audit partners' chargeable hours for the engagement to chargeable hours of audit managers' on the engagement, and (c) ratio of audit managers' chargeable hours for the engagement to chargeable hours of all staff below manager on the engagement.

5.3 Limitations and Directions for Future Research

As with any study, this dissertation is subject to certain limitations, which are also discussed in each of the chapters. In this section, I briefly highlight the common limitations of each study, and how future research can address these limitations and expand on the findings of this dissertation.

All studies in this dissertation rely on survey data, which offers the advantage of collecting information that is not available from publicly accessible sources. Additionally, surveys permit exploration of team functioning and interactions between partners and managers, which are difficult to capture in an experimental setting. Despite our best efforts in carefully designing the survey instruments and relying on theory from the psychology and organizational behavior literature, the nature of the research methodology has two key shortcomings. First, possible issues related to measurement error and survey bias cannot fully be ruled out and second, the studies provide evidence of associations and not causal inferences.

Additionally, an implicit assumption underlying all studies is that higher individual performance and better functioning teams lead to better quality at the engagement-level. While this seems plausible, validating this assumption is an important avenue for future research. Furthermore, the audit team composition is considered a given in the second and third study. Therefore, I cannot speak to how, for example, the diversity of personalities and skills within the audit team influences team success.

Lastly, the data used in all studies are collected exclusively from audit firms located in the Netherlands. Even though the majority of the firms are part of a global network, using data from one count naturally raises questions about the generalizability of the findings to other settings. As audit teams operate in the context of an audit firm and certain regulatory environments, which is also recognized in the IAASB's framework (2014) discussed in the

dissertation's introduction, future research could explore how organizational culture or national culture, among other factors, affects the team and its leaders.

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Impact Paragraph

The functioning of our capital markets and the efficient allocation of resources is crucial for economic growth and innovation, which ultimately benefits society as a whole. Auditors play a vital role in this process by providing independent assurance on the accuracy and reliability of financial information disclosed by companies. However, in order to fulfill this role, investors need to trust the audit profession to provide high-quality audits. The quality of audits, and often the lack thereof, is a frequent topic in regulatory debates and news outlets. Even though audit firms have implemented strict quality control processes, archival audit research provides evidence that engagement quality varies significantly across individual audit partners within a firm. This suggests that the systems are ineffective in reducing the impact of inherent differences in auditor characteristics. Thus, to achieve consistent high-quality audits, audit firms need a better understanding of what makes some auditors and audit teams perform better than others. In close collaboration with the ten leading audit firms in the Netherlands, this dissertation provides novel insights into the functioning of audit teams and their leaders, with the ultimate goal of helping the audit firms in their mission to achieve consistent audit quality.

In particular, the first study (Chapter 2) provides a comprehensive analysis of how audit managers' and partners' personality traits relate to different skills, and ultimately their job performance, for which audit quality delivered at the engagement level is a key performance evaluation criterion. Several findings of this study are relevant to audit firms and their human resource practices, such as performance evaluation and training. All audit firms state that they wish to increase diversity across all function levels, yet the study highlights that their current performance evaluation systems seem to favor individuals with a specific personality profile, as shown by a significant decrease in variation in personality traits in the higher function levels. In addition, the analysis suggests that leadership skills are only related to the performance

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assessment of the partners, even though the audit firms aim to develop this skill already for managers. These descriptive findings can potentially help audit firms to reassess their current performance evaluation systems.

Chapters 3 and 4 in turn focus on the audit partner's and manager's joint role in leading the engagement team. In Chapter 3, I specifically focus on the dyad formation and document that 68% of the partners in our study are given the choice of selecting the engagement manager themselves. By examining how different partner-manager combinations relate to elements of team functioning, I help audit firms understand the consequences of granting this choice. Chapter 4 investigates two different leadership behaviors from the dyad and answers under which combination of leadership behaviors the engagement team performs best. The results have implications for both the staffing of the engagements and potential leadership training programs. In particular, the study highlights that at least one of the two leaders should exhibit high levels of consideration. While traditionally this was often viewed to be the responsibility of the manager as the leader who is more involved in the daily supervision, team performance is heightened when the partner equally exhibits consideration leadership (and not just initiating structure). Audit firms can complement their technical training with specific leadership training and encourage their audit partners to be more involved with the team and to care for their well-being and mentoring.

Overall, the findings of this dissertation provide audit firms with new insights into audit teams and their leaders, which can be used to improve audit team functioning.

Nederlandse Samenvatting (Dutch Summary)

De kwaliteit van accountantscontroles wordt beïnvloed door verschillende factoren, waaronder de vaardigheden, waarden en attitudes van de personen die de accountantscontrole (audit) uitvoeren. In het IAASB-kader voor de kwaliteit van de audit wordt deze groep 'inputfactoren' genoemd. Ondanks hoe belangrijk deze personen zijn, is ons begrip van wat er binnen het accountantskantoor en het controleteam gebeurt, beperkt. Academisch onderzoek noemt dit gebrek aan inzicht in het kantoor vaak de "zwarte doos" van de accountantscontrole. Dit proefschrift tracht nieuwe inzichten te verschaffen in deze zwarte doos door de volgende vraag te onderzoeken: "Wat maakt auditpartners, managers en hun teams succesvol?" Met dit onderzoek wil dit proefschrift ons begrip van auditteams en hun leiders vergroten en bijdragen aan de bredere discussie over auditkwaliteit.

De eerste studie, gepresenteerd in hoofdstuk 2, richt zich op het onderzoeken hoe persoonlijkheidskenmerken van auditpartners en managers invloed hebben op hun werkprestaties, zowel direct als indirect, via verschillende vaardigheden. Ik gebruik een enquête om gegevens te verzamelen over de persoonlijkheidskenmerken van auditors, waaronder maatstaven voor de 'Big Five', de Dark Triad en moed, en hun zelf ingeschatte commerciële, technische en leiderschapsvaardigheden. Ik baseer me op de interne prestatiebeoordeling van de accountantskantoren als externe prestatiemaatstaf. De uiteindelijke steekproef omvat meer dan 1,600 auditpartners en managers van tien accountantskantoren in Nederland. In een eerste beschrijvende analyse vergelijk ik persoonlijkheidskenmerken tussen Big 4- en niet-Big 4-kantoren en tussen verschillende functieniveaus. Ik vind significante verschillen in persoonlijkheidsprofielen tussen de twee groepen accountantskantoren, waarbij Big 4-accountants gemiddeld extraverter, zorgvuldiger en opener zijn en lager scoren op de Dark Triad kenmerken dan hun niet-Big 4-tegenhangers. Bovendien blijkt uit de vergelijking tussen de verschillende functieniveaus dat de variatie in persoonlijkheidskenmerken significant

afneemt bij de hogere functieniveaus. In het tweede deel van de studie onderzoek ik de relaties tussen persoonlijkheid, de drie verschillende vaardigheden en arbeidsprestaties. De spanning tussen de professionele en commerciële aspecten van auditing blijkt tot uiting te komen in de persoonlijkheidskenmerken die de commerciële en technische vaardigheden ten goede komen. Voorts blijkt uit de resultaten dat de vaardigheid leiderschap alleen significant samenhangt met de beoordeling van de werkprestaties van partners, hetgeen indruist tegen de nadruk die in de competentieraamwerken van accountantskantoren op deze vaardigheid wordt gelegd. Al met al werpen deze resultaten licht op de complexe relaties tussen persoonlijkheidskenmerken, vaardigheden en werkprestaties in het accountantsberoep.

Terwijl de eerste studie zich richt op individuele prestaties van auditpartners en managers, erkent de tweede studie, gepresenteerd in hoofdstuk 3, dat de partner en manager uiteindelijk als een dyade functioneren bij het gezamenlijk leiden van de opdracht. Twee fundamentele vragen leiden dit onderzoek: hoe worden partners en managers geselecteerd en gematcht, en hoe beïnvloedt de fit tussen partner en manager de teamdynamiek? Om deze vragen te beantwoorden, baseer ik me op gegevens van 221 opdrachtteams en hun leiders. De resultaten laten zien dat partners en managers die een dyade vormen, gemiddeld meer op elkaar lijken wat betreft hun werkstijl, uitgedrukt in technische en commerciële vaardigheden en leiderschapsgedrag, dan partners en managers die geen dyade vormen. Deze bevinding strookt met de 'homophily'-theorie, die stelt dat individuen eerder geneigd zijn relaties aan te gaan met anderen die op henzelf lijken. Het tweede deel van deze studie onderzoekt de gevolgen van de gelijkenis tussen partners en managers op het functioneren van het team, specifiek op teamidentiteit, teambetrokkenheid, psychologische veiligheid, en uiteindelijk prestaties. Ik vind dat alleen wanneer de partner en de manager beiden zeer bekwaam zijn en sterk leiderschap tonen, de gelijkenis resulteert in een beter functionerend team. Het goede nieuws is echter dat een sterke manager (partner) voor een zwakke partner (manager) kan

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compenseren. Al met al vergroot deze studie ons inzicht in het leiderschap van auditteams en behoort zij tot de eerste studies waarin de gezamenlijke rol van de engagementpartner en de manager bij het vormgeven van de teamdynamiek wordt onderzocht.

Hoofdstuk 4 van dit proefschrift presenteert de derde studie, die zich eveneens richt op de partner-manager dyade. Deze studie onderzoekt de effecten van het gelijktijdig vertonen van twee belangrijke leiderschapsgedragingen door de partner en de manager, namelijk initiatiestructuur en consideratie (i.e. rekening houden met anderen), op de efficiëntie, de prestaties en de levensvatbaarheid van het team aan de hand van gegevens van 93 teams. Aangezien coördinatie tussen de leiders in een structuur van dubbel leiderschap vereist is, is het niet ex ante duidelijk welke combinatie van leiderschapsgedragingen resulteert in de hoogste teameffectiviteit, en uiteindelijk in de beste prestaties en levensvatbaarheid van het team. De resultaten ondersteunen zowel supplementaire als complementaire effecten. Wanneer één leider een hoge initiërende structuur vertoont, treden hogere niveaus van teameffectiviteit op wanneer tenminste de andere leider een hoge mate van consideratie vertoont, hetgeen wijst op een complementair effect. Bovendien wordt de teameffectiviteit verder versterkt wanneer beide leiders hoog scoren op consideratie, wat wijst op een supplementair effect. Het hoogste niveau van teameffectiviteit en prestaties doet zich voor wanneer de auditpartner een 'superleider' is, d.w.z. een hoge initiërende structuur en een hoge mate van consideratie vertoont, in combinatie met een manager die veel consideratie vertoont in plaats van een initiërende structuur.

In het algemeen wijzen de resultaten erop dat consideratie belangrijker is voor het opbouwen van teameffectiviteit en prestaties in duale leiderschapsstructuren, wat suggereert dat met name studies gericht op één leider deze effecten niet kunnen verklaren. Deze studie levert daarom een belangrijke bijdrage aan ons begrip van teamleiderschap in moderne teams, die vaak aangestuurd worden door meerdere leiders.

Curriculum Vitae

Lena Pieper was born on February 14th, 1994, in Herdecke, Germany. She received her Bachelor of Science in International Business with a major in Accounting from Maastricht University in 2016 and spent a semester abroad at Queen's University in Canada. She then continued her Master studies at the same university and completed her MSc in 2017. During her Master, she discovered her joy for research and hence, joined the PhD program of the Accounting and Information Management department at Maastricht University in September 2018. Her doctoral research is supported by the Foundation for Auditing Research and she is a co-recipient of two FAR grants. She also served as the PhD representative in the Management Team of the Graduate School of Business and Economics and was part of the PhD committee.

During her doctoral studies, Lena was a visiting research scholar at the University of Illinois-Urbana Champaign, United States of America. She presented her research at various international conferences, including the 11th EARNet Symposium (2021, online), 37th EAA Doctoral Colloquium (2021, online), FAR Young Academic Research Seminar (2021, online), Hawai'i Accounting Research Conference (2022, Honolulu), the AAA Auditing Section Midyear Meeting (2022, Las Vegas; Austin, 2023), FAR Conference (2022, Breukelen), 9th EIASM Audit Quality Workshop (2022, Milan), FAR Seminar Audit Culture and Beyond (2022, Maastricht), and at workshops at different universities, including the University of Antwerp, Maastricht University, Erasmus University Rotterdam, Vrije Universiteit Amsterdam, Aalto University, Radboud University Nijmegen, Tilburg University, University of Wisconsin- Madison and University of Illinois-Urbana Champaign. She is further committed to communicate research findings to audit practice, and has presented her research at different audit firms, e.g., National Office of PwC, and appeared on a podcast.

Starting in August 2023, Lena will continue her academic career as an assistant professor at the University of Illinois – Urbana Champaign.