



Who makes partner in Big 4 audit firms? – Evidence from Germany

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ABSTRACT

This study investigates who makes partner in Big 4 audit firms. Building on prior qualitative research, we conduct the first large scale study using archival data to examine the incremental importance of different individual auditor characteristics for making partner. For our analyses, we collect information on German auditors from a business-oriented social network site. We conduct a longitudinal analysis for a cohort of Big 4 senior managers and directors to identify determinants of making partner. We find that economic capital, social capital, and institutionalized cultural capital matter for making partner. Further, we find that female and foreign auditors are less likely to become partner than their counterparts. In addition, we perform a cross-sectional analysis using a larger sample of auditors to identify the distinct characteristics of Big 4 partners compared to Big 4 senior managers, Big 4 directors, and non-Big 4 partners, and find results consistent with the longitudinal analysis.

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1. Introduction

This study examines who makes audit partner in Big 4 audit firms.¹ We perform a longitudinal analysis for identifying determinants of making partner and a cross-sectional analysis for finding out about distinct characteristics of Big 4 partners. Making partner is a key milestone for candidates showing their aptitude for years. This reward is emphasized in an up-or-out promotion system (Lambert et al., 1993; Waldman, 1990). In this system, employees not promoted within a fixed period are expected to leave the firm, providing incentives to reach the next career level until attaining partner level.

Examining who makes partner helps to shed light on several important issues. *First*, one important question is whether audit firms can keep their best candidates by promising them partnership in the future or career options outside of the profession are more attractive, triggering brain drain in the profession (Knechel et al., 2019). *Second*, audit partners shape audit quality. They are not only responsible for their audit engagements but also act as role models to other auditors and developing future leaders of the

profession (Aobdia, 2019; Carter & Spence, 2014; Kornberger et al., 2011; Malsch & Gendron, 2011). *Third*, investigating factors that foster or hinder auditors from making partner in Big 4 audit firms enables us to address pivotal questions: do females have the same chances of making partner as males and to what extent do audit firms reward both high audit quality and commercial success (Almer et al., 2012; Carter & Spence, 2014)?

Prior studies have mainly used interviews and field studies to investigate the career path of auditors. Using a qualitative approach, these studies uncover the importance of different forms of economic capital (e.g., generating revenue), social capital (e.g., internal and external networks), and cultural capital (e.g., credentials) in making Big 4 partner (Kornberger et al., 2011; Spence & Carter, 2014; Spence et al., 2015, 2016). Building on these insights, we conduct the first large scale study using archival data to provide quantitative evidence on the identity of Big 4 auditors who make partner and of the relative importance of different forms of capital.

We draw on Bourdieu's (1985) social field theory, which others have used in qualitative studies about auditors' career path (Carter & Spence, 2014; Spence & Carter, 2014; Spence et al., 2016) to consider the relative role of these three types of capital for making partner. Economic capital is the possession of items of monetary or commercial value as it relates to the field (Carter & Spence, 2014). Auditors can contribute to the commercial success of the audit firm

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¹ We use the terms partner and audit partner interchangeably.

when they have the ability to win new clients or retain existing clients. Social capital is the way in which social agents network and develop productive social relationships (Carter & Spence, 2014). Social capital comprises group memberships, social ties, and any type of networks (Burt, 2000). Cultural capital, is a multifaceted concept. It exists in the institutionalized form as credentials such as academic or professional titles and in the embodied form as skills acquired over time and manifested in the daily behaviors (Carter & Spence, 2014).² In addition to auditor characteristics related to social field theory, we consider gender, nationality, and experience as demographical factors that are potentially relevant for explaining career success.

We use a German setting. A key advantage of this setting is that in Germany both partners and non-partners (i.e., managers, senior managers, or directors) regularly sign audit opinions of private and public clients (Downar et al., 2020; Koch & Salterio, 2017). The availability of opinion sign-offs enables us to observe likely determinants of making audit partner before attaining partner e.g., gaining new clients and providing high audit quality. Despite this particularity of the German setting, we believe that the theory of our study is largely generalizable to other countries: The German audit environment has many similarities with other audit environments of Western countries in terms of the career path of Big 4 auditors, the organization of Big 4 audit firms, characteristics of the audit market and audit regulations. In particular, the international network structure of Big 4 audit firms strives to ensure international coherence in terms of corporate external representation as well as internal organization (Ferner et al., 1995). Consequently, partner promotions generally follow a global logic, i.e., promotion criteria are largely similar across countries (Spence et al., 2015). Some national particularities such as the special role of an education at a *grande école* in France remain (Spence et al., 2015). Using the German setting, we test for the role of the Ph.D. as a credential conferring social status in a country where no tradition of elite education exists (Hartmann, 2000).

For this study, we code data from manually accessed public profiles of auditors published at a business-oriented social network site. This information allows us to track auditors over the course of their professional life and to identify promotions within and across audit firms. Further, this information enables inferences on a variety of individual auditor characteristics from memberships in clubs and organizations or prior work experience. We gathered information in two waves over a period of about four years. The first wave occurred in early 2014 using XING, the largest business-oriented social networking site at that time. We identify that 53.2 percent ($n = 5,303$) of all Big 4 and non-Big 4 auditors included in the professional register of the German Chamber of Public Accountants have a public profile. Thereof, 1,714 profiles fulfill the data requirements for our cross-sectional analysis.³ For the second wave, conducted at the end of 2018, we gather additional data on the career progression of auditors potentially close to promotion to Big 4 partner at the time of the first wave. We were able to track the longitudinal career progression for 343 individuals who were Big 4

senior managers and 54 individuals who were Big 4 directors. In addition, we conduct a small set of interviews with audit partners from all Big 4 audit firms to get a better understanding of the promotion process in audit firms and to gain additional insights into the mechanisms underlying our empirical findings.

In our first main analysis, we employ a longitudinal design to identify determinants of making partner. We use the data from the first wave to measure auditor characteristics of Big 4 auditors before they make Big 4 partner. We use the data from the second wave to find out which of these auditors make partner after a period of more than four years. For variables indicating economic capital, we find that winning a new public client increases the likelihood of a promotion. We do not find significant positive effects for retaining clients or winning private clients. For variables indicating social capital, we find that knowing the right people within the audit firm due to long tenure, and engaging in formal networking activities (e.g., service clubs) and informal networking activities (e.g., team sports) increases the likelihood of a promotion. For variables indicating institutionalized cultural capital, we observe that a higher social status due to academic and professional credentials has a positive effect on making partner. We find some evidence that embodied cultural capital related to ability matters for career success because auditors showing ambition by becoming a licensed CPA (“Wirtschaftsprüfer”) at an earlier age are more likely to be promoted. However, we do not find indications that embodied cultural capital in the form of providing high audit quality influences the likelihood of a promotion. Concerning demographics, we find indications of a glass-ceiling effect for female auditors and for auditors with a foreign background.

In our second main analysis, we employ a cross-sectional design to identify the distinct characteristics of Big 4 partners compared to Big 4 senior managers, Big 4 directors, and non-Big 4 partners. These analyses are based on the large dataset collected in the first wave. We find that Big 4 partners have a higher economic capital compared to all other groups, embodied by bringing in new business by winning clients. Big 4 partners also have a larger portfolio of public clients than Big 4 directors. Further, Big 4 partners have a higher level of social capital embodied in a larger network size compared to Big 4 senior managers and non-Big 4 partners and a higher likelihood to be a member of a service club (e.g., Rotary) compared to Big 4 senior managers. With regard to institutionalized cultural capital, Big 4 partners are more likely to have a Ph.D. and a foreign CPA license than Big 4 senior managers and directors. We find mixed evidence on the role of embodied cultural capital. On the one hand, Big 4 partners show more ambitious behavior by being younger when becoming a licensed CPA than Big 4 directors and non-Big 4 partners. On the other hand, they provide a similar level of audit quality compared to Big 4 senior managers and directors, and an even lower level of audit quality compared to non-Big 4 partners. However, we caution against overstating the results for audit quality because differences might be driven by the characteristics of the client portfolio. Finally, we find that Big 4 partners are less likely to be female than Big 4 senior managers.

Our study contributes to the literature in several ways. First, we conduct the first large scale study using archival data to provide evidence on the incremental importance of different individual auditor characteristics for making partner in Big 4 audit firms. While prior research primarily relies on qualitative studies (Carter & Spence, 2014; Kornberger et al., 2011) or focuses on only a small set of individual characteristics (Meuwissen, 1998), we employ archival data from a business-oriented social network for a large sample of individual auditors at different career levels in Big 4 and non-Big 4 audit firms.

Second, while prior research focuses on characteristics of auditors at different career levels (Kornberger et al., 2011), we provide

² Cultural capital also exists in a third state, namely objectified cultural capital. This type of capital relates to the possession of coveted physical goods such as cars, houses, or jewelry (Carter & Spence, 2014). In this study, we do not investigate the role of objectified cultural capital due to data limitations.

³ Out of the 5,303 auditors with a public profile, 3,589 auditors are excluded because they do not fulfill the data requirements, e.g., auditors with unclear career level descriptions or auditors at lower career levels. Accordingly, we find that in comparison to the auditors excluded, the auditors included in the final sample are older (44.4 versus 43.5 years), less often female (15.9 versus 22.7 percent) and have more general auditing experience since passing the CPA exam (“Wirtschaftsprüfer-ex-amen”) (10.3 versus 9.2 years).

insights on auditors transitioning from one to another career level by tracking cohorts of Big 4 auditors and examining determinants of making partner using data prior to a promotion. We show that the likelihood of making partner depends on economic, social and cultural capital as well as demographical factors. The evidence for embodied cultural capital is mixed. While we find positive effects for being ambitious in achieving a fast track career for the likelihood of making partner, we do not find significant evidence for a positive influence of embodied cultural capital manifested in higher audit quality.

Third, we extend prior research regarding the identity of Big 4 partners. While prior studies primarily highlight the importance of economic factors for making partner, we find that several other factors, such as differences in networking activities or credentials, incrementally explain differences between Big 4 partners and other Big 4 and non-Big 4 auditors. Moreover, we provide new evidence for the glass-ceiling effect for female auditors (Almer et al., 2012) and, to some degree, for foreign auditors. We also assess the relative importance of different capitals and demographical factors for making partner based on marginal effects. For senior managers making partner, the strongest effects are for membership in a service club (increasing the likelihood of making partner by 53.0 percentage points (pps)), winning a new public client (33.1 pps), and holding a Ph.D. (24.7 pps). Further, we find that being female reduces the likelihood by 11.6 pps.

The structure of the paper is as follows. Section 2 outlines the institutional background, Section 3 describes the data, and Section 4 explains the theoretical framework and the measures used. Section 5 presents the empirical approach and the results of the longitudinal analysis, and Section 6 does the same for the cross-sectional analysis. Section 7 presents additional tests. Section 8 provides a research outlook and concludes the paper.

2. Institutional background

2.1. German setting

In our study, we investigate who makes partner in Big 4 audit firms using the German setting. This setting warrants study in its own right: The German economy is the largest in Europe and the fourth largest in the world with the audit market being the second largest in Europe and the eighth largest worldwide (Francis et al., 2013). The fact that in Germany partners and non-partners act as signing auditors, however, provides us with the unique opportunity to measure auditors' client portfolio and audit quality at the time *before* the auditor makes partner. One reason why non-partners are allowed to sign audit opinions is that two auditors sign it, either two partners or one partner and one non-partner (i.e., manager, senior manager, or director) (Koch & Salterio, 2017; Downar et al., 2020). The only formal requirement for signing audit opinions is that the auditor must be a CPA ("Wirtschaftsprüfer"). Wirtschaftsprüfer represent a profession that is legally licensed to perform statutory audits. In addition, many Wirtschaftsprüfer provide tax advice and limited legal advice. Accordingly, the CPA exam ("Wirtschaftsprüferexamen") covers a broad range of topics (financial reporting, business valuations, assurance and related services (including auditing), business administration and economics, tax law, and business law). Many Wirtschaftsprüfer take the tax advisor exam ("Steuerberaterprüfung") prior to the CPA exam to be exempted from the tax part of the CPA exam. Despite these particularities, Wirtschaftsprüfer can be considered to be equivalent to CPAs in other countries to the extent that they

practice auditing.⁴ One difference compared to other countries is limited auditor liability. However, the reputational risk in case of an audit failure can be substantial leading to client losses for the involved audit firm (Weber et al., 2008).

Along with these distinctive features, many aspects of the German audit environment are comparable to other countries. The financial regulation of publicly listed companies is similar across the European Union (EU) and comparable to other major economies worldwide. In recent years, the EU has harmonized accounting rules and enforcement (Christensen et al., 2013) and has implemented major audit reforms (Gros & Worret, 2016). As a consequence, the quality of the audit environment and the enforcement activities have substantially improved in Germany (Brown et al., 2014). Publicly listed firms are mainly audited by Big 4 audit firms (Willekens et al., 2019), whereas the market for private clients is more dispersed.

2.2. Career path in Big 4 audit firms

Generally, the career path in Big 4 audit firms proceeds from assistant/associate to senior assistant/associate, on to manager, senior manager, director, and partner. At entry, professionals are socialized to values of the auditing profession in terms of technical knowledge and code of conduct (Anderson-Gough et al., 2000; Grey, 1998; Westermann et al., 2015). As auditors advance, their responsibilities for managing audit engagements increase, and they increasingly pursue entrepreneurial tasks, such as selling additional services and winning new clients. Kornberger et al. (2011) illustrate these points by characterizing the manager level as a 'rite of passage' from guided workers to entrepreneurial professionals. Finally, audit partners usually own equity shares and make long-run strategic decisions about new business opportunities (Covaleski et al., 1998; Gendron & Spira, 2010).

The international network structure used by Big 4 audit firms helps ensure comparability across countries. International networks usually foster a uniform corporate external representations and internal organizations, preventing national firms from undermining international coherence (Ferner et al., 1995; Spence et al., 2015). In addition, prior qualitative studies find that promotion criteria are largely similar across countries (Spence et al., 2015).⁵

We validate whether the career path in Germany is comparable to the general career path described above. First, we retrieve career path information from career pages of all Big 4 audit firms in Germany. We find that the career path is largely identical to the one described above. The only minor deviations are that KPMG mentions the additional position of an assistant manager and EY the additional position of an associate partner. Second, we analyze all job advertisements for audit positions available in Big 4 audit firms in Germany, the UK, and the US. Overall, we identify 1,005 job advertisements, thereof 522 clearly relating to audit professionals. In all countries, we find positions relating to the career path described above, with the exception of the partner position, which is never publicly advertised. We observe that the only position mentioned in addition to the positions described above is the position of an assistant manager, regularly advertised in the UK (by 3 of the Big 4 audit firms), but less often in Germany (by one of the Big 4 audit firms) and never in the US.⁶

⁵ We note that requirements for making partner are more homogenous in Western countries compared to Asian countries like Bangladesh (Spence et al., 2016).

⁶ We note that differentiating job advertisements for audit and non-audit services is difficult in some instances. Therefore, we only include job advertisements clearly relating to audit services for this test. Including job advertisements also relating to non-audit services leads to unchanged conclusions.

⁴ We thank an anonymous reviewer for contributing these additional insights.

We also validate whether the requirements and responsibilities for auditors in Germany are similar to those in other countries using information from job advertisements for audit managers in Big 4 audit firms, which is the highest rank with a sufficient number of job advertisements for all Big 4 firms in Germany, the UK, and the US.⁷ We find that all advertisements require a CPA license (at least in the near future) and almost all (97.5 percent) require prior auditing experience. Further, high similarity exists across countries with more than 75 percent of job advertisements in each country mentioning aspects related to interpersonal skills, communication skills, or leadership skills.⁸ For tasks and responsibilities, virtually all job advertisements in all countries (Germany: 100 percent, UK: 83.3 percent, US: 100 percent) list tasks related to managing the audit, with many advertisements also mentioning tasks related to developing the business (Germany: 80.0 percent, UK: 66.7 percent, US: 58.8 percent). Overall, we conclude that the qualifications and abilities required and the tasks and responsibilities described are very similar.

Nevertheless, some country specific determinants for making partner might remain.⁹ One example is the important role that an education at an elite university plays in some countries, for example obtaining a degree at a *grande école* in France (Spence et al., 2015). The situation differs in Germany, where no tradition of elite institutions exists (Hartmann, 2000). Instead, the Ph.D. plays a particular role in conferring social status (Hartmann, 2000) and facilitating a career leadership role in practice (Franck & Opitz, 2007). We investigate whether this particular role of the Ph.D. in Germany also matters for career success in auditing.¹⁰

Another peculiarity of the German setting is that auditors are relatively old when becoming CPA. For 2015, the average (median)

age when passing the German CPA exam (“Wirtschaftsprüfer-examen”) was 34 (33) years.¹¹ By contrast, the average (median) age at the 2015 US CPA exam was 29 (25) years (National Association of State Boards of Accountancy, 2016). One reason for the relatively old age of German CPAs when passing the CPA exam is that they need to have at least three years of practical experience before taking the exam, while US auditors can acquire the required practical experience after taking the exam (Accounting Education, 2020; AICPA, 2019).¹² Moreover, theory does not indicate that the fact that auditors are older when becoming CPA in Germany would alter other criteria for making partner.

2.3. Up-or-out promotion system

Historically, Big 4 audit firms were built on an up-or-out promotion system (Waldman, 1990). This system is similar to a sequential elimination tournament (Lambert et al., 1993) and implies that employees who were not promoted in a fixed period had to leave the company.

In recent years, US Big 4 audit firms, in particular, joined other professional service firms changing the career path to reduce the departure of experienced professionals by creating the position of the director (Carter & Spence, 2014; Galanter & Henderson, 2008; Morris & Pinnington, 1998). The tasks of a director are comparable to those of a partner but entail less pressure to generate business (Carter & Spence, 2014). In the beginning, the director position was not part of the up-or-out promotion system, with directors having almost no chance of being promoted to partner (Almer et al., 2011, 2012). However, recent developments indicate that the director position can be a stepping-stone or even a mandatory interim-step for making partner.

We examine the role of the director position in Germany using websites and interviews. First, we analyze current and historical websites of German and non-German Big 4 audit firms.¹³ Overall, Big 4 audit firms describe the position of director as an intermediate stage for making partner today. In contrast, the director was presented as an alternative for auditors who did not make partner in the past.¹⁴ Second, in interviews with Big 4 audit partners, we learnt that three of the Big 4 audit firms in Germany consider the position of a director as a required intermediary step for making partner today. One interview participant explains that the direct transition from senior manager to partner turned out to be very challenging for many auditors. The advantage of having the director position as a stepping-stone is that auditors have the opportunity to spend additional time learning before they become partner. In the remaining Big 4 audit firm, the director position used to be a stepping-stone in the past. Nowadays, directors only have a small chance of making partner in that audit firm.

3. Data

For our analyses, we use XING, the largest business-oriented

⁷ We retrieve 40 job advertisements from Germany (n = 5), the UK (n = 18) and the US (n = 17). We note that the number of job advertisements in Germany is lower than in the other countries because each audit firm usually uses the same template for advertising jobs across Germany, whereas audit firms in the UK and the US sometimes vary the content of job advertisements across regions.

⁸ We observe heterogeneity with regard to academic qualification, which is always mentioned as a requirement in the US, but less frequently in Germany (40.0 percent) and the UK (22.2 percent). The low percentage in Germany might be explained by the fact that mentioning the requirement is not necessary with more than 95 percent of auditors having an academic degree (WPK, 2019). For the UK, the reason for explicitly mentioning an academic qualification as a requirement might be that it was not mandatory for auditors until recently (Chu et al., 2018). Moreover, we find some differences with regard to experiences listed. For example, 43.5 percent of the German and UK advertisements explicitly list IFRS experience, which is mandatory for listed firms in Europe. By contrast, none of the US advertisements lists IFRS experience and only one non-US advertisement lists US GAAP experience.

⁹ Supporting this notion, our interview participants mention that career paths in audit firms are very similar across countries. Nevertheless, some national particularities may still exist.

¹⁰ We note that holding a Ph.D. is likely a particularity of German-speaking countries, i.e., Germany, Austria, and Switzerland. In 2019, 10.3 percent of German CPAs hold a Ph.D. In Austria, 26.7 percent of CPAs hold a Ph.D. and in Switzerland, 2.1 percent of CPAs hold a Ph.D. Analyzing the data from Switzerland also shows that almost all Swiss auditors (95 percent) with a Ph.D. obtained it from a university in the German-speaking part of the country. In the US, we find that only one auditor listed in the PCAOB AuditorSearch database holds a Ph.D. For the UK, we retrieve data of all Big 4 auditors and find that only 10 auditors hold a Ph.D.

¹¹ There are several reasons why German CPAs are relatively old when taking the CPA exam. First, there were substantial requirements for taking the exam in terms of academic credentials and practical experience. Until 2000, auditors needed a university diploma which took, on average, 5 years as well as audit experience of at least 4 years. Since 2000, auditors need at least a bachelor's degree which usually takes 3 to 4 years as well as 3 to 4 years of auditing experience depending on the length of study. Second, students had to complete up to 13 years of schooling before taking the high school diploma (“Abitur”). Third, until 2011, all men in Germany had to complete mandatory military or civil service after graduating from school, lasting up to 18 months. We note that requirements for participating in the CPA exam are comparable in Europe since the implementation of a European directive in 2014 (see van Linden & Hardies, 2018).

¹² Most US states require one year (or around 2,000 working hours) of practical experience for CPA licensure. Exceptions are Alaska, Connecticut, Indiana, Maine, Nebraska, and Nevada. These states require two years of practical experience (Accounting Education, 2020; AICPA, 2019).

¹³ We use the Internet Archive (<https://archive.org/web/>), which comprises more than 20 years of web history accessible through the Wayback Machine. We note that historic versions are not always available for all periods and for all websites. Thus, we cannot identify the precise date of career system changes.

¹⁴ For example, EY has indicated that senior managers as well as directors have the opportunity to make partner since 2017. Prior to that, senior managers had two mutually exclusive career paths, namely either making director or making partner, and it did not indicate further career opportunities for directors.

Table 1
Sample selection.

| Base Sample (first data collection) | Exclusion | Auditors |
|--|-----------|--------------|
| All Big 4 and non-Big 4 German CPAs over the period 2009–2014 | | 9,960 |
| Exclusion of ... | | |
| ... auditors without XING profile | –4,657 | 5,303 |
| ... missing or unclear career data | –2,059 | 3,244 |
| ... career years outside of sample period 2006–2013 | –227 | 3,017 |
| ... assistant and manager at Big 4 audit firms as well as non-partner at non-Big 4 audit firms | –1,303 | 1,714 |
| Final Sample: characteristics of Big 4 partners (cross-sectional analyses) | | 1,714 |
| Therof senior managers and directors with data in 2013 | | 429 |
| Exclusion of auditors without reliable data in 2018 (second data collection) | –32 | 397 |
| Final Sample: determinants of making partner (longitudinal analyses) | | 397 |
| Therof Big 4 senior managers | | 343 |
| Therof Big 4 directors | | 54 |

This table presents the sample selection and sample composition.

social network site in Germany (Windisch, 2018), to code information from manually accessed public profiles of auditors. We identify auditors' self-reported rank and gather information on a range of individual characteristics, such as language skills, business networks, non-audit employments, memberships in service clubs, and sports activities. We also employ the professional register of the German Chamber of Public Accountants to acquire demographics, i.e., name, age, gender, and accounting and audit-related qualifications such as the CPA exam or the qualification as certified tax advisor. We further use annual reports of private and public firms to identify the auditors' current and historic client portfolio¹⁵ and both Thomson Reuters Datastream and Bureau van Dijk Amadeus to obtain information on client characteristics.

We collected data of individual auditors in two waves: one wave at the beginning of 2014 and one wave at the end of 2018. In our first main analysis, we employ a longitudinal design to identify determinants of making partner using the data of both waves. We use the data from the first wave of data collection to measure auditor characteristics of Big 4 auditors *before* they make Big 4 partner, and we use the data from the second wave of data collection to find out which of these auditors make partner after a period of more than four years. In our second main analysis, we employ a cross-sectional design to identify distinct characteristics of Big 4 audit partners, using the more comprehensive dataset collected in the first wave and data availability for auditors' client portfolio and audit quality.

Table 1 delineates the sample selection process. The first wave starting sample includes 9,960 auditors of Big 4 and non-Big 4 audit firms listed in the professional register at least once between 2009 and 2013.¹⁶ We manually searched for all of these auditors using XING and were able to retrieve the profiles of 5,303 auditors. These profiles feature past career and employment data on an annual basis, in some cases, back to the year 1970. To derive our final sample of Big 4 and non-Big 4 auditors, we only keep profiles for

which audit employment or career information over the relevant period are available. That is, we exclude unclear or missing information as well as non-audit employments, resulting in 3,244 remaining auditors.¹⁷ We exclude auditors if the most recent audit career level information relates to 2006 or earlier and only retain the most recent audit career level.¹⁸ In addition, we focus on experienced auditors, dropping assistants/associates and managers in Big 4 audit firms as well as non-partners at non-Big 4 audit firms. This leads to a final sample of 1,714 auditors for *cross-sectional* analysis. It includes 789 auditors from Big 4 audit firms, thereof 483 senior managers, 83 directors, and 223 partners. The remaining 925 auditors are partners at non-Big 4 audit firms.

The second wave focuses on the 2013–2018 period. The starting point for this data collection was the Big 4 auditors of the first wave with the highest likelihood to make partner in the near future, namely the 483 Big 4 senior managers and the 83 Big 4 directors. Using this starting point, we exclude 123 senior managers and 14 directors without career information available for 2013.¹⁹ We attempt to track career progression for the remaining auditors and are successful for 343 former Big 4 senior managers and 54 former Big 4 directors. We use these 397 auditors for the *longitudinal* analysis.

After completion of our empirical tests, we conduct five interviews with audit partners from all Big 4 audit firms in Germany to provide context for our analyses. We approach the participants based on the contacts of the authors. Using a semi-structured approach, we ask about the process for making partner and the influence of different individual auditor characteristics for making partner. Our participants, four male and one female auditor, were promoted to audit partner between two and 22 years ago (mean = 11.2 years). We conduct the interviews by phone, each taking between 24 and 57 min (mean = 34 min).

¹⁵ We note that client portfolio information is only available for the period 2006–2013.

¹⁶ We exclude auditors who never worked for an audit firm during the sample period. These auditors may either be inactive or self-employed.

¹⁷ We focus on the following standardized career descriptions: manager, senior manager, director, and partner. We exclude not assignable descriptions such as "auditor" or "CPA" and multiple job holdings such as "auditor and lecturer". For non-Big 4 audit firms, we do not differentiate between career levels. Non-audit employments range from administrative positions at small firms to top management at listed companies.

¹⁸ We use 2006 as starting point because we only have client portfolio and audit quality information for the period 2006 to 2013. Because we exclude non-audit employments, some audit employments refer to periods prior to 2013.

¹⁹ The cross-sectional analysis includes auditors with career information available for any years between 2006 and 2013. For, the longitudinal analysis, we require auditors to be still on the audit career track in 2013.

4. Theoretical framework and measurement

4.1. Social field theory

4.1.1. Overview

Social field theory (Bourdieu, 1985) has guided qualitative studies about career paths in auditing (Carter & Spence, 2014; Spence & Carter, 2014; Spence et al., 2016). Bourdieu (1985) defines a “field” as a semi-autonomous group which is characterized by specific rules and skills required to achieve prominence. Within a field, individuals are distributed within social space based on the accumulation of three kinds of capital (Anheier et al., 1995): economic, social, and cultural (Bourdieu, 1985).²⁰ Capitals indicate a generalized resource that is valued in a field to establish distinction.

4.1.2. Economic capital

Economic capital refers to the possession of field-related monetary resources (Carter & Spence, 2014). In auditing, commercial success depends on retaining and selling new services to existing clients and winning new clients. Prior qualitative studies characterize commercial success as pivotal for making partner (Carter & Spence, 2014; Spence et al., 2015). Indeed commercial success increases with profits available for distribution among partners (Levin & Tadelis, 2005). New partners must generate a certain amount of revenue to avoid a dilution of the profit per partner (Huddart & Liang, 2005; Knechel et al., 2013). Even though commercial success is key, basing incentives primarily on economic capital might impair auditors' independence and threaten the societal goal of audit firms to safeguard financial reporting quality (Blay, 2005; Ernstberger et al., 2020; Koch & Salterio, 2017).

To measure economic capital, we use variables capturing auditors' client portfolio. As non-partners (i.e., managers, senior managers, and directors) regularly act as signing auditors for private as well as public clients in Germany, we can measure an individual auditor's ability to contribute to audit firm profit prior to making partner. We use two binary proxies that indicate if an auditor won at least one public or private client during the last two years. To proxy for client retention, we use two binary variables, one indicating if an auditor acts as signing auditor for an existing public client during the last two years, and the other for an existing private client during the last two fiscal years.

4.1.3. Social capital

Social capital refers to the manner in which social agents network and develop productive relationships (Carter & Spence, 2014). Social capital is rooted in social relations. It comprises group memberships, social ties, and any type of network (Burt, 2000). However, accumulating social capital not only requires a large network but also the availability of network resources that can be mobilized in purposive actions (Lin, 1999). As pointed out in the field study of Kornberger et al. (2011), career advancement in audit firms strongly depends on “[...] networking with the ‘right’ people”. In particular, it seems important for managers to be visible and socialize with partners within the audit firm, as they are the one suggesting auditors for promotion and making the promotion decision (Kornberger et al., 2011). Networking activities outside the audit firm might also be useful for providing access to new information, resources, and opportunities (Nahapiet & Ghoshal, 1998). Spence et al. (2015) find in an interview study that attending events and meeting people outside of the audit firm network enables auditors to develop a reputation within and outside of the audit

firm. However, developing and maintaining social networks is limited by auditors' time to invest in social relationships. Therefore, developing and maintaining internal and external social capital involves strategic trade-offs (Podolny & Baron, 1997).

To measure social capital, we use variables on an auditors' network and networking activities. First, we proxy for audit and other business networks. We use a binary variable indicating whether auditors have been working for the same audit firm since the beginning of their career. Starting at an audit firm and traversing all ranks enables auditors to build a large audit firm network (Guinn et al., 2004). We proxy for the development of business networks outside of auditing by using a binary variable indicating work experience outside of auditing. To capture the size of the overall network, we use a variable indicating the number of professional contacts on the business-oriented social network site XING. We proxy for formal networking activities using a binary variable indicating membership in a service club (e.g., Lions or Rotary). Formal memberships provide opportunities to get to know others with similar interests, educational backgrounds, and professional work experiences (Carroll & Teo, 1996). We proxy for informal networking opportunities using binary variables indicating playing golf, running, and playing team sports (Spence et al., 2015).

4.1.4. Institutionalized cultural capital

Institutionalized cultural capital refers to achievements such as diplomas and other socially recognized credentials (Carter & Spence, 2014). In auditing, credentials play a role early on in the career as taking the CPA exam usually requires having obtained a college degree (van Linden & Hardies, 2018). Furthermore, the CPA credential helps auditors to signal their expertise. Therefore, the question is whether additional credentials beyond college degrees and the CPA are important enough to matter for making partner. However, as the auditors need to be competent in many fields, additional credentials might help to create the image of an expert auditor and facilitate interactions with client executives.

To measure institutionalized cultural capital, we use several proxies of auditors' credentials. To measure academic credentials, we include a binary variable indicating if an auditor holds a Ph.D. In Germany, a Ph.D. in business administration is often pursued with the goal to enhance the career chances in business with only a few Ph.D. students staying in academia after the completion of Ph.D. Further, a Ph.D. is associated with elite status and exclusivity, similar to a degree obtained from an elite university (Hartmann, 2000).²¹ To measure accounting related credentials, we use a binary variable indicating qualification as certified tax advisor (“Steuerberater”)²² and a binary variable indicating holding a foreign CPA title. These accounting related credentials indicate additional expertise in the area of accounting, which might be helpful to signal relevant competences to clients.

²¹ Prior qualitative studies highlight the importance of studying at a prestigious university for making partner (Spence et al., 2015). Most partners in the U.S. come from prestigious public universities (e.g., University of Florida, University of Illinois at Urbana-Champaign, Indiana University Bloomington, Michigan State University, University of Texas at Austin, University of Washington, University of Wisconsin–Madison, etc.) and private universities (e.g., Brigham Young University, University of Notre Dame, University of Southern California). However, Germany traditionally has homogenous public universities and few private universities. Only since 2006, some university have been awarded an elite status in terms of research excellence.

²² “Steuerberater” are certified tax advisors. For becoming a certified tax advisor, it is necessary to pass the tax advisor exam. The exam takes place once a year and failure rate is nearly 60 percent (Beruf-Steuerberater, 2019). Many German auditors participate in the tax advisor exam prior to taking the German CPA exam. The reason is that the German CPA exam is very broad and includes two tests on tax law. Auditors having passed the tax advisor exam are exempted from these two tests.

²⁰ Relatedly, all interview participants emphasize that the promotion criteria do not only take into account economic factors but also the personality of the auditor.

4.1.5. Embodied cultural capital

Embodied cultural capital includes attributes linked to abilities, appearance, or speech. It manifests in the behaviors and conduct of an individual. A central ability of auditors, as an expression of embodied social capital, is to conduct tasks such as overseeing an audit or conducting meaningful conversations with (potential) clients. While technical expertise used to be seen as a positive attribute of an auditor, nowadays, technical experts do not necessarily qualify for partner positions because they are perceived as a “mere technician” instead of a “rounded business person” (Carter & Spence, 2014). Related to the construct of embodied cultural capital and the importance of a being a “rounded business person”, research on career success emphasizes the role of tacit knowledge involving the management of oneself, others, and ones performance on socially interactive tasks (Wagner & Sternberg, 1987). Audit research shows that tacit knowledge matters for performance evaluations and promotability of both inexperienced (Bol et al., 2018) and experienced auditors (Tan and Libby, 1997). Nevertheless, technical knowledge may still matter for making partner as prior archival studies indicate that incidents of low audit quality, due to a lack of technical expertise, are associated with negative career consequences for involved auditors (Feroz et al., 1991; Sundgren & Svanström, 2016).

For embodied cultural capital, we use variables capturing auditor behavior and conduct. First, we use the age of the auditor when passing the German CPA exam, considering being younger as an indicator of auditors' ambition to achieve a fast track career (Meuwissen, 1998). Second, we proxy for linguistic capabilities using a binary variable indicating if an auditor is able to speak foreign languages other than English. Third, we measure auditor behavior during the audit by measuring audit quality. As proxies, we use the percentage of going concern modifications issued across all engagements during the last two years and the percentage of engagements showing small profits by just narrowly beating the zero earnings threshold during the last two years. Issuing a going concern opinion is linked to audit quality as it indicates an auditor's ability to resist client pressure (DeFond & Zhang, 2014). Prior studies in auditing have regularly used this measure in a US setting (e.g., Chung et al., 2019; DeFond et al., 2002), but also in a German setting (Ratzinger-Sakel, 2013). Small profits are considered to be linked to audit quality because just barely beating the zero earnings threshold is often only achieved through earnings management not constrained by the auditor (Burgstahler & Dichev, 1997; DeGeorge et al., 1999). Prior research in the US (Aobdia, 2019; Francis & Yu, 2009) and Europe (e.g., van Tendeloo & Vanstraelen, 2011) uses this measure as a proxy for audit quality. In addition, Aobdia (2019) shows that the likelihood to meet or beat the zero earnings threshold is correlated with regulators' assessment of audit quality measured by PCAOB inspections. The measure is suitable for Germany because beating the zero earnings seems more common in continental European countries, such as Germany, compared to the UK and the US (Daske et al., 2006).²³

4.2. Demographics

Prior research on career success considers demographical factors besides the different types of capital of the social field theory (Kornberger et al., 2010; Lowe et al., 2001). One important demographical variable is gender. Historically, males dominated audit firms. Partner positions were regularly occupied by males, and females were more likely promoted to non-partner positions

(Almer et al., 2011, 2012). Recent studies on career aspirations of auditors indicate that female auditors strive less often for partner positions than male auditors (Jones III & Iyer, 2020). To promote the careers of female auditors, audit firms implemented various programs, including flexible work time initiatives. Nevertheless, females may remain underrepresented at top levels in part because of the challenges involved in ensuring work time flexibility at higher career levels (Kornberger et al., 2010) and that alternative working arrangements are on average associated with lower career aspirations. We infer auditor gender from the first name.²⁴

A second factor is nationality. Prior research from the US focuses on the related concept of ethnic groups and documents an increase in the percentage of different ethnic groups in auditing since the 1950s (Madsen, 2013). Historically, audit firms implemented mentoring programs to foster career advancement for minorities (Hammond, 1997) and still actively promote diversity.²⁵ However, certain ethnic groups remain underrepresented due to a lack of role models (Tysiac, 2012). In our study, we use nationality instead of ethnicity because there is very little variation in ethnicity among auditors in Germany compared to other countries like the US. We measure nationality by inferring whether auditors have a foreign background. We classify auditors as having a foreign background if they are either not born in Germany or if their name is classified as not being German according to name-prism.com (Ye et al., 2017), a frequently used automated classification tool.

Finally, we control for the length of general experience. Auditors need to pass through several career levels prior to a promotion to partner, indicating a certain amount of experience required for promotion. Information from the professional register on the actual date of CPA appointment enables us to calculate this experience measure in days.²⁶

5. Determinants of making partner (longitudinal analysis)

5.1. Career movements

In our first main analyses, we use information on the career progression of those auditors at the end of 2018 who worked as senior managers (n = 343) or directors (n = 54) in Big 4 audit firms at the end of 2013. To illustrate the career movements, we use a transition matrix commonly used in labor economics (Baker et al., 1994). Table 2 shows this transition matrix for our sample. Rows indicate career levels at the end of 2013 and columns indicate career levels at the end of 2018. In case of the 343 Big 4 senior managers, we observe the following career levels: 123 (35.9 percent) remain senior manager, 57 (16.6 percent) make director, 63 (18.4 percent) make partner, and 100 (29.1 percent) leave Big 4 audit firms. In case of the 54 Big 4 directors, we find that 29 (53.7 percent) remain director, 13 (24.1 percent) make partner, and 12 (22.2 percent) leave Big 4 audit firms. These descriptive results suggest broad variation in career movements for senior managers as well as directors. In particular, we find that a similar proportion of Big 4 senior managers (18.4 percent) and Big 4 directors (24.1 percent) make partner, suggesting that the position of director is a potential intermediate step for making partner.

²⁴ This approach yields unambiguous assignments because German regulation required the given name to reveal the gender. We validate potential unambiguous assignments for auditors born in a foreign country. There are no unisex names.

²⁵ All Big 4 audit firms promote diversity and inclusiveness on their websites.

²⁶ We find virtually unchanged results if we use age instead of experience as a demographical variable.

²³ We note that using audit quality measures based on discretionary accruals or restatements are not feasible due to data limitations for private firms.

5.2. Research design

We set up a regression model to estimate the incremental importance of the different types of capitals and demographical factors for making partner. We estimate the following probit regression at the individual auditor level:

$$\begin{aligned}
 \text{Big 4 Partner} = & \beta_0 + \beta_1 \text{ New Client Public} + \beta_2 \text{ New Client Private} + \beta_3 \text{ Retain Client Public} \\
 & + \beta_4 \text{ Retain Client Private} + \beta_5 \text{ Loyalty} + \beta_6 \text{ Non Audit} + \beta_7 \text{ Network Size} \\
 & + \beta_8 \text{ Service Club} + \beta_9 \text{ Running} + \beta_{10} \text{ Golf} + \beta_{11} \text{ Team Sports} + \beta_{12} \text{ Ph.D.} \\
 & + \beta_{13} \text{ Tax Advisor} + \beta_{14} \text{ Foreign CPA} + \beta_{15} \text{ Ambitiousness} + \beta_{16} \text{ Language} \\
 & + \beta_{17} \text{ Meet or Beat} + \beta_{18} \text{ Going Concern} + \beta_{19} \text{ Female} + \beta_{20} \text{ Foreign} \\
 & + \beta_{21} \text{ Experience} + \beta_{22} \text{ Loss Engagements} + \text{Fixed Effects} + \varepsilon
 \end{aligned} \tag{1}$$

where all variables are defined in [Appendix I](#).

We employ a longitudinal design to identify the determinants of making Big 4 partner. The sample includes auditors who were senior managers or directors in Big 4 audit firms at the end of 2013. The dependent variable *Big 4 Partner* takes a value of one for those auditors who make partner until the end of 2018 and zero otherwise.²⁷ All explanatory variables indicate individual characteristics prior to making partner. Client portfolio and audit quality variables refer to the two preceding years (i.e., 2012 and 2013). All other variables refer to the beginning of 2014. To control for heterogeneity across audit firms, we include audit firm fixed effects and cluster standard errors at the audit firm level. To control for differences in client characteristics, we include the percentage of loss engagements over the last two years in regression analyses with audit quality measures.²⁸

5.3. Descriptive statistics and univariate analyses

[Table 3](#) shows descriptive statistics for our sample of 397 Big 4 senior managers and directors as of 2013.²⁹ In addition, the table provides the results of mean comparison tests with respect to the characteristics of these auditors who did and did not make partner and auditors by the end of 2018.

For the different types of capital, we observe the following univariate differences that are at least significant at the 10 percent level. For economic capital, we find opposing effects. We find that 7.9 percent of senior managers making partner win at least one public client whereas only 3.2 percent of senior managers not

making partner win a public client. For winning private clients, we find that 9.5 percent of senior managers making partner but 19.3 percent of senior managers not making partner win at least one. For social capital, we observe that 85.7 percent of senior managers making partner started their careers at the current audit firm and 11.1 percent have non-audit experience, whereas only 72.9 percent of senior managers not making partner started at the current audit

firm and 24.3 percent have non-audit experience. In terms of institutionalized cultural capital, 23.1 percent of directors making partner have a Ph.D., whereas only 4.9 percent of directors not making partner have a Ph.D. With respect to embodied cultural capital, senior managers making partner are younger when passing the CPA exam (32.4 years) than senior managers not making partner (33.3 years). We observe insignificant differences for our audit quality variables. Senior managers making partner (not making partner) issue a going concern modification in 2.9 percent (3.9 percent) of audits and have clients that report small profits in 8.2 percent (10.8 percent) of all cases. Turning to the demographics, we observe that senior managers making partner are less often female (11.1 versus 25.4 percent), have less general experience since CPA appointment (6.0 versus 7.2 years), and are younger (38.5 versus 40.6 years, not tabulated) than senior managers not making partner. Comparing directors making partner to directors not making partner, we only observe significant differences for general experience since CPA appointment (8.4 versus 11.8 years) and auditors' age (41.6 versus 46.2 years, not tabulated).

5.4. Multivariate results

[Table 4](#) presents the results from the longitudinal regression analysis (equation 1). Columns (1) and (2) show the results the sample of Big 4 senior managers. As not every senior manager serves as signing auditor, we present results with and without measures of audit quality.³⁰

For economic capital, we observe a significant positive effect for winning a new public client but a negative effect for winning a new private client. These findings are consistent with the univariate analysis and support the idea that public clients are more important than private clients for the economic success of the audit firm. As in the univariate analysis, retaining clients does not seem to be relevant. Interview participants confirm the importance of winning clients for making partner. Candidates up for promotion need to develop an individual business case including their client portfolio. One participant mentions that the audit fee volume of the client portfolio must be above a specific threshold for making partner. Regarding the distinction between public and private clients, interview participants indicate that it is generally easier to become partner with a portfolio of public clients as these clients tend to be

²⁷ In the longitudinal analysis, we identify whether Big 4 senior managers and Big 4 directors as of the beginning of 2014 make partner until the end of 2018. We are confident that this four-year period enables us to identify most auditors that eventually make partner. Our notion is supported by publicly available data indicating that promotions regularly happen every two to three years ([Deloitte, 2020](#)) and insights obtained in our interviews. However, we might misclassify some auditors as not making partner that eventually make partner at a later stage. To evaluate the relevance of this concern, we check again the rank of auditors classified as not making partner in the beginning of 2020. In total, we identify five additional promotions to partner, increasing the number of 2014 Big 4 senior managers that make partner from 63 to 68 and leaving the number of 2014 Big 4 directors that make partner unchanged. This small increase in additional promotions provides some comfort that our classification of auditors making partner based on the four-year period is valid.

²⁸ We note that including additional client-level control variables is not feasible due to data limitations.

²⁹ Pairwise correlations of all variables are presented in [Appendix II Panel A](#).

³⁰ We describe coefficients as significant if they are significant in one of the two models. In a similar vein, marginal effects refer to strongest significant effects in both models.

Table 2
Transition matrix for career paths.

| From/To | | Career level at the end of 2018 | | | | | Total |
|---------------------------------------|----------------|---------------------------------|-------------|-------------|-------------|-------------|---------------|
| | | Big4 | | | | | |
| | | Senior manager | Director | Partner | Non-Big4 | Non-Audit | |
| Career level at the beginning of 2014 | Senior manager | 123 35.9% | 57 16.6% | 63 18.4% | 53 15.4% | 47 13.7% | 343 100.0% |
| | Director | 0 0.0% | 29 53.7% | 13 24.1% | 5 9.2% | 7 13.0% | 54 100.0% |
| Total | | 123 | 86 | 76 | 58 | 54 | 397 |

This table illustrates the career paths of Big 4 senior managers and Big 4 directors over the period 2014 to 2018. Rows indicate career levels at the end of 2013 (collected in the beginning of 2014), columns indicate career levels/employments at the end of 2018 (collected at the end of 2018).

Table 3
Descriptive statistics and univariate tests for determinants of making partner analysis.

| | Full Sample | | Senior manager | | | | Director | | | |
|--------------------------|-------------|---------|----------------|---------|----------------------|-----------|--------------|---------|----------------------|----------|
| | | | Made partner | | Did not make partner | | Made partner | | Did not make partner | |
| | N | Mean | N | Mean | N | Mean | N | Mean | N | Mean |
| Economic Capital | | | | | | | | | | |
| New Client Public | 397 | 0.045 | 63 | 0.079 | 280 | 0.032* | 13 | 0.000 | 41 | 0.098 |
| New Client Private | 397 | 0.179 | 63 | 0.095 | 280 | 0.193* | 13 | 0.308 | 41 | 0.171 |
| Retain Client Public | 397 | 0.081 | 63 | 0.111 | 280 | 0.071 | 13 | 0.000 | 41 | 0.122 |
| Retain Client Private | 397 | 0.438 | 63 | 0.444 | 280 | 0.425 | 13 | 0.462 | 41 | 0.512 |
| Social Capital | | | | | | | | | | |
| Loyalty | 397 | 0.746 | 63 | 0.857 | 280 | 0.729** | 13 | 0.692 | 41 | 0.707 |
| Non Audit | 397 | 0.219 | 63 | 0.111 | 280 | 0.243** | 13 | 0.231 | 41 | 0.220 |
| Network Size | 397 | 4.849 | 63 | 5.028 | 280 | 4.853 | 13 | 4.795 | 41 | 4.568 |
| Service Club | 397 | 0.020 | 63 | 0.016 | 280 | 0.014 | 13 | 0.000 | 41 | 0.073 |
| Running | 397 | 0.098 | 63 | 0.063 | 280 | 0.111 | 13 | 0.077 | 41 | 0.073 |
| Golf | 397 | 0.076 | 63 | 0.063 | 280 | 0.079 | 13 | 0.077 | 41 | 0.073 |
| Team Sports | 397 | 0.202 | 63 | 0.190 | 280 | 0.207 | 13 | 0.308 | 41 | 0.146 |
| Cultural Capital | | | | | | | | | | |
| <i>Institutionalized</i> | | | | | | | | | | |
| Ph.D. | 397 | 0.040 | 63 | 0.063 | 280 | 0.025 | 13 | 0.231 | 41 | 0.049** |
| Tax Advisor | 397 | 0.662 | 63 | 0.651 | 280 | 0.643 | 13 | 0.692 | 41 | 0.805 |
| Foreign CPA | 397 | 0.096 | 63 | 0.095 | 280 | 0.104 | 13 | 0.077 | 41 | 0.049 |
| <i>Embodied</i> | | | | | | | | | | |
| Ambitiousness | 397 | -33.310 | 63 | -32.441 | 280 | -33.344** | 13 | -33.236 | 41 | -34.438 |
| Language | 397 | 0.441 | 63 | 0.444 | 280 | 0.457 | 13 | 0.308 | 41 | 0.366 |
| Meet or Beat | 189 | 0.112 | 31 | 0.082 | 130 | 0.108 | 7 | 0.158 | 21 | 0.162 |
| Going Concern | 189 | 0.037 | 31 | 0.029 | 130 | 0.039 | 7 | 0.062 | 21 | 0.026 |
| Demographics | | | | | | | | | | |
| Female | 397 | 0.212 | 63 | 0.111 | 280 | 0.254** | 13 | 0.077 | 41 | 0.122 |
| Foreign | 397 | 0.146 | 63 | 0.143 | 280 | 0.150 | 13 | 0.154 | 41 | 0.122 |
| Experience | 397 | 7.541 | 63 | 6.009 | 280 | 7.227*** | 13 | 8.370 | 41 | 11.780** |
| Client Control | | | | | | | | | | |
| Loss Engagements | 189 | 0.088 | 31 | 0.082 | 130 | 0.085 | 7 | 0.135 | 21 | 0.094 |

This table presents summary statistics for analyzing the incremental importance of the different types of capital and demographical factors for making partner (longitudinal analysis). All variables are defined in Appendix I. Audit quality variables and client characteristics are available only for signing auditors, reducing the number of observations. *, **, and *** indicate two-tailed statistical significant difference in means at the 10, 5, and 1 percent level.

Table 4
Empirical tests of theorized determinants of making partner.

| | <u>Senior manager made partner</u> | <u>Senior manager made partner</u> | <u>Director made partner</u> |
|---------------------------------|------------------------------------|------------------------------------|------------------------------|
| | (1) | (2) | (3) |
| <u>Economic Capital</u> | | | |
| New Client Public | 0.719*** (4.012) | 1.170*** (3.995) | |
| New Client Private | -0.651* (-1.919) | -0.757*** (-3.064) | 1.178 (1.455) |
| Retain Client Public | -0.146 (-0.590) | -0.146 (-0.440) | |
| Retain Client Private | 0.285 (1.482) | 0.387 (0.816) | -0.242 (-0.971) |
| <u>Social Capital</u> | | | |
| Loyalty | 0.359*** (3.106) | 0.083 (0.305) | 0.046 (0.095) |
| Non Audit | -0.651*** (-9.310) | -1.088*** (-2.649) | -0.194 (-0.247) |
| Network Size | 0.007 (0.043) | -0.094 (-0.630) | 0.169 (0.631) |
| Service Club | -0.495 (-0.544) | 1.626** (2.041) | |
| Running | -0.225 (-0.854) | -0.010 (-0.028) | 0.145 (0.150) |
| Golf | -0.112 (-0.281) | 0.245 (0.283) | -0.483 (-0.801) |
| Team Sports | -0.152 (-0.978) | 0.553*** (3.283) | 0.222 (0.377) |
| <u>Cultural Capital</u> | | | |
| <u>Institutionalized</u> | | | |
| Ph.D. | 0.837* (1.652) | 0.752 (0.918) | 1.881 (1.925) |
| Tax Advisor | 0.174* (1.930) | -0.029 (-0.180) | 0.164 (0.334) |
| Foreign CPA | -0.078 (-0.236) | 0.813** (2.541) | -0.492 (-0.566) |
| <u>Embodied</u> | | | |
| Ambitiousness | 0.078*** (4.847) | 0.091 (1.230) | 0.201 (1.922) |
| Language | -0.280 (-1.258) | -0.258 (-0.905) | 0.269 (0.286) |
| Meet or Beat | | -0.231 (-0.290) | |
| Going Concern | | -1.719 (-1.075) | |
| <u>Demographics</u> | | | |
| Female | -0.640*** (-3.132) | -1.019** (-2.166) | -1.644 (-1.320) |
| Foreign | -0.147 (-0.546) | -0.577** (-2.104) | 0.065 (0.120) |
| Experience | -0.088 (-1.430) | -0.047 (-0.457) | -0.127 (-1.571) |
| <u>Client Control</u> | | | |
| Loss Engagements | | 0.929 (0.981) | |
| Constant | 2.089 (1.471) | 2.793 (0.732) | 6.308*** (5.218) |
| Fixed Effects | Audit Firm | Audit Firm | - |
| Observations | 343 | 161 | 46 |
| McFadden R2 | 0.181 | 0.286 | 0.332 |

This table presents results comparing individual characteristics of Big 4 senior managers and Big 4 directors who made partner compared to Big 4 senior managers and Big 4 directors who did not make partner during the period 2014 to 2018 (longitudinal analysis). All results are based on probit regressions of model (1) estimated at the auditor level. The dependent variable takes a value of one for those auditors who make partner until the end of 2018 and zero otherwise. All explanatory variables indicate individual auditor characteristics *prior* to making partner. Missing coefficients are due to a lack of variation. All variables are defined in [Appendix I](#). As not every auditor serves as signing auditor (which is necessary for measurement of audit quality), we present results with and without measures of audit quality. Columns (1) and (2) include audit firm fixed effects. For column (3), we do not include fixed effects and audit quality variables and a client control due to the small sample size. Standard errors are clustered at the audit firm level. *, **, and *** indicate two-tailed statistical significance at the 10, 5, and 1 percent level.

Table 5
Descriptive statistics and univariate tests for characteristics of Big 4 partner analysis.

| | Full Sample | | Big 4 partner only | | Big 4 senior manager only | | Big 4 director only | | Non-Big4 partner only | |
|--------------------------|-------------|---------|--------------------|---------|---------------------------|----------|---------------------|------------|-----------------------|------------|
| | N | Mean | N | Mean | N | Mean | N | Mean | N | Mean |
| Economic Capital | | | | | | | | | | |
| New Client Public | 1,714 | 0.045 | 223 | 0.112 | 483 | 0.035*** | 83 | 0.048* | 925 | 0.034*** |
| New Client Private | 1,714 | 0.177 | 223 | 0.363 | 483 | 0.217*** | 83 | 0.181*** | 925 | 0.110*** |
| Retain Client Public | 1,714 | 0.089 | 223 | 0.215 | 483 | 0.087*** | 83 | 0.084*** | 925 | 0.059*** |
| Retain Client Private | 1,714 | 0.540 | 223 | 0.592 | 483 | 0.464*** | 83 | 0.482* | 925 | 0.573 |
| Social Capital | | | | | | | | | | |
| Loyalty | 1,714 | 0.505 | 223 | 0.807 | 483 | 0.768 | 83 | 0.675** | 925 | 0.280*** |
| Non Audit | 1,714 | 0.165 | 223 | 0.121 | 483 | 0.213*** | 83 | 0.205* | 925 | 0.146 |
| Network Size | 1,714 | 4.601 | 223 | 4.668 | 483 | 4.946*** | 83 | 4.788 | 925 | 4.387*** |
| Service Club | 1,714 | 0.036 | 223 | 0.045 | 483 | 0.010*** | 83 | 0.024 | 925 | 0.049 |
| Running | 1,714 | 0.086 | 223 | 0.072 | 483 | 0.110 | 83 | 0.072 | 925 | 0.078 |
| Golf | 1,714 | 0.090 | 223 | 0.126 | 483 | 0.079** | 83 | 0.120 | 925 | 0.085* |
| Team Sports | 1,714 | 0.144 | 223 | 0.148 | 483 | 0.193 | 83 | 0.181 | 925 | 0.115 |
| Cultural Capital | | | | | | | | | | |
| <i>Institutionalized</i> | | | | | | | | | | |
| Ph.D. | 1,714 | 0.064 | 223 | 0.090 | 483 | 0.031*** | 83 | 0.060 | 925 | 0.075 |
| Tax Advisor | 1,714 | 0.744 | 223 | 0.700 | 483 | 0.553*** | 83 | 0.711 | 925 | 0.858*** |
| Foreign CPA | 1,714 | 0.073 | 223 | 0.121 | 483 | 0.101 | 83 | 0.072 | 925 | 0.046*** |
| <i>Embodied</i> | | | | | | | | | | |
| Ambitiousness | 1,714 | -34.125 | 223 | -33.326 | 483 | -33.186 | 83 | -34.317*** | 925 | -34.791*** |
| Language | 1,714 | 0.369 | 223 | 0.363 | 483 | 0.445** | 83 | 0.361 | 925 | 0.331 |
| Meet or Beat | 967 | 0.087 | 137 | 0.163 | 242 | 0.114** | 43 | 0.133 | 545 | 0.052*** |
| Going Concern | 967 | 0.026 | 137 | 0.024 | 242 | 0.037 | 43 | 0.033 | 545 | 0.022 |
| Demographics | | | | | | | | | | |
| Female | 1,714 | 0.159 | 223 | 0.135 | 483 | 0.078** | 83 | 0.120 | 925 | 0.138 |
| Foreign | 1,714 | 0.186 | 223 | 0.193 | 483 | 0.215 | 83 | 0.193 | 925 | 0.155 |
| Experience | 1,714 | 10.322 | 223 | 12.951 | 483 | 6.704*** | 83 | 10.226*** | 925 | 11.586*** |
| Client Control | | | | | | | | | | |
| Loss Engagements | 967 | 0.060 | 137 | 0.106 | 242 | 5.896* | 43 | 0.104 | 545 | 0.037*** |

This table presents summary statistics for our characteristics of Big 4 partners analyses (cross-sectional analysis). All variables are defined in Appendix I. Audit quality variables are available only for signing auditors. *, **, and *** indicate two-tailed statistical significant difference in means relative to Big 4 partners at the 10, 5, and 1 percent level. This table presents results comparing individual characteristics of Big 4 partners and Big 4 senior managers, Big 4 directors, and non-Big 4 partners (cross-sectional analysis). All results are based on cross-sectional probit regressions of model (1) at the auditor-level. For all columns, the dependent variable is a binary variable that takes the value of one for Big 4 partners and zero otherwise. All variables are defined in Appendix I. As not every auditor serves as signing auditor (in which case we are only able to measure audit quality), we present results with and without measures of audit quality. For Big 4 subsamples (columns (1) to (4)), we include audit firm effects. For Big 4 and non-Big 4 subsamples (column (5) and (6)), we do not include audit firm fixed effects due to a lack of variation of the independent variable in non-Big 4 audit firms. Standard errors are clustered at the audit firm level. *, **, and *** indicate two-tailed statistical significance at the 10, 5, and 1 percent level.

large and more prestigious for the audit firm. One participant highlights that playing an important role in winning a single new public client can be sufficient for demonstrating a successful business case. Nevertheless, interview participants acknowledge that auditors focusing on private clients can also make partner.

For social capital, we observe significantly positive effects for audit firm loyalty and significantly negative effects for job experience outside of auditing, confirming the findings from the univariate analysis. In addition, the multivariate analysis reveals significantly positive effects not detected in the univariate analysis for formal memberships in a service club and being interested in playing team sports. Interview participants confirm the importance of building a strong network within the audit firm for making partner. One interview participant mentions that auditors entering an audit firm at the senior manager level face challenges in developing their network and, thus, reputation in the audit firm.

For institutionalized cultural capital, we find a positive effect in terms of holding a Ph.D., being a certified tax advisor, and holding an additional foreign CPA licensure. These effects are not significant in univariate analyses. Our interview participants do not see a direct link between holding one of those titles and making partner. However, some participants note that these titles can indicate specific

experiences, specializations, or traits potentially relevant for making partner. Moreover, one participant points out that holding a Ph.D. might improve the standing towards board members of large corporations who often hold a Ph.D. as well. These statements suggest that holding a title might indirectly help in making partner.

For embodied cultural capital, consistent with the univariate analyses, we find a positive and significant effect for ambitious auditors. We do not find significant effects for providing high audit quality or for being able to speak a foreign language other than English. Our interview participants support the notion that passing the CPA at a younger age indicates that the candidate has the ambition needed for making partner. One participant notes that having postponed the CPA exam for some years raises questions about the personality of the candidate in the promotion process. Regarding audit quality, all participants emphasize that providing a high level of audit quality is a necessity for making partner. Some participants also point out that low quality auditors are usually sorted out at lower career levels. Thus, our insignificant results for audit quality might, to some extent, be attributable to low quality auditors exiting the profession at earlier career stages.

Finally, we find that female and foreign senior managers are less likely to make partner even when controlling for other

determinants. In the univariate analysis, we find significant effects for auditor gender but not for nationality. All interview participants emphasize that Big 4 audit firms strive for a higher female quota across all career levels and have started to implement various initiatives within the last five to ten years. However, they acknowledge challenges in achieving this goal. In particular, female auditors find it regularly challenging to combine the aspiration to making partner with family commitments. Supporting this notion, Jones III & Lyster (2020) shows that female auditors strive less often for making partner than male auditors. With regard to foreign auditors, the interview participants point out that career opportunities may be limited because of language barriers, e.g., clients of large German firms might expect that their auditor is a native speaker.

To provide insights on the relative importance of different capitals and demographical factors for making partner, we calculate marginal effects. For economic capital, we find that winning a new public client increases the likelihood of making partner by 33.1 pps. For social capital, we find the strongest effect for membership in a service club (53.0 pps). For institutionalized cultural capital, we find the strongest effect for holding a Ph.D. (24.7 pps). Further, we find that winning a new private client reduces the likelihood by 11.8 pps and being female reduces the likelihood by 11.6 pps.

Table 4, column (3) presents the results for the sample of Big 4 directors. Given the smaller sample size, data limitations restrict us from estimating model (1) with audit quality measures and audit firm fixed effects. Consistent with the univariate analysis, we observe significantly positive effects for holding a Ph.D. In addition, the multivariate analysis shows that passing the CPA exam at a relatively young age also matters for making partner.

Overall, our results indicate that all types of capital matter for making partner. In particular, our results reveal that some manifestations of capital are more important than others. Winning a new public client is more important than retaining a client. Building a network within the audit firm seems more important than building a network outside. Showing ambition by taking the CPA exam early on seems to be more important than providing high audit quality. In addition, our results reveal the particular importance of credentials in auditing, with all three types of credentials being significant in some regression models. Finally, our evidence is consistent with the existence of a glass-ceiling effect for female and foreign auditors.

6. Characteristics of Big 4 partners (cross-sectional analysis)

6.1. Research design

Next, we employ a cross-sectional design to identify characteristics of Big 4 audit partners using the comprehensive dataset obtained in the first wave of data collection. We use the same regression model as in our longitudinal design reported above (model (1)). The dependent variable *Big 4 Partner* takes on the value of 1 for Big 4 partners, and 0 otherwise. However, unlike in the longitudinal design, the dependent variable does not refer to the career position in 2018, but the most recent audit position using the data of our first wave collected in 2014. We compare Big 4 partners using the following benchmark groups: (1) Big 4 senior managers; (2) Big 4 directors; and (3) partners at non-Big 4 audit firms. We control for heterogeneity using audit firm fixed effects, except for the subsample comparing Big 4 partners to non-Big 4 partners due to a lack of variation of the independent variable in non-Big 4 audit firms. We cluster standard errors at the audit firm level. As not every auditor serves as signing auditor, we present results with and without measures of audit quality.

6.2. Descriptive statistics and univariate results

Table 5 shows descriptive statistics as well as results of mean comparison tests between Big 4 partners and three benchmark groups: Big 4 senior managers, Big 4 directors, and non-Big 4 partners.³¹

We observe the following characteristics for Big 4 audit partners. For economic capital, we find that 11.2 percent win at least one new public client, 36.3 percent win at least one private client, 21.5 percent serve as signing auditor for at least one not newly won public client, 59.2 percent serve as signing auditor for at least one not newly won private client over a two-year period. Compared to all three benchmark groups, Big 4 partners have a larger client portfolio of existing and new clients.

For social capital, we find that 80.7 percent of Big 4 partners work for the same audit firm since the beginning of their professional life, 12.1 percent have work experience outside of auditing, auditors have 106.5 contacts on the business-oriented social network site, 4.5 percent are members of a service clubs, 7.2 percent run, 12.6 percent play golf, and 14.8 percent play team sports. Compared to these figures, Big 4 senior managers are more likely to have work experience outside of auditing, have less contacts on the business-oriented social network site, are less likely to be members in service clubs, and less likely play golf. Further, Big 4 directors are less likely to have worked in the same audit firm since the beginning and more likely have non-audit experience than Big 4 partners. Non-Big 4 partners are less likely to have worked in the same audit firm since the beginning than Big 4 partners, have less contacts on the business-oriented social network site, and are less likely to play golf.

For institutionalized cultural capital, we find that 9.0 percent of Big 4 partners hold a Ph.D., 70.0 percent are certified tax advisor, and 12.1 percent have a foreign CPA licensure. Compared to Big 4 partners, Big 4 directors have a similar likelihood to hold these credentials, while Big 4 senior managers are less likely to hold a Ph.D. or to be a certified tax advisor. Non-Big 4 partners are less likely to hold a foreign CPA but more likely to be certified tax advisors than Big 4 partners.

For embodied cultural capital, we observe for Big 4 partners that the average age when passing the CPA exam is 33.1 years, and 36.3 percent speak at least one foreign language in addition to English. In comparison, Big 4 directors and non-Big 4 partners tend to be older when passing the CPA exam and Big 4 senior managers are more likely to speak at least one foreign language. For audit quality, we find that 16.3 percent of engagements of Big 4 partners report a small profit and 2.4 percent issue a going concern modification. We find that Big 4 senior managers and non-Big 4 partners have client portfolios with a lower proportion of small profit engagements.

With regard to demographics, we find that 13.5 percent of Big 4 partners are female, 19.3 percent have a foreign background, the average auditing experience since CPA appointment is 13.0 years and the average age is 46.3 years (not tabulated). Big 4 partners tend to have a longer auditing experience than each of the three benchmark groups and Big 4 partners are older than Big 4 senior managers (39.9 years, not tabulated) as well as Big 4 directors (44.5 years, not tabulated). The only other significant difference in demographics is that Big 4 senior managers are more often female than Big 4 partners.

³¹ Pairwise correlations of all variables are presented in Appendix II, Panel B.

Table 6
Empirical tests of theorized characteristics of Big 4 partners.

| | Big 4 partner versus senior manager | | Big 4 partner versus director | | Big 4 partner versus non-Big 4 partner | |
|--------------------------|-------------------------------------|-----------------------|-------------------------------|---------------------|--|-----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Economic Capital | | | | | | |
| New Client Public | 0.388 (1.420) | 0.438** (2.074) | -0.194 (-0.468) | -0.151 (-0.300) | 0.043 (0.143) | 0.129 (0.377) |
| New Client Private | 0.181** (2.508) | 0.136 (0.961) | 0.484*** (3.881) | 0.625** (2.250) | 0.978*** (6.085) | 0.911*** (4.548) |
| Retain Client Public | 0.443 (1.407) | 0.584* (1.758) | 0.678*** (3.525) | 0.835*** (3.873) | 0.447* (1.937) | 0.484* (1.950) |
| Retain Client Private | -0.068 (-0.163) | 0.383 (0.510) | -0.103 (-0.460) | -0.095 (-0.153) | -0.477*** (-4.570) | 0.017 (0.049) |
| Social Capital | | | | | | |
| Loyalty | 0.161 (0.820) | -0.163 (-0.450) | 0.087 (0.424) | -0.632 (-1.625) | 1.480*** (6.072) | 1.383*** (4.576) |
| Non Audit | -0.204** (-2.022) | -0.181 (-0.788) | -0.054 (-0.278) | -0.025 (-0.118) | 0.069 (0.820) | 0.501** (2.499) |
| XING Network | 0.157*** (3.159) | 0.217** (2.467) | 0.050 (0.515) | 0.175 (0.970) | 0.181*** (4.181) | 0.120 (1.479) |
| Service Club | 0.477*** (2.899) | 0.810** (2.258) | 0.220 (0.394) | -0.015 (-0.024) | -0.382*** (-3.185) | -0.332** (-2.014) |
| Running | -0.018 (-0.096) | -0.622*** (-6.013) | -0.094 (-0.313) | -0.151 (-0.319) | 0.006 (0.035) | -0.123 (-0.587) |
| Golf | 0.181 (1.500) | 0.115 (0.560) | -0.318* (-1.684) | -0.473* (-1.918) | 0.172 (0.575) | 0.137 (0.467) |
| Team Player | 0.003 (0.017) | 0.135 (1.145) | -0.182 (-1.135) | -0.052 (-0.268) | 0.140 (1.168) | 0.248 (1.377) |
| Cultural Capital | | | | | | |
| <u>Institutionalized</u> | | | | | | |
| Ph.D. | 1.038*** (5.236) | 0.922*** (2.600) | 0.320*** (2.898) | 0.944** (2.565) | -0.040 (-0.310) | -0.301 (-1.554) |
| Tax Advisor | 0.010 (0.066) | 0.027 (0.210) | -0.160 (-0.516) | 0.206 (0.428) | -0.535*** (-4.504) | -0.571*** (-2.658) |
| Foreign CPA | 0.338** (2.010) | 0.533** (2.400) | 0.413 (1.580) | 0.360 (0.979) | 0.472*** (3.216) | 0.209 (1.009) |
| <u>Embodied</u> | | | | | | |
| Ambitiousness | 0.020 (0.540) | 0.012 (0.318) | 0.114*** (4.027) | 0.104 (1.461) | 0.118*** (6.079) | 0.124*** (4.278) |
| Language | 0.079 (1.402) | -0.249 (-1.379) | 0.121 (0.857) | -0.086 (-0.292) | 0.079 (0.627) | 0.054 (0.415) |
| Meet or Beat | | 0.543 (1.125) | | 0.064 (0.082) | | 1.031* (1.870) |
| Going Concern | | 1.064 (0.819) | | -0.269 (-0.212) | | -2.609* (-1.872) |
| Demographics | | | | | | |
| Female | -0.390* (-1.827) | -0.360 (-1.149) | 0.216 (0.541) | 0.316 (0.375) | -0.066 (-0.681) | -0.443* (-1.811) |
| Foreign | -0.018 (-0.164) | 0.182 (1.135) | 0.033 (0.538) | 0.517** (2.184) | -0.067 (-0.882) | 0.178 (1.038) |
| Experience | 0.227*** (7.361) | 0.263*** (5.091) | 0.091*** (4.208) | 0.116*** (2.760) | 0.028** (2.496) | 0.042*** (3.410) |
| Client Control | | | | | | |
| Loss Engagements | | -0.935* (-1.858) | | -1.169* (-1.712) | | 0.949** (2.568) |
| Constant | -2.918** (-2.218) | -3.921*** (-2.788) | 3.195*** (4.300) | 2.422 (0.908) | 1.559** (2.158) | 1.349 (1.261) |
| Fixed Effects | Audit Firm | Audit Firm | Audit Firm | Audit Firm | - | - |
| Observations | 706 | 379 | 306 | 180 | 1,148 | 682 |
| McFadden R2 | 38.4% | 48.9% | 22.5% | 31.7% | 35.1% | 41.0% |

This table presents results comparing individual characteristics of Big 4 partners and Big 4 senior managers, Big 4 directors, and non-Big 4 partners (cross-sectional analysis). All results are based on cross-sectional probit regressions of model (1) at the auditor-level. For all columns, the dependent variable is a binary variable that takes the value of one for Big 4 partners and zero otherwise. All variables are defined in Appendix I. As not every auditor serves as signing auditor (in which case we are only able to measure audit quality), we present results with and without measures of audit quality. For Big 4 subsamples (columns (1) to (4)), we include audit firm effects. For Big 4 and non-Big 4 subsamples (column (5) and (6)), we do not include audit firm fixed effects due to a lack of variation of the independent variable in non-Big 4 audit firms. Standard errors are clustered at the audit firm level. *, **, and *** indicate two-tailed statistical significance at the 10, 5, and 1 percent level.

6.3. Multivariate results

Table 6 presents the results from the cross-sectional regression analysis. Columns (1) and (2) present results comparing Big 4 partners and Big 4 senior managers. We find positive and significant coefficient estimates for all categories of capitals as well as demographics. In terms of economic significance, we find strongest positive effects for winning a new public client (16.5 pps), being a member of a service club (31.3 pps), holding a Ph.D. (39.2 pps), and holding an additional foreign CPA licensure (20.2 pps). By contrast, we find strongest negative effects for female auditors (11.7 pps) and auditors who mention running as a hobby (18.8 pps). We do not find indications that partners provide better or worse audit quality than senior managers.

Table 6, columns (3) and (4) present results comparing Big 4 partners and Big 4 directors. We find significant coefficient estimates across all categories of capitals as well, but weaker results for social capital. In terms of economic significance, we find strongest positive effects for being the signing auditor of an existing public client (16.3 pps), winning a new private client (14.8 pps), holding a Ph.D. (13.6 pps), and having a foreign background (10.0 pps). We only find a significant negative effect for playing golf (12.7 pps).

Table 6, columns (5) and (6) present results comparing Big 4 partners and non-Big 4 partners. Again, we find significant coefficient estimates across all categories of capital. Interestingly, we find that Big 4 partners are less likely to issue a going concern modification and more likely to audit a client that marginally beats the zero earnings threshold compared to partners of non-Big 4 audit firms. In terms of economic significance, we find the strongest positive effects for working for the same audit firm since the beginning of the professional life (32.8 pps) and winning a new private client (25.1 pps). We find strongest negative effects for certification as tax advisor (12.2 pps) and issuing going concern modifications (43.9 pps).³² The results support that though partners in Big 4 and non-Big 4 audit firms provide similar tasks and services, they differ due to systematic differences between large and small audit firms (Lander et al., 2013; Ramirez, 2009).³³

Overall, the cross-sectional analysis provides results consistent with the longitudinal analysis. For economic capital, the cross-sectional results confirm the importance of winning public clients, but additionally emphasize the role of winning private clients and retaining public clients. One interpretation of this pattern is that partners have higher chances to make partner when winning public clients (longitudinal analysis) but can start to engage in winning both public and private clients after making partner

³² We note that economic significance of 43.9 pps for issuing going concern modifications indicates the effect for a change in likelihood for issuing no modification over a two-year period versus issuing modifications for all engagements over a two-year period.

³³ The cross-sectional design at the auditor level used for these analyses is particularly suitable for variables that are (largely) time-invariant, e.g., gender or holding a Ph.D. However, the cross-sectional analysis also includes time-variant variables, e.g., related to the client portfolio. To evaluate whether our findings for the time-variant variables are robust, we estimate a pooled cross-sectional regression at the auditor-year level extending the sample period to 2006–2013. To avoid coding an auditor as, for example, senior manager in some years and as Big 4 partner in other years, we code an auditor as a partner at a Big 4 audit firm if she or he works as partner at a Big 4 firm at any time within the sample period. We find that the results are largely unchanged. For the variables related to client portfolio, we tend to find stronger results. That is, we find significant effects that audit partners are more likely to win a public or a private client as well as to retain public clients compared to senior managers. Further, we observe that the clients of Big 4 partners are more likely to show small profits and less likely to receive going concern opinions than the clients of non-Big 4 partners.

(cross-sectional analysis). For social capital, the cross-sectional results provide some support for the importance of audit firm loyalty and service club membership revealed in the longitudinal analysis. Additionally, the cross-section suggests positive effects of network size, potentially due to auditors further developing their network after making partner. For cultural capital, we observe largely consistent results across both types of analysis for holding a Ph.D., having a foreign CPA licensure, and showing ambition for achieving a fast career track. Finally, the results of the cross-sectional analysis weakly support the glass-ceiling effects for females but do not identify it for foreigners.

7. Additional analyses and robustness tests

7.1. Data validity

The validity of our study depends on the reliability of the information provided by the auditors in their public profiles. One concern could be that individuals engage in self-representation by presenting an idealized self (Goffman, 1961). However, studies on self-representation show that users of business-oriented social network sites like XING or LinkedIn tend to present themselves authentically, not idealized (Sievers et al., 2015). One reason for this finding is that showing an idealized profile might have negative effects in case of a new job (offer) due to heightened expectations of the employer. Supporting this notion, Guillory and Hancock (2012) examine deceptions in LinkedIn profiles compared to traditional (offline) resumes using an experimental design. They find that online resumes are less deceptive than traditional resumes for information that is easy to verify, i.e., prior work experience.

Another concern could be that the amount of information provided is associated with auditor career level, resulting in spurious correlations. To address this issue, we define a score indicating how forthcoming auditors are in providing information, ranging from 0 to 5. The score assigns one point for each category for which the auditor provides information (categories are pre-defined by the social network site: academic education, qualification, languages, memberships, and interests). The average score is 4.05 for Big 4 partners and 4.16 for all others. The difference is statistically insignificant (p -value = 0.13, two-tailed). When removing all auditors with a score below 4 from the sample, we find largely robust results in both longitudinal and cross-sectional analysis for all variables gathered from the business-oriented social network size.

Finally, we compare characteristics of auditors that have a public profile on the business-oriented social network site, i.e. all auditors with a business-oriented social network profile prior to sample selection, to the general population of auditors in the professional register used for collecting business-oriented social network data. We observe that the average auditor with a profile is younger (44.0 years vs. 55.1 years), more often female (20.3 percent vs. 14.7 percent), and less likely to hold a Ph.D. (6.5 percent vs. 12.5 percent), and has less general auditing experience since passing the CPA exam ('Wirtschaftsprüferexamen') (9.7 versus 18.8 years) than the average auditors in the professional register without a profile. All the reported differences are significant using a two-tailed test.

7.2. Alternative variable definitions

In additional tests, we use alternative definitions for variables indicating economic capital. First, we split variables indicating new clients into those where the audit partner takes over the client from a (a) colleague or (b) from another audit firm. Using these two variables for winning new public clients, we find positive and

significant coefficients for both variables in the longitudinal analysis. In the cross-sectional analysis, we find significant coefficients for winning a new public client from another audit firm but not for winning a new client from a colleague. Second, we use metric instead of binary variables to proxy for economic capital and find robust results for winning new public clients in the longitudinal and cross-sectional analysis.

7.3. Control for auditors' age

Next, we control for a potential influence of auditors' age. In our main analysis, we use all available auditors. To test for a potential influence of age heterogeneity, we perform additional robustness tests. First, we exclude all auditors close to retirement age, i.e., auditors older than 55 years. Overall, we find robust results for the longitudinal and cross-sectional analysis with some weaker results for economic capital in the cross-sectional analysis. Second, we find robust results if we include auditor age instead of experience as an independent variable into the regression model. Third, the results remain robust when including age both in the first and second order to control for potential non-linear effects.³⁴

7.4. Availability of partner positions

Finally, we examine the influence of the availability of partner positions for our longitudinal design. Partner positions are scarce and often require the departure or retirement of a senior partner. Thus, not only individual auditor characteristics but also the availability of partner positions may influence the likelihood of a promotion. To proxy for this availability, we include a variable indicating the percentage of auditors within an office close to retirement, i.e., auditors older than 55 years. A higher percentage of auditors indicates a greater need for partner successor. To proxy for the demand for partner positions, we include a variable indicating office size, measured by the number of auditors in an office. Including these two variables as controls, we find similar results except for two variables that become insignificant (Ph.D., Tax Advisor).

8. Conclusion

This study investigates who makes partner in Big 4 audit firms. Despite the important role of audit partners in ensuring audit quality and developing the profession (Aobdia, 2019; Carter & Spence, 2014; Kornberger et al., 2011; Malsch & Gendron, 2011), little is known about the relative importance of different individual auditor characteristics for career success in Big 4 audit firms. While prior studies mainly use interviews and field studies, we conduct the first large scale study using archival data to provide quantitative evidence on the relative importance of different individual auditor characteristics for making partner.

Based on hand-collected data retrieved from a business-oriented social network site in two waves over a more than four-year period and additional interviews with Big 4 audit partners, we derive the following insights. First, we identify determinants of making partner using a longitudinal design. We find that economic, social, and institutionalized cultural capital as well as demographics matter for making partner. In particular, the findings show the importance of winning new public clients, of loyalty to the audit firm, of engaging in formal and informal networking activities, of holding credentials, and of showing

ambition. Moreover, we observe that female auditors and auditors with a foreign background have a lower likelihood of making partner. Finally, we do not find evidence that providing high audit quality influences the likelihood of a promotion. However, given the measurement error inherent in audit quality measures, we caution against overstating this result. Second, we employ a cross-sectional design to identify the unique characteristics of Big 4 audit partners compared to Big 4 senior managers, Big 4 directors, and non-Big 4 audit partners. We find that Big 4 partners have higher economic capital, but do not provide higher audit quality compared to all other groups. Overall, the results of the cross-sectional analysis are largely consistent with the results of the longitudinal analysis. In additional tests, we also examine the influence of self-representation in business-oriented social networks, of sample composition, and of variable definition on our results.

Our study makes several contributions to literature. First, we conduct the first large scale study using archival data to provide quantitative estimates on the incremental importance of different individual auditor characteristics for making partner in Big 4 audit firms. Second, we provide insights on auditors transitioning from one to another career level by tracking career levels of Big 4 auditors over time and examining determinants of making partner using data prior to a promotion. Third, we extend prior research regarding the identity of Big 4 partners using data for non-partners in Big 4 audit firms and partners at non-Big 4 audit firms from a business-oriented social network site. Moreover, we provide new evidence for the glass-ceiling effect for female auditors (Almer et al., 2012).

Our study is subject to caveats. First, we use a German setting as it offers the advantage of observing the client portfolio of auditors before making partner. The theory should largely generalize to other countries based on the notion that promotion requirements follow a global logic (Spence et al., 2015). However, we cannot rule out that the importance of some forms of capital differs across countries. In particular, our study shows that holding a Ph.D. is associated with career success in Germany, whereas other types of credentials probably play a more important role in other countries, e.g., having a degree at a *grande école* in France (Spence et al., 2015). Second, we use data from public sources to identify career movements over the period 2014–2018. Relying on public information raises problems due to potential biases from self-representation and data availability. Access to internal data of a Big 4 audit firm would allow for a more detailed and comprehensive examination of career movements over a longer period. Third, we focus on making partner due to their important role. However, a great deal of socialization within audit firms already takes place at lower career levels. Therefore, the lack of statistical significance for some variables may be attributable to lesser importance of different individual characteristics for higher compared to lower career levels. Fourth, some auditors may not strive for partner positions (Knechel et al., 2019). For example, we cannot disentangle whether auditors are less likely to make partner due to the promotion process or due to personal preferences for pursuing alternative career paths. Fifth, Big 4 audit firms offer equity as well as non-equity partner positions and making equity-partner requires a certain amount of shares in the partnership. Because we cannot disentangle different partner positions, we cannot test if there are different determinants for making equity or non-equity partner. Sixth, lack of more detailed data on auditors' client portfolio restrict us from disentangling accounting and audit quality. Therefore, we cannot rule out that the observed effects for our measures of audit quality are driven by client characteristics. Seventh, Kornberger et al. (2011) point out that "[...] networking with the 'right' people" is a prerequisite

³⁴ Including general experience in the first and second order, we find no indications of a non-linear effect and overall robust results.

for career success in auditing. In our study, we cannot observe network composition and network usage. Detailed data would help to evaluate the role of these factors in making partner. Finally, we acknowledge that some requirements for making partner might change over time. Our interviewees point out that in the near future abilities to apply new tools for data analytics may become important requirements for making partner.

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Appendix I. Definition of variables

| Variable | Definition | Source |
|---------------------------|---|--|
| Dependent Variable | | |
| Big 4 Partner | For longitudinal analyses: binary variable, 1: an auditor makes partner over the period 2014 to 2018; 0: otherwise. For cross-sectional analyses: binary variable 1: Big 4 partner; 0: otherwise. | Business-oriented social network site (BSNS) |
| Economic Capital | | |
| New Client Public | Binary variable, 1: an auditor won at least one new public client during the last two years, 0: otherwise. | Annual reports |
| New Client Private | Binary variable, 1: an auditor won at least one new private client during the last two years, 0: otherwise. | Annual reports |
| Retain Client Public | Binary variable, 1: an auditor acts as signing auditor for at least one existing public client during the last two years, 0: otherwise. | Annual reports |
| Retain Client Private | Binary variable, 1: an auditor acts as signing auditor for an existing public client during the last two years, 0: otherwise. | Annual reports |
| Social Capital | | |
| Loyalty | Binary variable, 1: an auditor works for the same audit firm since the beginning of her/his professional life, 0: otherwise. | BSNS |
| Non Audit | Binary variable, 1: an auditor worked at least once for a non-audit company, 0: otherwise. | BSNS |
| Network Size | Natural logarithm of contacts in BSNS. | BSNS |
| Service Club | Binary variable, 1: an auditor is a member of a service club, 0: otherwise. | BSNS |
| Running | Binary variable, 1: an auditor is a regular runner, 0: otherwise. | BSNS |
| Golf | Binary variable, 1: an auditor plays golf, 0: otherwise. | BSNS |
| Team Sports | Binary variable, 1: an auditor plays team sports, 0: otherwise. | BSNS |
| Cultural Capital | | |
| <u>Institutionalized</u> | | |
| Ph.D. | Binary variable, 1: an auditor holds a Ph.D.; 0: otherwise. | Professional register |
| Tax Advisor | Binary variable, 1: an auditor is certified tax advisor, 0: otherwise. | Professional register |
| Foreign CPA | Binary variable, 1: an auditor holds a foreign CPA licensure, 0: otherwise. | BSNS |
| <u>Embodied</u> | | |
| Ambitiousness | Negative of auditor age when passing the German CPA exam. | Professional register |
| Language | Binary variable, 1: an auditor speaks other foreign languages than English, 0: otherwise. | BSNS |
| Meet or Beat | Percentage of engagements showing small profits, i.e. 0% <= return on assets <3%, during the last two years. | Datastream/Amadeus |
| Going Concern | Percentage of going concern modifications issued across all engagements during the last two years. | Annual reports |
| Demographics | | |
| Female | Binary variable, 1: an auditor is female, 0: otherwise. | Professional Register |
| Foreign | Binary variable, 1: an auditor is born in a foreign country or the surname indicates a non-German nationality, i.e. likelihood of more than 50 percent based on name-prism.com , 0: otherwise. | Professional Register/ name-prism.com |
| Experience | Number of years since passing the CPA exam. | Professional register |
| Client Control | | |
| Loss Engagements | Percentage of loss engagements, i.e. return on assets <0%, during the last two years. | Datastream/Amadeus |

This Appendix defines all variables used in this study.

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