

Are CEOs Different? Characteristics of Top Managers

Preliminary and Incomplete

Steven N. Kaplan* and Morten Sorensen**

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ABSTRACT

We use a data set of over 2,500 executive assessments to study over thirty individual characteristics of candidates for top executive jobs – CEO, CFO, COO, President and others. Candidate characteristics can be classified by four primary factors: general ability, execution skills, charisma and strategic skills. CEO candidates tend to score higher on all four of these factors; CFO candidates score lower. Hired candidates score higher than all assessed candidates on interpersonal skills (for each job category) suggesting that such skills are of great importance in the selection process. Scores on the four factors also predict future career progression. Non-CEO candidates who score higher on the four factors are subsequently more likely to become CEOs. We do not find economically large differences in the four factors for men and women. We do find, however, that women are ultimately less likely to become CEOs and COOs, holding the four factors constant.

* University of Chicago Booth School of Business and NBER and ** Copenhagen Business School, CEPR, and NBER. We thank Geoff Smart, Randy Street and Alan Foster of ghSMART for providing the data and for helpful discussions and comments. We thank Roland Benabou for helpful comments. We also thank Donald Chi, Grace Duan, Fan Jiang, Arthur Klisz, Elaine Tang, Elyse Wummer, Emily Xiao and Stephanie Xiao for able research assistance. This research has been supported by the Fama-Miller Center, the Center for Research in Security Prices and the Booth Initiative on Global Markets. Morten Sorensen gratefully acknowledges funding by the Danish Council for Independent Research (“Det Frie Forskningsråd”) under the Sapere Aude program through grant number: DFF-4003-00095. The authors can be reached at skaplan@uchicago.edu and mso.fi@cbs.

There is a large management and popular literature as well as many anecdotes about how CEOs are different from other executives and what characteristics and abilities boards or shareholders should look for in a CEO. Given the difficulty in measuring CEO characteristics, however, there is little systematic work on this topic. Adams et al. (2014) study this question using cognitive and non-cognitive test data measured at age 18 on a large sample of Swedish men. They find that CEOs score higher on the cognitive and, particularly non-cognitive tests than other high-caliber professionals – doctors and lawyers. Furthermore, larger companies hire the more talented CEOs. KKS (2012) study 316 CEO candidates for venture capital and private equity-funded companies using detailed assessments of the CEOs. They find that CEOs are distinguished by two primary factors, general talent and execution skills (versus team or interpersonal skills). They find that subsequent success is related to execution skills.

This study extends KKS (2012) by extending the dataset to over 2,500 assessments of top executives including, but not exclusively CEOs. As in KKS (2012), the executives were assessed when they were considered for a managerial position. The dataset contains information about thirty specific individual characteristics, for individual candidates, who were considered for different managerial positions, across companies governed under different forms of ownership. Specifically, each candidate's personality is evaluated along thirty specific characteristics, and the dataset contains information about the candidate's family and educational background and career history. Candidates were considered for several managerial positions (e.g., CEO, CFO, and COO). Candidates were assessed ex-ante, when they were considered for a given position. By tracking the candidate's subsequent career, we learn both whether they were actually hired for the position for which they were considered and about their future career path, including whether they ultimately became a CEO of any company.

The dataset allows us to investigate a number of issues that have not previously been addressed in the literature. First, we are able to study and document substantial differences in the attributes of candidates considered for different managerial positions. On many dimensions, CEOs and CFOs are diametrically opposites. Second, we investigate who is actually hired. Hired candidates score higher than assessed candidates (hired or not) on interpersonal skills for each type of position (CEO, CFO, etc.), suggesting that such skills are of great importance in the selection process. Third, we consider whether it is possible to predict who ultimately becomes a CEO. In our initial analysis, we establish the personality / attribute profile of the typical CEO. In our subsequent out-of-sample analysis, we analyze the pool of executives who were not CEO candidates in our sample. We find that executives with personalities that more closely align with the CEO profile are more likely to ultimately become CEOs. Fourth, we evaluate whether CEO personalities vary over different forms of ownership – private equity, venture capital and public. Finally, we are able to evaluate differences and similarities between female and male executives.

Theorists have long assumed that CEOs have heterogeneous talents and abilities that map into firm performance. For example, Rosen (1981), Murphy and Zabochnik (2004), and Gabaix and Landier (2008) all model CEOs with different qualities. Empirical studies confirm that managerial heterogeneity is important for corporate actions and performance. Bertrand and Schoar (2003), Adams, Almeida, and Ferreira (2005), and Bennedsen, Pérez-González, and Wolfenzon (2008) find evidence that specific CEOs matter. However, neither theoretical nor empirical studies provide much guidance concerning which particular characteristics and abilities are important for corporate governance and performance.

A few theories identify specific managerial characteristics. Bolton, Brunnermeier, and Veldkamp (2009) develop a theory of leadership that contrasts managerial resoluteness against

communication and listening skills. Other studies focus more narrowly on managerial overconfidence. Heaton (2002) argues that overconfidence in the form of managerial optimism is unambiguously bad, causing either over- or underinvestment. In contrast, Gervais, Heaton, and Odean (2009) present a model in which overconfidence can increase value by mitigating moral hazard and aligning incentives. Empirically, Malmendier and Tate (2005, 2009) find that overconfident CEOs have higher investment-cash flow sensitivities and are more likely to engage in value-destroying mergers. Graham, Harvey, and Puri (2008) provide additional empirical evidence that CEO behavior is related to measures of overconfidence, optimism, and risk aversion. How overconfidence relates to subsequent performance, however, is unclear.

To conduct the above analysis, we use detailed assessments of over 2,500 candidates considered for executive positions in a wide variety of firms. The assessments were performed by ghSMART, a firm that specializes in assessing top executives. The assessments are based on four-hour structured interviews. Each interview resulted in a report with a detailed description of the candidate's background and characteristics. The reports include ratings of 30 specific characteristics and abilities, described in Table A-1.

To identify the main dimensions of variation in managerial characteristics, we use factor analysis — the traditional empirical approach in studies of personality traits (see Fabrigar et al. (1999) and Borghans et al. (2008)). We find four dominant factors that have intuitive interpretations. The first two factors are very similar to those we found in KKS (2012). The first factor loads positively¹ on all characteristics and appears to represent a candidate's overall talent. This factor can be interpreted as analogous to the general measure of managerial talent and

¹ Note that the sign and magnitude of factor loadings are unidentified and cannot be interpreted. Formally, a factor is a vector that is only identified up to scale and sign. It classifies characteristics that tend to vary together and defines a scale that measures this covariation, but the scale is arbitrary. If one were to, say, reverse the signs and double the magnitudes of all the individual loadings in one factor, this would change the scale yet lead to identical statistical inference about the effects of all factors.

ability assumed by theorists such as Rosen (1981). The second factor loads positively on Respect, Open to Criticism, Listening Skills, and Teamwork, which reflect communication and interpersonal abilities, and loads negatively on Fast, Efficiency, Aggressive, Persistence, and Proactive, characteristics describing capabilities that appear to be related to resoluteness and execution skills. The importance of the second factor suggests that the distinction between resolute and empathetic CEO types emphasized by theorists is, in fact, important in practice. We interpret this factor as measuring (negatively) execution. The third factor loads negatively on enthusiasm, persuasion, aggressive and proactive while loading positively on analytical skills, organization and attention to detail. We interpret this factor as measuring (negatively) charisma. The fourth factor loads positively on strategic vision, brainpower and creativity while loading negatively on attention to detail, holds people accountable and organization. We interpret this factor as measuring strategic and creative ability.

The paper proceeds as follows. Section I describes our data and sample. Section II explores the main dimensions of variation in the directly measured executive characteristics and their relation to subjective classifications. Section III considers the relation of the executive characteristics to the executive positions. We also measure how the candidates who were actually hired differ from all of those who were interviewed. Section IV studies the relationship between executive characteristics and subsequent career positions. Section V considers different CEO characteristics for companies with different governance forms. Section VI concludes.

I. Data

A. Assessments

Like KKS (2012), we rely on a proprietary data set of detailed assessments performed from 2000 to 2013 by ghSMART, a consulting firm that focuses on assessing top management candidates. PE investors, company boards or company management engage ghSMART to assess candidates both for new roles and for their existing roles. The majority of the executives are candidates for jobs at companies involved in PE transactions, typically companies acquired by venture capital, growth equity, or buyout funds. Unlike the sample in KKS (2012), the sample includes a large number of candidates for non-PE-funded companies, both publicly-traded and private companies. More importantly, the sample includes candidates evaluated for non-CEO positions. In most of the analysis, we focus on the subset of candidates assessed for CEO, CFO, and COO positions. We use CXO to denote CEO, CFO, or COO positions (the number of CXO candidates is the union of candidates assessed for CEO, CFO, and COO positions). We use ALL to denote all the candidates in the sample, including candidates for positions that are neither CEO, CFO, nor COO.

The assessments were performed by the private company ghSMART. ghSMART is not an executive recruiting firm. ghSMART does not suggest which candidate(s) to interview for a given position, but assesses the specific candidate(s) under consideration. ghSMART does not receive a fee contingent on whether a candidate is hired. It has no apparent incentives to deliver biased assessments. According to ghSMART, its main objective is to provide accurate assessments to sustain its reputation and generate repeat business. No candidate has ever refused to participate in an interview or suggested that it presented an unreasonable time burden or intrusion into the candidate's privacy.

The assessments are based on four-hour structured interviews, resulting in a 20- to 40-

page report. During the interview, the interviewer² asks for specific examples of the candidate's actions and behavior at every job and life stage, starting with the candidate's childhood and progressing through the candidate's education and subsequent career path. The interviewer then extracts a range of qualitative and quantitative information from this actual behavior. In particular, the candidate is scored on thirty specific characteristics in five general areas, defined by ghSMART as Leadership, Personal, Intellectual, Motivational, and Interpersonal. Table A-1 repeats table I from KKS (2012) and presents an excerpt from ghSMART's internal guidelines that describes the thirty characteristics along with the actual behaviors that determine the scoring for each of them.³

The reports also include information about the candidates' educational and family backgrounds, and some reports include scores of other characteristics that are specific to the particular company or situation. Because these characteristics are not consistently and systematically scored across candidates, we do not include them in our analyses.

For each of the thirty characteristics, the report scores the candidate with a letter grade from D (lowest) to A+ (highest), reflecting the extent to which the candidate past behavior reflects the nature of the particular characteristic, not whether the characteristic is desirable. In our analysis, convert the letter grades to numerical scores. We code grades of B or below as 1. We combine these grades because there are relatively few of them. We code grades of A and A+ as 4, as there are relatively few A+'s. We code grades of B+ as 2 and grades of A- as 3.

An important concern is whether it is possible for the candidates to “game” or “fake” the interviews by providing answers that they believe will help them be hired, even if they do not

² The ghSMART interviewers generally hold doctoral degrees or degrees from top MBA programs, and have worked at consulting firms (such as McKinsey & Co., Bain, and Boston Consulting Group). ghSMART reports a high degree of consistency of assessments across interviewers. When we include interviewer fixed effects, as indicated in the tables, the magnitude and statistical significance of the main coefficients are largely unchanged.

³ Smart and Street (2008) provide additional information and detail about ghSMART's interviewing methodology.

reflect their actual personalities. We address this concern in KKS (2012). In particular, it is difficult to reconcile the results in KKS (2012) with significant faking. If faking caused the assessments to be uninformative, they would find no relationship between the assessments and subsequent performance. In fact, KKS (2012) find strong relationships between the assessments and subsequent performance.⁴

A more subtle effect might arise if candidates who are better managers are also better at faking the assessments. In this case, characteristics that are more positively related to the hiring decision should also be more positively related to performance. In fact, KKS (2012) find that some characteristics that are related to hiring are unrelated to performance.

For each candidate, we also code several other variables. We note whether the candidate is an internal candidate or an outside candidate. We note the gender of the candidate. We consider the industry of the company and the candidate's previous experience in this industry. When possible, we include the size of the company. Because many of the companies are private, it is not possible to measure size precisely. Instead, we categorize companies as either start-up, companies with sales below \$100 million, with sales between \$100 million and \$1 billion, and with sales above \$1 billion.

B. Hiring Decisions and Subsequent Career Trajectory

For a candidate's subsequent career following the interview, we code the candidate's subsequent career path, including whether the candidate was hired for the position for which he or she was assessed. We obtain the subsequent career primarily from public sources. We rely

⁴ Additionally, albeit anecdotally, several PE firms told us that they do not make any investments without a CEO assessment of the type ghSMART provides. While economic theory suggests that it may be rational for candidates to attempt to misrepresent their types, economic theory also prescribes that it would be irrational for investors to rely on such assessments if they were uninformative. Assessments also are costly: they require at least four hours of a candidate's time and a monetary payment by the investor that exceeds \$10,000.

first on LinkedIn, which has extremely good coverage of corporate executives. We also use CapitalIQ, Zoominfo.com, LexisNexis, and general Internet searches. In a few cases, we use information from KKS (2012) obtained from surveying some of the PE firms that engaged ghSMART to assess CEO candidates.

C. Sample Descriptive Statistics

Table 1 shows the distribution of candidates in the sample. Panel A shows that the sample contains more than 2,500 assessments, taking place between 2000 and 2013, with over 2,400 occurring between 2002 and 2011.

Panel B presents additional information on the candidates. About 10% of the candidates are female. Only 5.3% of CEO candidates, 8.0% of CFO candidates, and 8% of COO candidates are female.

The average candidate has worked for his or her current company for an average of 4.9 years out of an average career of 23.5 years. The median number of years spent with the company is three. Roughly one-quarter of the candidates are outsiders, i.e., they have not worked for the company that is assessing them. The average candidate has worked for five companies in his or her career. Almost 60% of the assessed candidates were subsequently hired for the position for which they were assessed.

Table 2 presents more information on the assessed candidates. Panel A presents the distribution of positions and types of ownership. The executives in our sample are assessed for a diverse set of positions. Roughly $\frac{1}{2}$ the sample is being assessed for the position of CEO, CFO or COO. About 31% of the candidates are assessed for CEO positions; 13% for CFO; and 6% for COO. Almost 1,000 candidates were assessed for jobs that can be considered functional

level jobs. About 40% of these were financial jobs such as controller or vice president of finance. Slightly more than 25% were in operations while slightly fewer than 25% were in marketing.

The sample also varies by ownership form. Just over half of the sample comes from private equity funded companies – buyout and growth equity. An additional 15% come from venture capital funded companies. Unlike KKS (2012), this sample also includes executives from publicly owned companies who constitute 11% of the sample.

Panel B presents the relationship of hiring outcomes to whether the candidate is an insider (or incumbent) in the position. Roughly 55% of the assessed executives are hired for the position. Insiders are substantially more likely to be hired (or retained) than outsiders.

We also asked the research assistants who coded the assessments to provide their subjective assessment of the candidates based on just the qualitative descriptions of the candidates' past behavior from the reports. The assistants rated the candidates on five characteristics: whether the executive came across as a nice person, a risk taker, reserved or outgoing, good at sales, and whether the executive's career path was narrow or broad.

Panel A of table 3 reports these subjective assessments by position. The research assistants classified 78% as nice people and outgoing, 65% as good at sales, 58% as risk takers and 35% as having broad careers. These subjective characteristics provide some overall background for our interpretation of the factor scores, as discussed below, but the subjective characteristics are not used in our formal analysis. CEOs are significantly more likely and CFOs significantly less likely to be perceived as risk takers, as outgoing and as good at sales. Panel B reports the subjective assessments of all candidates by the ownership status of the assessing company. We characterize ownership status as VC-funded, growth equity-funded,

buyout-funded, public, other private and investor. VC-funded firms are more likely to assess risk takers while public companies are less likely to assess outgoing candidates and candidates with broad career paths.

Panel C reports the subjective assessments of CEOs by the ownership status of the assessing company. Buyout firms seem less likely to assess risk takers.

These comparisons are intended to be suggestive. In the next section, we show how these perceptions compare to the ghSMART ratings and the factors we uncover in the data.

II. Characteristics and the Four Factors of Managerial Personalities

Table 4 presents the average scores for the thirty characteristics for candidates assessed for the positions CEO, CFO, COO, and CXO. The overall average scores for each position are roughly equal, with the exception of CFOs who score lower overall. The similar averages for each position suggest that the interviewers rate candidates on a similar scale within each job type. This potentially makes it more difficult for the analysis to find differences across job types.

The scores are highly correlated across characteristics, as documented in KKS (2012), making it difficult to infer the effects of individual characteristics. It is not possible to include all 29 characteristics as explanatory variables in a multivariate regression due to the resulting multicollinearity. Like KKS (2012), we therefore use a factor analysis to isolate the main dimensions of variation in the characteristics.

For some executives, ratings for one or two of the thirty characteristics are missing. Rather than discarding the executive from the sample, we estimate the expected rating the executive would have received on the characteristic using the characteristics for which we have ratings.

A. Factor Scores

Panels A and B of Table 5 shows the results of the factor analysis. Panel B shows the eigenvalues of the first five factors. An eigenvalue exceeding one indicates that the factor is valid, and based on these eigenvalues, we focus on the first four factors from the factor analysis.

For the four factors, the factor loadings for the individual characteristics are shown in Panel A. All four factors have natural interpretations. The first two factors are similar to those found in KKS (2012), which used a much smaller sample size (of 316) and therefore did not have sufficient statistical power to reliably estimate factors three and four.

Panel B of Table 5 shows that the first factor captures 58.0% of the variation. Panel A indicates that this first factor has positive loadings on all of the individual characteristics, ranging from a loading of 0.29 on Integrity to a loading of 0.74 on Proactive. We therefore interpret this factor as a general measure of the candidates' talent or ability.⁵ This structure of the first factor is commonly encountered in factor analysis, and it reflects the empirical fact that all the characteristics tend to move together.

The second factor, capturing 28.0% of the variation in the characteristics, has two distinct sets of loadings. The most positive loadings, in decreasing order, are for the characteristics Treats People With Respect, Open to Criticism, Listening Skills and Teamwork. These characteristics appear to capture a candidate's interpersonal skills. In contrast, the most negative loadings are on the characteristics Aggressive, Moves Fast, Proactive, Holds People Accountable and Removes Underperformers, characteristics that arguably reflect execution ability.

⁵ The pattern is also consistent with individual interviewers generally rating candidates higher or lower. In the analysis below, the results are largely unchanged when we include interviewer fixed effects.

The second factor, therefore, appears to sort candidates into those with more interpersonal skills versus those with greater execution ability. It assigns positive scores to candidates with greater interpersonal abilities and negative scores to candidates with greater resoluteness and execution abilities. The importance of this factor is consistent with the analysis in Bolton, Brunnermeier, and Veldkamp (2009) that contrasts resoluteness and overconfidence with teamwork and interpersonal skills.

Panel B in Table 5 shows that the third factor explains 9.4% of the variation in the characteristics. Panel A shows that the most negative loadings on this factor are Enthusiasm, Persuasion, Aggressive, Proactive, and Moves Fast. We interpret these characteristics as being consistent with more charismatic candidates. In contrast, the most positive loadings – Analytical Skills, Attention to Detail, Organization and Brainpower – are characteristics that are associated with candidates with stronger bureaucratic and administrative skills. We thus interpret the third factor as sorting candidates between those with more charismatic personalities, who have a negative score on this factor, and candidates with a more bureaucratic and administrative leaning, who have a positive score on this factor.

Finally, the remaining fourth factor explains 6.9% of the variation in characteristics. The most positive loadings are on the characteristics Strategic, Brainpower, Analytic and Creative while the most negative loadings are on the characteristics Holds People Accountable, Efficient, Attention to Detail, and Organized. This factor appears to sort candidates into those who have stronger creative and strategic characteristics versus those who have a more managerial and organizational focus.

Overall, the results are consistent with the factor analysis in KKS (2012), which was performed on a smaller sample of 316 candidates for CEO positions. The first two factors are

qualitatively similar. The candidates vary in their general level of ability and in their tilt towards either interpersonal or execution-related characteristics, as captured by the first two factors. In our new sample, the larger number of observations for a wider variety of positions leads to more intuitive interpretations for the third and fourth factors. The candidates vary in their level of charisma (versus bureaucracy) and their ability to be strategic and creative (versus managerial).

B. Factors Scores and Subjective Ratings

Panel C of Table 5 shows pairwise correlations of the four factors with the subjective ratings of risk-taking, nice person and personality. There is a strong correlation between the subjective ratings and the candidates' scores on the four factors. Executives perceived as nice people score significantly higher on talent (factor 1), interpersonal (factor 2) and charisma (negative factor 3). Interestingly, the subjective rating of a candidate as a nice person is very strongly (negatively) related to the candidate's score on factor two. The correlation coefficient of 0.55 indicates that candidates with strong "interpersonal" characteristics, as captured by factor two, are very likely to be perceived as nice people. This strongly suggests that high interpersonal scores (factor 2) are associated with characteristics that make the executive seem nice or likeable.

Executives perceived as greater risk-takers score significantly higher on talent (factor 1), execution (negative factor 2), charisma (negative factor 3) and strategic / creative (factor 4).

Executive perceived as outgoing score significantly higher on talent (factor 1), charisma (negative factor 3) and strategic / creative (factor 4). The correlation with charisma is economically large at -0.21 while the correlation with strategic / creative is economically smaller at 0.05.

Finally, we find that the correlations between the factor scores and gender are small, both economically and statistically. None of the correlations is statistically significant.

III. Executive characteristics and executive positions

A. Factor Scores for different positions

Panel A of Table 6 reports the average factor scores for interviewed candidates. It is clear that CEOs and CFOs are different; for each of the four factors, the average scores of CEO and CFO candidates have opposite signs. CEO candidates score highest on talent (factor 1), execution (negative factor 2), charisma (negative factor 3) and strategic / creative (factor 4). CFO candidates, on the other hand, have low scores on talent, execution, creative / strategic and, particularly, charisma.

Table 6 also lists factor scores for candidates for a COO or president position, those who are candidates for CXO, (CEO, CFO or COO) and all candidates. COO and president candidates tend to have factor scores intermediate between the CEOs and the CFOs (except for factor 4). These results are consistent with CEOs as being different from other executive in economically intuitive ways.

It also is worth noting, that consistent with our interpretation and the validity of these measures, the relatively few (33) founders assessed score extremely high on charisma (negative factor 3).

B. Factor scores for candidates who are hired

Panel B of table 6 reports the average factor scores for candidates who are hired. Figure 1 shows the average factor scores for candidates and hired executives graphically. Panel A of

table 7 presents probit regressions and statistical significance levels for the differences. The coefficients are marginal effects. A value of 1.0 indicates there is no marginal effect. A value above 1.0 measures the increase in probability of being hired from a one standard deviation increase in the factor.

The first set of regressions includes industry and year fixed effects. The second set of regressions includes years the executive has been in the interviewing company's industry, a dummy for whether the executive already works for the company, and a dummy for gender (female).

For all groups except for COOs, those who are hired score significantly higher on talent than all candidates who are interviewed. The coefficient for COOs is also positive, but is not significant. Regression 6 indicates that a one standard deviation increase in talent is associated with a 24.8% increase in the likelihood a CEO is hired.

For all groups except CFOs, those who are hired have significantly higher interpersonal skills (versus execution skills) than all who are interviewed. The coefficients for CFOs are positive but are not significant. Regression 6 indicates that a one standard deviation decrease (increase) in execution (interpersonal) is associated with a 17.9% increase in the likelihood a CEO is hired. This suggests that interpersonal skills are valued differently in the hiring decision from their value in identifying candidates. This is particularly interesting and puzzling for CEOs because CEO candidates are distinguished by execution skills and because KKS (2012) find that execution skills are strongly correlated with success for private equity CEOs.

For all groups except CFOs, those who are hired score significantly higher on charisma (more negatively) than the average candidate interviewed without the additional three controls. When the years in industry, insider and gender variables are included, only the coefficient on

COOs remains significant. This may be a consequence of incumbents tending to be perceived as more charismatic and less managerial than outsiders.

None of the coefficients for any of the executive groups is significant for factor 4. This suggests that greater strategic and creative ability does not affect hiring once a candidate is considered for a job.

These results suggest that greater talent and, particularly, greater interpersonal skills help candidates land the jobs for which they are being considered. It also is worth pointing out the results for two of the control variables. Incumbent or insider candidates are significantly more likely to be hired for all positions. Gender is insignificant for all candidates and all positions.

Panel B divides the executives into insiders / incumbents and outsiders. The results are qualitatively similar to those for the combined sample. The one difference perhaps, is that talent appears to be more important for outside hires.

Panel C adds additional explanatory variables of years in industry, risk taker, (outgoing) personality, good at sales and broad or narrow career path to the regressions in Panel B. The patterns remain largely the same as in panel B. The one variable of interest is that risk-taking outsider CEOs are more likely to be hired.

Finally, panel D repeats the analysis in panel A for companies of different size. Small companies have sales less than x ; large companies have sales greater than x ; medium companies have sales in between the small and large cutoffs. The results are qualitatively similar for companies of all sizes.

Overall, these results suggest that candidates with greater talent and greater interpersonal skills are more likely to obtain the jobs for which they are being considered.

IV. Executive Characteristics And Subsequent Career

The previous results indicate that executives in different positions have quite different characteristics and skills. In this section, we consider whether those particular characteristics and skills are predictive of future career progression.

In addition to undertaking this analysis because it is inherently interesting, the analysis also is an implicit test of the results in the previous section. It is possible that the results in the previous section are biased or spurious because the assessments are biased to pick up characteristics associated with particular positions. For example, the assessors might rate CEO candidates higher on charisma type characteristics because they are expecting the CEO candidates to have them. One way to assess the validity of the assessments is to see whether the assessed characteristics predict that a candidate will obtain a different job in the future. We are particularly interested in understanding whether the characteristics of non-CEO candidates predict if a candidate will subsequently become a CEO. This also is important in practice because it can confirm that different positions really do have different characteristics and skills.

For each of the candidates in our sample, we used LinkedIn, CapitalIQ and other Internet searches to determine their subsequent career path. We noted whether the candidates have subsequently become a CEO, COO or CFO. Table 8 reports descriptive statistics on the candidates divided by whether or not they are interviewed for a position with a given title, and by those who eventually end up with position with this title. Panel A reports whether candidates eventually become CEOs based on whether the candidates interviewed for a CEO position in our sample. Over 78% of the candidates who interviewed for CEO jobs, ultimately became CEOs. Slightly over 10% of the candidates who did not interview for CEO roles in our sample eventually became CEOs. Panel B reports similar results for CFOs; panel C, for COOs. Panel D

reports how often CFOs become CEOs and finds that just under 5% of CFO candidates ultimately have become CEOs.

A. Probit Analysis

In the probit regressions in Table 9, the dependent variable is an indicator for whether the candidate eventually achieves an executive position as indicated (CEO, COO, or CFO). The independent variables include the candidate's observed characteristics at the time of the interview. In each specification, the sample is restricted to candidates that are interviewed for positions with titles that are not the indicated executive position eventually reached. In the first three regressions, we use industry and year fixed effects, but exclude additional control variables. In the second three regressions, we add years in industry and dummies for gender and whether the candidate was an insider / incumbent.

In regression 1 of table 9, the likelihood of becoming a CEO is significantly related to all four factors with the expected signs. The likelihood of an executive subsequently becoming a CEO increases with talent (factor 1), execution (negative factor 2), charisma (negative factor 3) and strategic / creative (factor 4). A one standard deviation increase in the factor is associated, respectively, with a 19.8%, 16.5%, 13.5% and 16.7% increase in the likelihood of becoming a CEO.

Regression 2 of table 9 indicates that candidates who are less charismatic (and more bureaucratic) are significantly more likely to become CFOs. Regression 3 indicates that more talented and less strategic executives are more likely to become COOs.

Regressions 4 to 6 that include the three additional control variables are qualitatively similar to those in the first three regressions.

Overall, these results strongly support the validity of the assessments and our earlier results on executive characteristics. CEOs tend to be more talented, more execution-oriented, more charismatic and more strategic. Non-CEOs with those characteristics are more likely to become CEOs. The different results for CFOs (versus CEOs) provide additional support for the validity of the assessments. The results strongly suggest that different characteristics and factors are relevant for different positions.

These results also suggest that it is possible to identify predict which executives are more likely to succeed in the future.

The results on gender in regressions 4 to 6 are also notable. Holding talent and skills constant, women are significantly less likely to become CEOs and COOs. They also are less likely to become CFOs, but the coefficient is not significant.

V. Executive Characteristics across governance forms

[TBD]

VI. Summary and Conclusion

Using a data set of over 2,500 executive assessments for top executive jobs – CEO, CFO, COO, President and others – we find that candidate characteristics can be classified by four primary factors: general ability, execution skills (versus interpersonal skills), charisma and strategic skills. This suggests that executive skills / characteristics can be measured and classified. The first two factors are similar to those for a smaller sample of CEO candidates in KKS (2012).

CEO candidates tend to score higher on all four factors while CFO candidates score lower. This suggests that CEOs are, indeed, stronger on all of these factors. This is consistent with the results in Adams et al. (2014) who find that CEOs are more talented on average, and larger companies hire the more talented CEOs.

Scores on the four factors also predict future career progression. In particular, non-CEO candidates who score higher on the four factors are subsequently more likely to become CEOs. This provides strong evidence that the assessments provide valid measures of talent. It also provides strong evidence that executive talents can be assessed.

We do not find economically large differences in the four factors for men and women. We do find, however, that women are ultimately less likely to become CEOs and COOs, holding the factors constant.

Finally, hired candidates of all types score higher than assessed candidates on interpersonal skills. This suggests that interpersonal skills are valued differently in the hiring decision from their value in identifying candidates. This is particularly interesting for CEOs given that CEO candidates are distinguished by execution skills, that execution skills predict future CEOs and the result in KKS (2012) that execution skills are strongly correlated with success. One interpretation is that interviewers overweight interpersonal skills in making hiring decisions.

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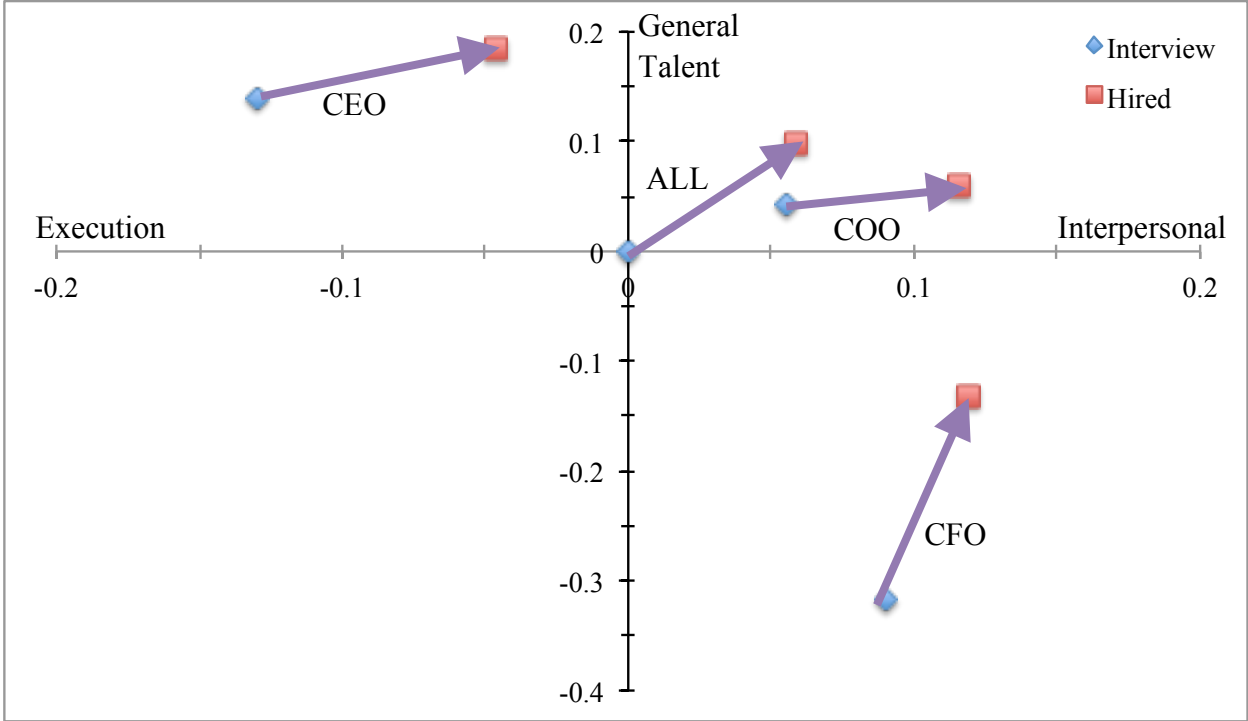
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Figure 1: Interviewed versus Hired

Panel A: Factor 1 (General talent) and Factor 2 (Execution vs. Interpersonal)



Panel B: Factor 3 (Charisma vs. Analytical) and Factor 4 (Managerial vs. Strategic / Creative)

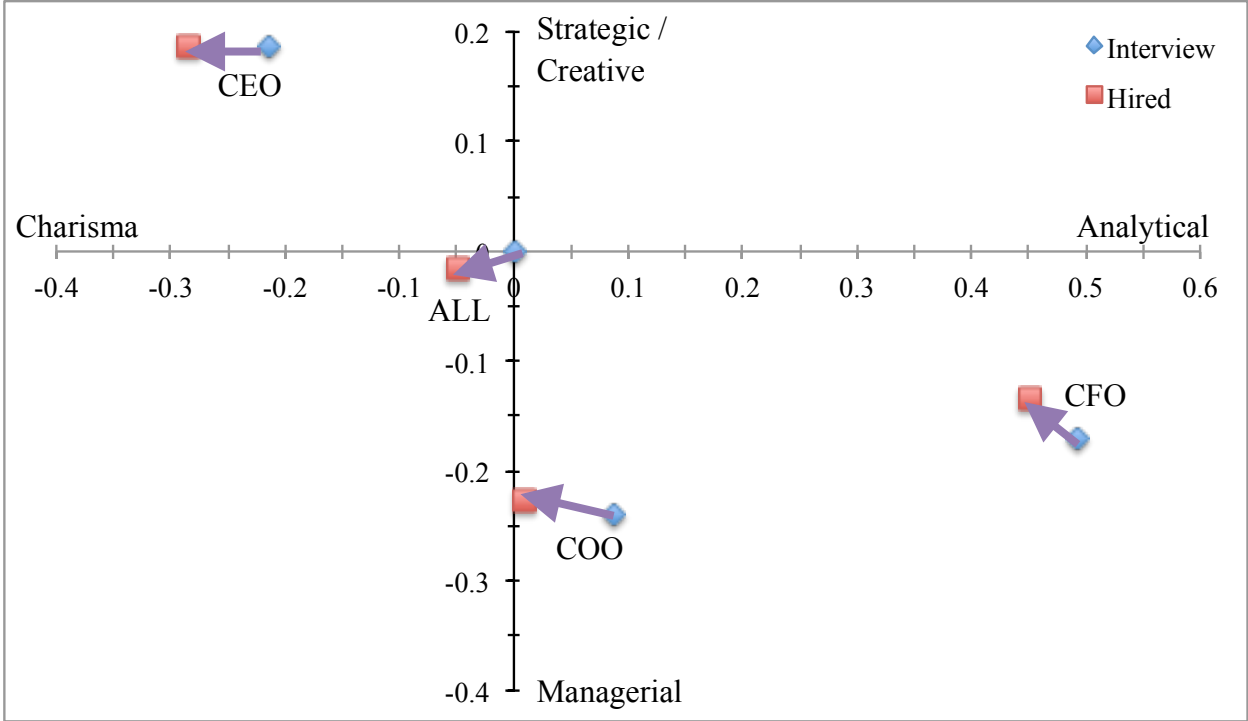


Table 1: Descriptive Statistics

Panel A: Candidates interviewed per year

Year	CEO	CFO	COO	CXO	ALL
2000	5	0	0	5	5
2001	35	14	10	59	95
2002	62	31	14	107	198
2003	72	21	13	106	223
2004	91	22	16	125	216
2005	80	34	16	130	238
2006	71	39	19	128	290
2007	94	49	18	160	333
2008	85	38	12	134	244
2009	70	28	9	106	225
2010	73	29	16	117	244
2011	73	33	22	126	268
2012	1	0	0	1	1
2013	0	0	0	0	6
N/A	5	0	0	5	17
Total	817	338	165	1,309	2,603

Panel B: Averages of main variables and number of observations by position

	CEO		CFO		COO		CXO		ALL	
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Yrs. Working	24.8	(793)	23.5	(332)	23.8	(159)	24.4	(1274)	23.5	(2511)
Yrs. Current Co.	5.1	(770)	3.4	(322)	4.1	(155)	4.6	(1237)	4.9	(2449)
Number of Co's	4.7	(797)	4.9	(331)	4.8	(159)	4.8	(1277)	4.6	(2515)
Female	5.0%	(816)	8.3%	(338)	7.9%	(165)	6.3%	(1308)	10.1%	(2601)
Military	10.7%	(801)	5.4%	(332)	11.3%	(159)	9.5%	(1282)	9.3%	(2524)
Insider	44.8%	(801)	27.9%	(333)	52.5%	(162)	41.5%	(1286)	41.3%	(2562)
Hired	60.0%	(785)	54.3%	(328)	71.7%	(159)	59.9%	(1262)	59.5%	(2422)

Table 2: Descriptive Statistics Panel A shows number of assessments by position and ownership type. It is common that a candidate is assessed for several potential positions, so for each row, the columns add up to more than the total reported in the last column.

Panel A: Distribution of positions and ownership

	CEO	CFO	COO	CXO	ALL
VC	47% 188	11% 42	6% 22	63% 251	396
Growth Equity	31% 99	18% 57	13% 41	60% 194	324
Buyout	37% 432	16% 191	6% 73	58% 690	1,180
Public	12% 36	3% 10	4% 13	20% 59	289
Other Private	23% 48	13% 27	7% 14	42% 88	211
Investor	6% 12	6% 11	1% 2	13% 25	198
N/A	40% 2	0% 0	0% 0	40% 2	5
Total	31% 817	13% 338	6% 165	50% 1309	2,603

Panel B: Insiders and outsiders versus hired

	Not Hired	Hired	N/A	Total
Outsider	795	607	103	1,505
Insider	175	815	67	1,057
N/A	12	18	11	41
Total	982	1,440	181	2,603

Table 3: Distribution of Subjective Traits by Position For each job title, the tables shows the subjective traits nice person, risk taker, personality (“outgoing” coded as one and “reserved” coded as zero), good at sales, and career path (“broad” coded as one and “narrow” coded as zero).

Panel A: Subjective Traits for Assessed Candidates

	CEO	CFO	COO	CXO	ALL
Nice Person	77%	76%	79%	77%	78%
Risk Taker	64%	49%	59%	60%	58%
Personality	79%	68%	73%	76%	74%
Good at Sales	79%	33%	62%	67%	65%
Career Path	40%	32%	38%	38%	35%

Panel B: Subjective Traits for Assessed Candidates

	VC	Growth Equity	Buyout	Public	Other Private	Investor	ALL
Nice Person	76%	78%	80%	79%	74%	75%	78%
Risk Taker	64%	59%	58%	55%	58%	50%	58%
Personality	72%	78%	76%	64%	75%	69%	74%
Good at Sales	66%	61%	67%	66%	74%	51%	65%
Career Path	44%	40%	36%	26%	26%	28%	35%

Panel C: Subjective Traits for Assessed CEOs

	VC	Growth Equity	Buyout	Public	Other Private	Investor	ALL
Nice Person	77%	74%	80%	69%	63%	75%	77%
Risk Taker	70%	66%	61%	72%	66%	50%	64%
Personality	76%	83%	80%	77%	80%	75%	79%
Good at Sales	77%	81%	79%	79%	88%	75%	79%
Career Path	46%	45%	37%	32%	38%	42%	40%

Table 4: Average Characteristics Across Positions

	CEO	CFO	COO	CXO	ALL
Hires A Players	3.28	3.21	3.33	3.27	3.27
Develops People	3.32	3.24	3.34	3.30	3.30
Removes Underperformers	3.18	3.08	3.19	3.16	3.14
Respect	3.54	3.54	3.58	3.54	3.56
Efficiency	3.55	3.49	3.62	3.55	3.56
Network	3.50	3.26	3.38	3.43	3.43
Flexible	3.45	3.37	3.41	3.43	3.43
Integrity	3.86	3.89	3.91	3.87	3.88
Organization	3.52	3.60	3.65	3.55	3.55
Calm	3.62	3.52	3.57	3.59	3.57
Aggressive	3.62	3.35	3.52	3.54	3.52
Fast	3.60	3.40	3.56	3.54	3.53
Commitments	3.72	3.64	3.72	3.70	3.72
Brainpower	3.60	3.55	3.57	3.58	3.57
Analytical Skills	3.51	3.60	3.51	3.53	3.51
Strategic Vision	3.42	3.15	3.18	3.33	3.29
Creative	3.53	3.18	3.34	3.42	3.43
Attention to Detail	3.39	3.56	3.57	3.45	3.46
Enthusiasm	3.60	3.28	3.52	3.51	3.51
Persistence	3.77	3.59	3.72	3.71	3.72
Proactive	3.72	3.45	3.66	3.65	3.63
Work Ethic	3.84	3.73	3.87	3.81	3.81
High Standards	3.62	3.50	3.61	3.59	3.61
Listening Skill	3.45	3.41	3.50	3.44	3.47
Open to Criticism	3.31	3.38	3.41	3.34	3.37
Oral Communication	3.58	3.36	3.48	3.51	3.50
Teamwork	3.49	3.45	3.52	3.48	3.49
Persuasion	3.57	3.22	3.42	3.46	3.44
Holds People Accountable	3.46	3.34	3.43	3.43	3.41
Average	3.54	3.43	3.52	3.51	3.51

Table 5: Factor Loadings This table shows factor loadings for all interviewed candidates. Panel A gives the factor loadings on the four first factors. Loadings with a larger absolute value have stronger colors. Panel B gives the eigenvalues and the proportion of variation that is explained by the four factors. Panel C shows pairwise correlations across candidates between the loadings on the four factors, gender, and the subjective traits “nice person”, “risk taker”, “personality,” “good at sales”. Statistical significance at the 5% level is indicated with stars. The four factors are orthogonal by construction, so their correlations are omitted in the panel.

Panel A: Factor loadings (loadings < 0.15 are blank)

	Factor 1	Factor 2	Factor 3	Factor 4
Hires A Players	0.59			
Develops People	0.56	0.25		
Removes Underperformers	0.53	-0.18		-0.22
Respect	0.32	0.73		
Efficiency	0.71			-0.22
Network	0.64			
Flexible	0.54	0.38		
Integrity	0.29	0.31		
Organization	0.50		0.44	-0.23
Calm	0.44	0.33		
Aggressive	0.68	-0.43	-0.26	
Fast	0.69	-0.37	-0.18	
Commitments	0.70			-0.21
Brainpower	0.52		0.33	0.43
Analytical Skills	0.54		0.56	0.25
Strategic Vision	0.58	-0.17		0.46
Creative	0.52			0.39
Attention to Detail	0.40		0.46	-0.27
Enthusiasm	0.55	0.24	-0.44	
Persistence	0.66	-0.16		
Proactive	0.74	-0.26	-0.20	
Work Ethic	0.57			
High Standards	0.73	-0.17		
Listening Skill	0.39	0.62		
Open to Criticism	0.41	0.65		
Oral Communication	0.49	0.16	-0.16	0.19
Teamwork	0.48	0.61		
Persuasion	0.60		-0.37	0.18
Holds People Accountable	0.66	-0.21		-0.27

Panel B: Eigenvalues for first six factors

	Eigenvalue	Proportion	Cumulative
Factor1	9.32	57.9%	57.9%
Factor2	2.88	17.9%	75.8%
Factor3	1.52	9.4%	85.2%
Factor4	1.12	6.9%	92.2%
Factor5	0.85	5.3%	97.4%
Factor6	0.42	2.6%	100.0%

Panel C: Pair-wise correlation coefficients

	Nice Person	Risk taker	Personality	Good at Sales	Career Path	Female
Nice Person	1.0000					
Risk taker	-0.1733*	1.0000				
Personality	0.0097	0.1511*	1.0000			
Good at Sales	0.0409	0.1141*	0.1643*	1.0000		
Career Path	-0.0481*	0.0995*	0.0396	0.0043	1.0000	
Female	0.0305	-0.0408*	-0.0282	-0.0664*	-0.0052	1.0000
Factor 1 (+Talent)	0.1687*	0.1800*	0.1000*	0.2900*	0.0094	0.0222
Factor 2 (-Execution)	0.5470*	-0.2395*	-0.0184	-0.0511*	-0.0492*	0.0289
Factor 3 (-Charisma)	-0.0568*	-0.1645*	-0.2055*	-0.2639*	-0.0610*	-0.2200
Factor 4 (+Strategic)	0.0001	0.0692*	0.0516*	0.1206*	0.0377	-0.0775

Table 6: Factor Loadings by Position This table contains average factor scores for candidates interviewed (Panel A) and hired (Panel B) for positions. Panel C shows average factor scores for candidates that were interviewed for a position that was *not* the indicated position, but eventually obtained this position in their subsequent career.

Panel A: Average factor scores for interviewed candidates

	CEO	CFO	COO	CXO	ALL
Factor 1 (+Talent)	0.139	-0.317	0.042	0.011	0.000
Factor 2 (-Execution)	-0.130	0.090	0.055	-0.053	0.000
Factor 3 (-Charisma)	-0.214	0.493	0.087	0.002	0.000
Factor 4 (+Strategic)	0.187	-0.171	-0.239	0.047	0.000

Panel B: Average factor scores of hired candidates

	CEO	CFO	COO	CXO	ALL
Factor 1	0.185	-0.131	0.061	0.095	0.099
Factor 2	-0.046	0.119	0.116	0.011	0.059
Factor 3	-0.285	0.451	0.009	-0.073	-0.049
Factor 4	0.186	-0.133	-0.226	0.055	-0.016

Panel C: Average factor scores of candidates that are not interviewed for the indicated position but eventually obtain it

	CEO	CFO	COO
Factor 1	0.160	0.006	0.117
Factor 2	-0.156	0.093	-0.056
Factor 3	-0.090	0.364	0.002
Factor 4	0.050	-0.049	-0.182

Table 7: Probit Estimates of Hired for Position This table shows estimated marginal effects using a probit model where the dependent variable is an indicator for whether a candidate is hired. Standard errors are in parentheses.

Panel A: Probit Estimates of Hiring

	(1) CEO	(2) CFO	(3) COO	(4) CXO	(5) ALL	(6) CEO	(7) CFO	(8) COO	(9) CXO	(10) ALL
Factor 1 (+Talent)	1.100* (0.056)	1.246*** (0.081)	1.083 (0.125)	1.145*** (0.042)	1.195*** (0.032)	1.248*** (0.071)	1.503*** (0.120)	1.24 (0.182)	1.296*** (0.054)	1.333*** (0.040)
Factor 2 (-Exec.)	1.160*** (0.059)	1.071 (0.081)	1.275** (0.155)	1.122*** (0.043)	1.124*** (0.031)	1.179*** (0.067)	0.993 (0.088)	1.176 (0.180)	1.132*** (0.049)	1.134*** (0.035)
Factor 3 (-Charis.)	0.867*** (0.047)	0.914 (0.099)	0.724** (0.107)	0.866*** (0.037)	0.910*** (0.027)	0.959 (0.059)	0.865 (0.108)	0.671** (0.136)	0.965 (0.048)	1.000 (0.034)
Factor 4 (+Strat.)	1.018 (0.059)	1.089 (0.109)	1.005 (0.144)	1.022 (0.046)	0.993 (0.031)	0.954 (0.063)	1.045 (0.122)	0.935 (0.166)	0.942 (0.048)	0.927** (0.032)
Yrs. in Ind. Incumb.						1.004 (0.005)	1.012 (0.010)	0.991 (0.014)	1.004 (0.004)	1.005* (0.003)
Female						3.342*** (0.381)	5.389*** (1.211)	7.935*** (3.059)	3.771*** (0.348)	3.406*** (0.224)
Constant	1.141 (0.187)	1.086 (0.225)	1.924* (0.673)	1.2 (0.140)	1.163** (0.077)	0.615** (0.120)	0.647* (0.164)	0.384* (0.196)	0.622*** (0.088)	0.688*** (0.056)
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	769	326	147	1,243	2,397	735	317	140	1,194	2,290

Panel B: Probit Estimates of Hiring

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	CEO	CFO	Insider COO	CXO	ALL	CEO	CFO	Outsider COO	CXO	ALL
Factor 1 (+Talent)	1.135 (0.099)	1.026 (0.176)	0.689 (0.185)	1.053 (0.069)	1.147*** (0.052)	1.309*** (0.097)	1.767*** (0.181)	2.041*** (0.559)	1.460*** (0.080)	1.504*** (0.061)
Factor 2 (-Exec.)	1.211** (0.096)	1.068 (0.233)	0.779 (0.314)	1.145** (0.072)	1.114** (0.050)	1.156* (0.092)	1.002 (0.103)	1.628** (0.376)	1.129** (0.066)	1.148*** (0.048)
Factor 3 (-Charis.)	0.840** (0.072)	0.831 (0.221)	0.690 (0.245)	0.910 (0.063)	1.007 (0.047)	1.008 (0.087)	0.994 (0.153)	0.424** (0.154)	0.982 (0.066)	0.980 (0.046)
Factor 4 (+Strat.)	0.840* (0.075)	1.615* (0.450)	1.650 (0.578)	0.880* (0.065)	0.939 (0.046)	1.026 (0.095)	0.999 (0.136)	0.675 (0.172)	0.979 (0.067)	0.934 (0.044)
Constant	2.152*** (0.587)	2.101*** (0.426)	3.552** (2.005)	2.600*** (0.559)	2.304*** (0.288)	0.650* (0.152)	0.696 (0.177)	0.583 (0.462)	0.647*** (0.105)	0.740*** (0.064)
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	359	88	41	535	1,013	410	232	70	708	1,384

Panel C: Probit Estimates of Hiring

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Insider					Outsider				
	CEO	CFO	COO	CXO	ALL	CEO	CFO	COO	CXO	ALL
Factor 1 (+Talent)	1.172 (0.115)	1.080 (0.259)	0.659 (0.251)	1.075 (0.081)	1.098* (0.059)	1.200** (0.100)	1.958*** (0.254)	1.627* (0.438)	1.438*** (0.092)	1.518*** (0.073)
Factor 2 (-Exec.)	1.298*** (0.117)	1.893 (0.772)	1.113 (0.468)	1.245*** (0.093)	1.156*** (0.062)	1.253*** (0.107)	0.884 (0.109)	1.670** (0.372)	1.138** (0.072)	1.134*** (0.052)
Factor 3 (-Charis.)	0.862 (0.084)	0.449 (0.239)	0.866 (0.271)	0.893 (0.074)	0.983 (0.056)	1.026 (0.100)	0.878 (0.167)	0.402** (0.152)	0.957 (0.075)	0.969 (0.053)
Factor 4 (+Strat.)	0.851 (0.086)	0.635 (0.313)	1.399 (0.689)	0.855* (0.072)	0.873** (0.050)	0.996 (0.095)	1.098 (0.161)	0.554* (0.170)	0.977 (0.072)	0.933 (0.048)
Yrs. in Ind.	1.011 (0.010)	0.998 (0.046)	1.034 (0.044)	1.004 (0.009)	1.002 (0.006)	1.001 (0.007)	1.003 (0.011)	0.977 (0.020)	1.001 (0.005)	1.004 (0.004)
Risk taker	1.092 (0.206)	0.301* (0.215)	0.986 (0.800)	0.967 (0.155)	1.057 (0.122)	1.347** (0.198)	1.108 (0.258)	1.096 (0.441)	1.220* (0.139)	1.074 (0.089)
Personality	1.439* (0.282)	0.130** (0.125)	1.486 (0.931)	1.214 (0.201)	1.146 (0.136)	1.053 (0.180)	1.130 (0.266)	0.853 (0.433)	1.073 (0.136)	1.089 (0.100)
Good at Sales	0.881 (0.189)	1.417 (0.977)	2.452 (1.739)	0.909 (0.157)	0.931 (0.115)	1.156 (0.227)	0.858 (0.196)	0.664 (0.297)	0.971 (0.123)	1.032 (0.093)
Career path	1.012 (0.183)	1.006 (0.679)	1.725 (1.322)	0.954 (0.148)	0.894 (0.100)	0.957 (0.137)	1.192 (0.269)	1.876 (0.818)	1.091 (0.122)	1.046 (0.086)
Constant	1.387 (0.452)	18.649** (21.618)	1.711 (1.798)	2.095*** (0.525)	2.166*** (0.386)	0.550** (0.147)	0.721 (0.225)	1.345 (1.126)	0.617*** (0.112)	0.673*** (0.085)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	317	50	44	453	823	376	180	65	615	1,161

Panel D: Probit Estimates of Hiring (with company size)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ALL	ALL	ALL	ALL	CEO	CEO	CEO	CEO
	All	Small	Medium	Large	All	Small	Medium	Large
Factor 1	1.333***	1.288***	1.330***	1.556***	1.248***	1.226***	1.150	1.382***
(+Talent)	(0.040)	(0.046)	(0.063)	(0.079)	(0.071)	(0.082)	(0.103)	(0.132)
Factor 2	1.134***	1.124***	1.152***	1.157***	1.179***	1.187***	1.296***	1.151
(-Exec.)	(0.035)	(0.042)	(0.055)	(0.059)	(0.067)	(0.078)	(0.116)	(0.114)
Factor 3	1.000	0.983	1.043	0.965	0.959	0.976	0.914	0.938
(-Charis.)	(0.034)	(0.040)	(0.054)	(0.053)	(0.059)	(0.070)	(0.084)	(0.091)
Factor 4	0.927**	0.909**	0.937	0.920	0.954	0.909	0.901	0.930
(+Strat.)	(0.032)	(0.039)	(0.051)	(0.051)	(0.063)	(0.070)	(0.089)	(0.099)
Yrs. in	1.005*	1.007*	1.003	1.007	1.004	1.007	0.990	1.013
Ind.	(0.003)	(0.004)	(0.004)	(0.005)	(0.005)	(0.006)	(0.008)	(0.008)
Insider	3.406***	3.225***	4.338***	3.929***	3.342***	3.668***	3.792***	4.023***
	(0.224)	(0.264)	(0.464)	(0.407)	(0.381)	(0.489)	(0.666)	(0.731)
Female	0.931	1.026	0.715**	0.820	0.714	0.842	0.535	0.508*
	(0.091)	(0.132)	(0.118)	(0.124)	(0.173)	(0.232)	(0.209)	(0.206)
Constant	0.688***	0.747***	0.725***	0.588***	0.615**	0.695	0.985	0.383***
	(0.056)	(0.074)	(0.084)	(0.068)	(0.120)	(0.170)	(0.326)	(0.110)
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2,290	1,498	1,005	1,011	735	554	339	311

Panel E: Probit Estimates of Hiring (Corporate Governance)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	ALL	ALL	ALL	ALL	ALL	ALL	CEO	CEO	CEO
	VC	Growth Equity	Buyout	Public	Other Private	Investor	VC	Growth Equity	Buyout
Factor 1 (+Talent)	1.217** (0.104)	1.348*** (0.117)	1.289*** (0.055)	2.228*** (0.411)	1.649*** (0.204)	1.352*** (0.156)	0.897 (0.134)	1.577** (0.346)	1.312*** (0.102)
Factor 2 (-Exec.)	0.991 (0.075)	1.246** (0.114)	1.182*** (0.056)	1.119 (0.154)	1.411*** (0.180)	1.028 (0.114)	1.108 (0.137)	1.381 (0.295)	1.180** (0.098)
Factor 3 (-Charis.)	0.935 (0.078)	1.255** (0.135)	1.002 (0.049)	1.167 (0.183)	0.979 (0.126)	0.964 (0.142)	1.113 (0.154)	0.855 (0.203)	0.906 (0.081)
Factor 4 (+Strat.)	0.941 (0.079)	0.770*** (0.074)	0.976 (0.053)	0.804 (0.110)	1.072 (0.172)	0.980 (0.162)	0.782 (0.123)	0.400*** (0.115)	1.163 (0.110)
Yrs Ind	0.992 (0.008)	1.052*** (0.011)	1.001 (0.004)	0.986 (0.011)	1.013 (0.011)	1.010 (0.014)	0.992 (0.013)	1.063*** (0.024)	0.998 (0.007)
Insider	2.608*** (0.417)	3.269*** (0.643)	3.379*** (0.344)	8.830*** (2.707)	4.850*** (1.554)	3.771*** (1.723)	2.510*** (0.631)	4.583*** (1.947)	4.153*** (0.722)
Female	0.859 (0.253)	1.638* (0.454)	0.788 (0.132)	1.270 (0.391)	1.240 (0.393)	0.887 (0.304)	0.838 (0.384)	1.523 (1.730)	0.487* (0.192)
Constant	2.009* (0.721)	0.296*** (0.085)	0.778 (0.129)	0.438** (0.153)	0.521* (0.187)	0.693* (0.154)	2.302 (1.281)	0.106*** (0.073)	1.409 (0.656)
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	351	304	1,037	237	178	167	167	92	399

Table 8: Descriptive statistics for career paths These four panels show the candidates divided by whether or not they are interviewed for a position with a given title, and by those who eventually end up with position with this title.

Panel A:

Interviews for CEO position	Eventually becomes CEO		Total
	0	1	
0	1,584	184	1,768
	89.6%	10.4%	100.0%
1	629	173	802
	78.4%	21.6%	100.0%
Total	2,213	357	2,570
	86.1%	13.9%	100.0%

Panel B:

Interviews for CFO position	Eventually becomes CFO		Total
	0	1	
0	2,198	36	2,234
	98.4%	1.6%	100.0%
1	290	46	336
	86.3%	13.7%	100.0%
Total	2,488	82	2,570
	96.8%	3.2%	100.0%

Panel C:

Interviews for COO position	Eventually becomes COO		Total
	0	1	
0	2,308	100	2,408
	95.9%	4.2%	100.0%
1	143	19	162
	88.3%	11.7%	100.0%
Total	2,451	119	2,570
	95.4%	4.6%	100.0%

Panel D:

Interviews for CFO position	Eventually becomes CEO		Total
	0	1	
0	1,892 84.7%	342 15.3%	2,234 100.0%
1	321 95.5%	15 4.5%	336 100.0%
Total	2,213 86.1%	357 13.9%	2,570 100.0%

Table 9: Who eventually become executives? This table shows estimated marginal effects using a probit model where the depending variable is an indicator for whether the candidate eventually achieves an executive position as indicated (CEO, COO, or CFO), depending on the candidate's observed characteristics at the time of the interview. The sample is restricted to candidates with titles, at the time of the interview, that are *not* the indicated executive position eventually reached. Standard errors are in parentheses.

	(1) CEO	(2) CFO	(3) COO	(4) CEO	(5) CFO	(6) COO
Factor 1 (+Talent)	1.198*** (0.055)	1.007 (0.074)	1.133** (0.060)	1.187*** (0.057)	0.990 (0.077)	1.138** (0.063)
Factor 2 (-Exec.)	0.835*** (0.039)	0.928 (0.068)	0.935 (0.047)	0.838*** (0.040)	0.908 (0.070)	0.939 (0.049)
Factor 3 (-Charis.)	0.865*** (0.042)	1.274*** (0.110)	0.977 (0.053)	0.864*** (0.043)	1.199** (0.109)	0.942 (0.054)
Factor 4 (+Strat.)	1.167*** (0.058)	0.903 (0.075)	0.906* (0.050)	1.171*** (0.060)	0.913 (0.082)	0.901* (0.053)
Yrs in Ind				1.004 (0.004)	0.986* (0.008)	0.985*** (0.005)
Insider				0.937 (0.091)	0.774 (0.131)	0.970 (0.104)
Female				0.684** (0.109)	0.687 (0.207)	0.546** (0.130)
Constant	0.263*** (0.026)	0.130*** (0.020)	0.148*** (0.019)	0.265*** (0.031)	0.178*** (0.032)	0.191*** (0.027)
Ind. FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,666	2,165	2,331	1,586	2,053	2,215

Table A-1: Descriptions of Individual Characteristics Information from ghSMART internal guidelines.

Characteristics	Description	Behavior Associated with High Score	Behavior Associated with Low Score
<u>Leadership</u>			
Hires A Players	Sources, recruits, and hires A Players.	Hires A Players 90% of the time.	Hires A Players 25% of the time.
Develops People	Coaches people in their current roles to improve performance, and prepares them for future roles.	Teams say that Candidate gives a lot of coaching / development. Many team members go on to bigger roles.	Teams do not say on Candidate gives a lot of coaching. Team members do not go on to do better things.
Removes Underperformers	Removes C Players within 180 days. Achieves this through coaching-out, redeployment, demotion, or termination.	Removes C Players within 180 days of taking a new role or hiring the person.	May remove occasional C Player, but keeps most of them, often for years.
Respect	Values others, treating them fairly and showing concern for their views and feelings.	Teams would say Candidate is fair and respectful. Candidate describes performance in terms of team efforts.	Candidate is self-absorbed. Team members might call Candidate abrasive, rough around the edges.
Efficiency	Able to produce significant output with minimal wasted effort.	Candidate gets a lot done in a short period of time.	Candidate's output is unimpressive. He is a "thinker" with poor execution.
Network	Possesses a large network of talented people.	Candidate has a proven ability to build a network very quickly.	Candidate does not have big network and shows limited ability to build one.
Flexible	Adjusts quickly to changing priorities and conditions. Copes with complexity and change.	Candidate is not bothered by new or changing circumstances. Faces change in a matter-of-fact manner.	Candidate bristles when changes take place, often blames others for not doing their jobs.
<u>Personal</u>			
Integrity	Does not cut corners ethically. Earns trust and maintains confidences.	Takes pride in always doing what is right.	Cuts corners, unaware of how actions are borderline unethical.
Organization	Plans, organizes, schedules, and budgets in an efficient, productive manner.	Job accomplishments closely match goals. Candidate sets priorities.	Candidates' accomplishments do not match goals, and individual meanders.
Calm	Maintains stable performance when under heavy pressure or stress.	Performs under a wide variety of circumstances, regardless of stress.	Overreacts to high pressure situations. Fails to accomplish goals under stress.
Aggressive	Moves quickly and takes a forceful stand without being overly abrasive.	Candidate sticks neck out with words and actions, even if upsets others.	Candidate takes a wait-and-see attitude, moving more slowly to minimize risk.
Fast	Takes action quickly without getting bogged down by obstacles.	Candidate takes action and gets a lot done in a short period of time.	Candidate is slow to accomplish results.
Commitments	Lives up to verbal and written agreements, regardless of personal cost.	Gets the job done, no matter what.	Does not live up to verbal or written agreements.
<u>Intellectual</u>			
Brainpower	Learns quickly. Demonstrates ability to quickly understand and absorb new info.	High GPA and SAT scores, ability to pick-up new job details quickly.	Low GPA and SAT scores. May remain in same role for a long time.
Analytical Skills	Structures and processes qualitative or	Cites multiple examples of problem	Rarely solves problems through analysis.

	quantitative data and draws conclusions.	solving skills.	Heavy reliance on gut.
Strategic Vision	Able to see and communicate the big picture in an inspiring way.	Holds a big vision for current and future roles. Inspires others' vision.	Does not have a vision for current or future roles. Does not value planning.
Creative	Generates new and innovative approaches to problems.	Offers new and innovative solutions to intractable problems many times.	Rarely offers creative solutions.
Attention to Detail	Does not let important details slip through the cracks or derail a project.	Makes time to review the details. Asks penetrating questions.	Makes many mistakes because of ignoring small, but important details.
<u>Motivational</u>			
Enthusiasm	Exhibits passion and excitement over work. Has a "can do" attitude.	Displays high energy and a passion for the work.	Displays low energy and limited passion for the work.
Persistence	Demonstrates tenacity and willingness to go the distance to get something done.	Never gives up. Sticks with assignments until they are done.	Has a track record of giving up.
Proactive	Acts without being told what to do. Brings new ideas to company.	Regularly brings new ideas into an organization. Self directed.	Never brings in new ideas. Takes direction / does not act until being told.
Work Ethic	Possesses a strong willingness to work hard and long hours to get the job done.	Works long, hard hours to get the job done.	Does just enough to get the job done.
High Standards	Expects personal performance and team performance to be the best.	Expects top performance from himself and from others around him.	Allows himself to do 80% of the job / lets poor performance from others slide.
<u>Interpersonal</u>			
Listening Skills	Lets others speak and seeks to understand their viewpoints.	Displays ability to listen to others to understand meaning.	Cuts people off, does not address questions, misunderstands.
Open to Criticism	Often solicits feedback and reacts calmly to receiving criticism.	Responds to criticism by finding ways to grow and become better.	Reacts to criticism by blaming others and becoming bitter.
Written Communication	Writes clearly and articulately using correct grammar.	Demonstrates ability to write clearly in all forms of communication.	Does not offer any evidence of being a strong writer.
Oral Communication	Speaks clearly and articulately without being overly verbose or talkative.	Speaks clearly, articulately, and succinctly.	Speaks too quickly or too slowly, mumbles, uses a lot of jargon, etc.
Teamwork	Reaches out to peers and cooperates with supervisors to establish relationship.	Recognizes the power of a strong team, and works collaboratively.	Prefers to operate in isolation. May not work harmoniously with others.
Persuasion	Able to convince others to pursue a course of action.	Convinces others to take a course of action, even if initially in opposition.	Fails to or never tries to convince others to take a course of action.
Holds People Accountable	Sets goals for team and follows-up to ensure progress toward completion.	Sets goals, follows-up, and holds people accountable for shortfalls.	Does not set goals, follow-up, or hold people accountable.