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What's in a name? Leaders' names, compensation, and firm performance

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ABSTRACT

Can leaders' names have an impact on their compensation and firm performance? We reason about *how* and *why* certain leaders' names are related to higher financial compensation, yet unrelated to their ability to lead a company and thus firm performance. Based on a sample of 6132 CEOs working at large, publicly traded (S&P 1500) firms, we find that CEOs who have more "fluent" names—or names associated with feelings of cognitive ease (e.g., shorter length, more common)—obtain greater financial as well as non-financial perks, even though they are no more competent. Therefore, the study looks beyond the influence of sex- and race-typed names to help explain the observed mismatch between top management compensation and firm performance. We discuss the theoretical implication of this study for the cognitive bias and discrimination literature, and managerial implications for strategic human resource management.

1. Introduction

> *"…the Donald's grandfather was a German immigrant named Frederick Drumpf who emigrated to the U.S. in 1885 and became a naturalized citizen in 1892. At some point, he started calling himself "Frederick Trump," but it is unclear if he ever changed his name officially. Some have speculated that he didn't want to be known as "Drumpf" because of prevailing prejudice against Germans."*
>
> —— Palash Ghosh, *Trump or Drumpf – What's in a Name?* International Business Times, Apr 19, 2011

Trump, according to Merriam-Webster, means a dependable and exemplary person, well before it became the household name when Donald Trump won the presidential election in November 2016. Merriam-Webster's definition of *trump* clearly delivers positive annotation and straightforward pronunciation, in comparison to Drumpf, the original family name of his grandfather. It is interesting to ask, if Frederick Drumpf were to keep his original name, would Donald Trump still win the election?

Names carry a lot of information, such as one's gender, ethnical and religious background, birth cohort, parents' educational level, etc. As such, the perception of the names can often be biased. Psychological research suggests that people display biased reaction to names, based on one's own social/ethnical/religious/educational background.

In the field of financial investment, ample evidence has been documented regarding such bias. For example, Cooper et al. (2005) find that when a mutual fund changes name to reflect a current hot style, the fund experiences an average cumulative abnormal flow of 28 %, with no improvement in performance, suggesting that investors are irrationally influenced by cosmetic effects. In the period of "dotcom" bubble, Cooper et al. (2001) find positive stock price reaction to the announcement of corporate name changes to Internet-related dotcom names, with cumulative abnormal returns on the order of 74 % for the 10 days surrounding the announcement day. The bias is also a result of company name fluency, as Green and Jame (2013) find that companies with short, easy to pronounce names have higher breadth of ownership, greater share turnover, lower transaction price impacts, and higher valuation ratios. Disli and Schoors (2019) show that banks use rebranding strategy to exploit the familiarity bias, which refers to the behavioral heuristic that investors favor firms they are more familiar with. They find strong evidence that rebranding from a foreign into a Turkish name with increased familiarity is associated with reduced depositor discipline, and the opposite effect holds while rebranding from a Turkish into a foreign name.

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When it comes to the name of a person, similar behavioral bias exists, if not worse. Kumar et al. (2015) show managers with foreign-sounding names have about 10 % lower annual fund flows, and this effect is stronger among funds with investor clienteles more likely to be suspicious of foreigners. And following 9/11, flows to funds with managers with Middle-Eastern-sounding names declined abnormally. On the other side, it is not new that labor market is full name-induced ethnical/gender/religious discriminations and bias. Numerous studies have demonstrated the effects of individuals' names—particularly, names that are typically associated with certain racial groups and genders—on labor market outcomes. For example, Milkman et al. (2015) examined the response rate to emails sent to professors in 89 disciplines at top U.S. universities from a fictitious student seeking to discuss research opportunities before applying to a Ph.D. program. While the content of the email was identical, the researchers randomly assigned names to signal the gender and race (Caucasian, Black, Hispanic, Indian, Chinese) of the prospective student. It was found that professors were significantly more responsive to Caucasian males than to all other category of students collectively. This tendency was particularly pronounced among professors working in higher paying disciplines (e.g., business/management). In another study, resumes with commonly Caucasian names (Greg, Emily) received a 50 % higher callback rate for interviews for entry-level positions than those from identical resumes with commonly Black names (Jamal, Lakisha) (Bertrand and Mullainathan, 2004). Steinpreis et al. (1999) and Moss-Racusin et al. (2012) document similar evidence in their respective psychological experiments with designed CVs under names of various ethnical origins. Even with the same last name, Cotton et al. (2008) find that people with common first names are more likely to be hired.

In this paper, we take the idea of psychological and cognitive bias towards the familiarity of one's name, and the social/ethnical background associate with it, to examine if the name-induced bias exists in the most prestigious labor market where the CEOs are matched to the firms and paid in commensurate to their ability. In another word, we examine the potential impact of leaders' names on their compensation and consequently the firm's performance and identify if the cognitive bias of CEOs names distorts the efficiency of matching the most capable CEO to the highest paid firm, as documented in other segments of labor markets.

Based on a sample of CEOs at large U.S. based companies, we find that CEOs with more fluent names—names that appear more familiar and are easier to pronounce and remember (e.g., shorter, more common)—are related to the conferral of higher compensation, both in cash compensation and total compensation package. This is only partly explained by the fact the CEOs with more fluent names work in larger firms, and under the argument of Jensen and Murphy (1990), larger firms have higher CEO compensation package. The effect remains strong with the firm size controlled. In addition, we find that the CEOs with more fluent names enjoy better non-pecuniary benefits. For example, they are more likely to work in more livable cities, and receive greater job securities, measured by the likelihood of getting fired after poor firm performance. On the other hand, we find no evidence that CEOs' names are related to firm performance, suggesting the inefficiency in the CEO's labor market where the cognitive bias related to CEOs' names contribute to the apparent mismatch between top management compensation and performance, and by extension (Jensen and Murphy, 1990), labor market distortion of ability and pay.

This paper contributes to the literature in at least three important ways. First, while past studies have largely examined the effect of names on the conferral of early career opportunities (e.g., entry-level job, mentorship), the present study examines the effect of names of individuals who—as CEOs—have reached the apex of their respective organizations. Second, rather than examining the effect of names of fictitious candidates or "paper people" on the judgment and choice of decision-makers, this study focuses on the real-life outcomes of CEOs working in major companies. Third, in addition to testing the hypothesis that more fluent CEO names are associated with greater individual outcomes (higher compensation, better work/life location), our matching of CEO with their respective company's financial data allows us to test whether this bias is supported by actual firm performance. This adds to the extant literature in corporate finance on how the decision making of corporate actors may be affected merely by one's cognitive bias of the names.

This paper proceeds as follows. In Section 2, we review the relevant literature and outline our hypotheses. In Section 3, we discuss the data sources used to create the sample and describe the study methodology. In Section 4, we present the results as we test various hypotheses related to CEO names. In Section 4, we discuss the study's theoretical and managerial implications as well as limitations.

2. Theoretical background and hypotheses

In this section, we review and discuss two theoretical mechanisms through which names may impact judgment and choice. The first theoretical mechanism concerns that feeling of cognitive ease—fluency or familiarity—when processing information, and its positive impact on people's evaluations and critical judgements (Hong and Kacperczyk, 2010; Lau et al., 2010; Schoors et al., 2019; Nofsinger, 2012). The second theoretical mechanism concerns the preference for individuals with names commonly associated with socially or ethnically dominant groups (Caucasian males vs. racial minorities & females), and its negative impact on academic success, labor market outcomes, career achievements and other personal objectives.

We integrate and expand on these two areas of research to suggest that while leaders with more fluent names will earn greater individual compensation, leaders' names are unrelated to firm performance, and therefore contribute to a mismatch between compensation and talent.

2.1. Words, fluency, and familiarity

Fluency is the technical term for the experience of ease when processing information (Oppenheimer, 2008). The fluency or feeling of cognitive ease when one processes information—such as words and names—is influenced by several factors, including: word length, pronounceability, and familiarity. Research suggests that fluency is associated with numerous positive outcomes (cf. Oppenheimer, 2008). For example, it has been found that people evaluate essays consisting of shorter and typically simpler words more positively than essays with longer and more complex words (Oppenheimer, 2006). In another study, it was found that people are more likely to invest in the stocks of companies with easy to pronounce names (e.g., Barnings, Vander) than hard to pronounce names (e.g., Jojemnen, Ulymnius) (Alter and Oppenheimer, 2006). Similarly, people placed more weight on financial information from brokerage firms with easier to pronounce names (Shah and Oppenheimer, 2007; Laham et al., 2012). Additionally, it was found that when non-famous first and last names were presented once in an experiment, they were mistakenly judged as belonging to someone famous 24 h later (Jacoby et al., 1989). This may occur as people tend to assess the relative importance of things by their familiarity, and mere prior exposure to a stimulus is associated with increased liking (Zajonc, 1968).

2.2. Names, cognitive bias-induced outcomes

In another stream of research, numerous studies have demonstrated the effects of individuals' names on academic success, labor market outcomes and career achievements. The cognitive bias arises from various aspects of the perception of the names.

First, most controversially, names that are typically associated with certain racial groups and genders are treated differently in the labor market. For example, In Bertrand and Mullainathan (2004), resumes with commonly Caucasian names (Greg, Emily) received a 50 % higher

callback rate for interviews for entry-level positions than those from identical resumes with commonly Black names (Jamal, Lakisha). In a separate study, Milkman et al. (2015) examined the response rate to emails sent to professors in 89 disciplines at top U.S. universities from a fictitious student seeking to discuss research opportunities before applying to a Ph.D. program. While the content of the email was identical, the researchers randomly assigned names to signal the gender and race (Caucasian, Black, Hispanic, Indian, Chinese) of the prospective student. It was found that professors were significantly more responsive to Caucasian males than to all other category of students collectively. This tendency was particularly pronounced among professors working in higher paying disciplines (e.g., business/management). Steinpreis et al. (1999) sent 238 psychology academics one of four versions of a CV (i.e., female assistant professor applicant, male assistant professor applicant, female tenure applicant, & male tenure applicant). While the CV actually came from the same real-life academic at two different career stages (assistant professor applicant vs. tenure applicant), the names were changed to typically male (Brian) and female (Karen) names. Based on the otherwise identical CVs, decision-makers (both men & women) indicated being more likely to hire the assistant professor applicant with the male versus female name. Similar results are found in Moss-Racusin et al. (2012) where higher starting salary is conferred to the applicant with the male name, and in Coffey and McLaughlin (2009) where females with masculine monikers are more successful in legal careers.

Second, one's position in the alphabetically list name list also affects one's academic/career success. For example, Einav and Yariv (2006) find that economics faculty with earlier surname initials are significantly more likely to receive tenure at top ten economics departments, are significantly more likely to become fellows of the Econometric Society, and, to a lesser extent, are more likely to receive the Clark Medal and the Nobel Prize. Also, Feenberg et al. (2017) show that, in the context of consumer response to the ordering of economics papers in an e-mail announcement issued by the NBER, papers listed first each week are about 30 % more likely to be viewed, downloaded, and subsequently cited. For investors, Jacobs and Hillert (2016) find that US stocks that appear near the top of an alphabetical listing have about 5–15 % higher trading activity and liquidity than stocks that appear toward the bottom. International evidence and fund flows further indicate that ordering effects can affect trading activity and liquidity.

Such bias also prevails in corporate environment. For example, Kumar et al. (2015) show that U.S. mutual managers with foreign-sounding names have about 10 % lower annual fund flows, and this effect is stronger among funds with investor clienteles more likely to be suspicious of foreigners. Meanwhile, the cognitive bias on the unfamiliar or foreign names does not always go negative. For example, using machine learning algorithms on CEO names, Ganji et al. (2020) find that firms managed by 'foreign-sounding' CEOs exhibit a lower probability of class-action lawsuits. In addition, Tan et al. (2021) find that boards with greater surname homogeneity are associated with lower firm value. The negative effect of surname sharing on firm value is more pronounced when directors share rare surnames and when firms operate in regions with stronger clan systems. The market reacts positively to plausibly exogenous director resignations that reduce director surname sharing, and negatively to board appointments that increase director surname sharing. Director surname sharing also lowers firm value by reducing director dissension, granting excess executive compensation, and increasing related-party transactions. On the other hand, a stream of works examines if CEO's uncommon name may be related to a firm's strategic distinctiveness, as suggested by psychological studies that individuals with uncommon names tend to have a self-conception of being different from their peers. Kang et al. (2021) provide theoretical arguments and supportive evidence that firms' distinctive strategies are systematically linked to their CEOs' uncommon names, and the positive relationship is strengthened by the CEO's confidence, power, and environmental munificence.

2.3. Decision-making process of the board

CEO represents the top executive position in the business. The hiring process, including shortlisting candidate, interviewing, designing compensation package, are the responsibilities of the board of directors, acting on the behalf of the shareholders. When it comes to the set up the performance benchmark of the CEO, and determine her delivery, it also falls within the duty of the board. Thus, in the context of examining the name induced perception bias, we briefly discuss the potential mechanisms during which the board may make decision in favor of someone with more "fluent" names.

The board of directors in the U.S. listed firms are not diverse. Knyazeva et al. (2021) find that during 1998–2007, only 9.1 % of board directors of S&P 1500 firms are non-Caucasian, the percentage is even lower for midcap and smallcap firms. Bogan et al. (2021) shows that from 2013 to 2021, only about 10 % of directors on the average board are non-white. Masulis et al. (2012) find that for S&P 1500 firms during 1998–2006, only 13 % have foreign independent directors. The lack of demographic diversity leads to great homogeneity of the board in the U.S. public firms. Under the theory that perception induced bias may occur because of stereotypes and standards of judgment (Biernat et al., 1991) and shifting standard of competence and incompetence (Biernat et al., 2010), the board directors may make decision based on their own ethnical/gender/cultural/religious background, to favor CEO candidates that are homogeneous to the average representative of the firm as well.

A second factor that may play a role in the executive compensation and performance valuation is the firm's decision to hire external consultant. To better justify compensation level and payment structure, along with setting up the benchmark for performance evaluation, the firm may hire compensation consultants to provide professional recommendations. Conflicts of interest occur when the consultant also provides other services to the firm as an agent of the CEO. A number of studies (see, e.g., Murphy and Sandino, 2010; Conyon et al., 2009) find that CEO pay levels are higher than predicted with economic determinants in firms using compensation consultants. This indicate that, though external consultant may also play a part in the compensation decisions, its influence is likely to be dwarf by the board and the CEO.

In short, the homogenous nature of the board of directors, and its central role in the hiring/firing and compensation design of the CEO, are likely to cause name-induced perception bias.

2.4. Hypotheses

Building on previous research, we hypothesize that CEO name fluency is associated with positive financial and non-financial outcomes, such as working in a more desirable location. We reason that this occurs as an individual with a more fluent name (e.g., more familiar, shorter length, coming from mainstream cultural/social/religious background, etc.) may be more likely to come to mind, more favorably evaluated, and more likely to be invested in by critical decision-makers. Therefore, individuals with more fluent names may be given more of a chance at opportunities (e.g., mentorship, entry-level position, promotion) as they attempt to enter organizations at gateways, and more favorably evaluated in the formal and informal pathways (e.g., mentorship, promotion) to becoming a top manager and CEO. While these advantages may be subtle and barely perceptible, they may add up in the course of a lifetime to make a meaningful difference in career outcomes (Milkman et al., 2015). In addition, bias and discrimination may be more likely in contexts in which individuals are highly paid, such as top management teams of large corporations as high social class individuals may show increased incidence of unethical behavior due in part to greater greed (Milkman et al., 2015, 2019).

HYPOTHESIS 1a. (H1a): *CEO name fluency is positively related to greater financial (cash and total) compensation.*

HYPOTHESIS 1b. (H1b): *CEO name fluency is positively related to non-*

pecuniary benefits, such as working/living in a more desirable geographical location.

The literature largely agrees that name fluency has positive impact on one's academic success, career achievement and labor market outcomes, while implying that the preferable treatment one receives due to the cognitive bias is misaligned with one's ability or talent. As such, CEOs with more fluent names may be of no higher ability in managing companies or more talented at leadership than their counterparts with less fluent names. In other words, while fluency may be related to greater familiarity and liking, it is unrelated to greater managerial outcome. We reason that this may occur as decision-makers' bias or preference for cognitive ease often causes them, when faced with a difficult question (e.g., who is most talented?), to answer an easier question instead (e.g., who is most familiar? who do we like most?), typically without noticing the substitution (Kahneman, 2011). Indeed, numerous studies (e.g., Bertrand and Mullainathan, 2004; Milkman et al., 2015; Steinpreis et al., 1999) demonstrate that CVs or email correspondence with names associated with different gender or race—but are identical in terms of substance (e.g., work experience, accomplishments, credentials)—receive varying chance at opportunities. These studies support the contention that individuals' names may be used as a basis for judging and potentially stereotyping, in the absence of evidence of differences in work potential.

On the other hand, CEOs with more fluent names may exhibit certain characteristics[1] that are associated with better capability or confidence in management, resulting in better firm performance. One could argue that if CEOs with more fluent names continued to be receive preferable treatments, such as better school enrollment (Jurajda and Münich, 2010), better academic grades (Nelson and Simmons, 2007), better entry-level job opportunities (Bertrand and Mullainathan, 2004), more attentions (Einav and Yariv, 2006; Feenberg et al., 2017), it may help them to develop and reach better managerial abilities. On the contrary, evidence also shows that CEOs with less fluent names may be motivated to develop an alternative form of confidence or self-justifications and try to be different and/or take different action from peers. As discussed in Kang et al. (2021), CEOs with uncommon names pursue strategies that deviate from industry norms. Whether the distinctive strategies are beneficial or detrimental to the firm performance is unclear, but it is very possible that CEOs with less fluent names have a better chance of being successful in the managerial role, given that it may be harder for them to be CEOs in the first place. Conclusively, in light of the parallel arguments in the literature, we build competing hypotheses:

HYPOTHESIS 2a. (H2a): *CEO name fluency will be unrelated to firm-level performance.*

HYPOTHESIS 2b. (H2b): *CEO name fluency will be positively related to firm-level performance.*

HYPOTHESIS 2c. (H2c): *CEO name fluency will be negatively related to firm-level performance.*

Taken together, CEO name fluency may be a source of mismatch of compensation and performance of top management (Jensen and Murphy, 1990). Although this potential mismatch may result in the highest paying firm not getting the highest quality CEO, theoretically it should not cause further damage. Thus, we further investigate that if CEOs with more fluent names are less likely to experience voluntary or involuntary turnover through, for example, being fired or replaced. This may occur because of a shifting standard of competence (Biernat et al., 1991) and incompetence (Biernat et al., 2010). That is, if CEOs with more fluent names may be given more opportunity to demonstrate *incompetence* before a termination decision is made. We test the following hypothesis to further examine if name-induced cognitive bias may create more damage to the firm than pecuniary compensation:

HYPOTHESIS 3. (H3): *CEO name fluency will be negatively associated with turnover.*

3. Data and empirical setting

We collect CEO related information from *ExecuComp*, including full name, age, sex, year of birth, and compensation. *ExecuComp* contains the basic personal attributes and comprehensive compensation information (including total compensation & executive options) for the top management teams of *S&P 1500* firms from 1992 to 2013. The *S&P 1500* is a stock market index made by the American financial services company, Standard & Poor's, and covers 90 % of the market capitalization of U.S. stocks. We also match CEO information with firm financial information from Standard & Poor's database, *Compustat*, and the governance index constructed by Gompers et al. (2003). Together, we have a panel data sample of 6132 CEOs at 3230 firms and 30,809 firm-year observations.

3.1. Measure of name fluency

In the U.S. context, the surnames exhibit greater variations than given name, and it contains more information on the ethnical and/or religious background. We thus mainly focus the empirical tests on CEOs' surnames, except one measure as we test if having a Bible-related given name matters. We acknowledge that female CEOs may adopt the husbands' surname after marriage, as we are not able to clearly identify the cases, we drop all the female CEOs, which account for 1.75 % of the sample.

To capture the multi-dimensional information content of CEOs' names—and, in particular, fluency—we follow the motivation from the literature and create five measurements. These measures of fluency, or the extent of ease or difficulty experienced in processing names, take into account the US context of the study. As such, it is based on a population in which English is the most commonly spoken as well as official language and Christianity is the dominant religion.[2]

3.1.1. Surname Englishness

First, we want to capture the "Englishness" of the name as its familiarity and pronounceability in the current US context. We therefore follow the methodology of Travers and Olivier (1978) and create a variable "Englishness" for CEO's surname that measures the ease of pronunciation and familiarity to English speaking people. Basically, the variable Englishness is computed using a large archive of vocabulary to determine the possibility that one letter will appear after another letter.[3] With the pre-calculated possibility of letter-clusters, we create a continuous measure according to the order of letter appearance within each last name. A large value of "Englishness" denotes letter clusters that appear with greater frequency in the English language, and is therefore associated with higher levels of pronounceability and familiarity to English speakers.

[1] It is possible that the CEOs with more fluent names receive favorable treatment in their academic trainings and careers that in later stage reshapes their characteristics, such as their risk-taking preference, social network connections or managerial styles. Managers display great variation in risk-taking preference, that leads to diverse firm performance (Roussanov and Savor, 2014), and especially in financial crisis (Cuadros-Solas et al., 2021). Literature has also shown that manager's social network is a factor in the firm decision making and performance (Dbouk et al., 2020). And managerial style explains firm's accounting practices (Dyreng et al., 2010), and a significant portion of variations in bank loan contract (Francis et al., 2020).

[2] According to the 2008 US Census, 76 % of Americans identify themselves as Christian.

[3] We detailed the methodology in Appendix B.

3.1.2. Common surname

Second, people are likely to be more familiar with common or popular surnames (e.g., Smith, Johnson, Williams), regardless of their "Englishness" or length. We use US Census Statistics for the popularity of the surname, and create a dummy variable that equals one for the 100 most common surnames in the US and zero otherwise. We use the 1970 Census data, because the average birth year for the CEOs in our sample is 1946, and therefore 1970 should be approximately when they were employed in their first full-time job. Our results, however, are not affected if we use 1980 or 1990 US Census data; representing alternative points in the careers of individuals in our sample.

3.1.3. Alphabetical order

Third, it is possible that the alphabetical order of surname initials influence familiarity. For example, Einav and Yariv (2006) found that the placement of surname initial later in the alphabet is associated with lower probability of career success among Economics faculty (e.g., tenure), as these academics are less likely to receive credit for or be associated with collaborative work. We create a variable for the initial, which equals one if the CEO's surname starts with the letter "A" through to 26 if the CEO's family name starts with the letter "Z."

3.1.4. Surname length

Fourth, greater word length could increase the complexity of CEOs' names, and therefore *negatively* relate to surname fluency (Oppenheimer, 2006). As such, we create a variable according to the number of characters in CEOs' surname.

3.1.5. Bible names

Fifth, one's first name may provide additional information content and enhance familiarity if the name appears in the Bible (e.g., John, Michael, David). We collect these Bible names from *Hitchcock's Bible Names Dictionary*. The variable "Bible Name" takes the value of one if the person's first name is from the Bible and zero if it does not. It is also noteworthy that given that the majority of the board members and top management team are male Caucasians, the Bible first names also represent the religion related perception bias.[4] Thus, adopting the Bible name as a key measure for name fluency echoes our argument that cultural and religious background constitutes a key factor for biased decision making.

3.2. Dependent variables

We collect and construct a set of dependent variables based on the hypotheses. For *H1*, we examine if CEOs with more fluent names are matched to more desirable firms and are compensated more. We obtain CEOs' cash and total compensation from *ExecuComp*. Total compensation is a key variable firms need to disclose to the public and *Security & Exchange Commission* (SEC) for the annual compensation of the CEO. In addition to salary, it includes bonus, stock options, retirement plan, deferred compensation, and long-term compensation plan.

As larger firms usually pay their CEOs more, we also look at the size of the firm that a CEO works for. In addition, we adopt two geography related amenity measures to capture the desirability or convenience of the firm's headquarter location, where the CEO is likely to work and live. First is the *Nation's Most Livable State Ranking* from *Morgan Quitno Press*, with 1 denoting the most livable US state through to 50 denoting least livable state, based on criteria such as crime rates, health statistics, and expenditures on community services. Second is the population of the Metro areas where the firm's headquarter is located, with greater population being associated with greater convenience. That is, in US locations with greater population density (e.g., New York City, Chicago, San Francisco) we reason that there will be more job opportunities and greater convenience of traveling, meeting, and networking with other business people.

For *H2*, we investigate the talent and outcome of the CEOs with heterogeneity in their family names. While there is no perfect measure of the CEO talent in the literature, we use three different proxies based on the literature. The first measure of CEO talent is calculated as the unexplained part (residual) of the firm performance, given known manager and firm level control variables (Cremers and Grinstein, 2014). The second proxy is the CEO's general ability index calculated by Custodio et al. (2013). The index indicates if a CEO is a generalist or a specialist, with higher scores for CEOs with general skills that are transferable across firms and industries, including the performance of complex tasks such as restructuring and acquisitions. The third proxy is the *Managerial Ability Index* of the top management team from Demerjian et al. (2012). Though this measure is a proxy for the managerial ability of the entire top management team, we believe that the CEO plays a leading role in the overall level of this index. For the firm outcome, we use the return-on-asset (ROA) as the key measure for firm performance. We choose ROA over stock return, because the stock return is subject to more factors out of the control of the management. We adopt two additional firm outcome measures, namely firm complexity and firm efficiency. Both provide useful metrics for firm level performance.

For *H3*, we are interested in the turnover of CEOs. Turnover information is collected from *ExecuComp*. The turnover measure is the forced turnover (mostly because of deteriorated firm performance or accounting scandals, etc.), following methodology by Eisfeldt and Kuhnen (2013).

3.3. Control variables

To mitigate the omitted variable concerns, we include a set of CEO and firm specific controls. At the CEO level, we control for CEO's year of birth (cohort), age, and tenure as CEO, ability (measure with *General Ability Index* from Custodio et al., 2013). At firm level, we control for firm size (except for the test on firm size), firm's leverage, market-to-book ratio, and firm's previous year performance (except for the test on firm performance), and the ability of the top management team (measured by *Managerial Ability Index*, from Demerjian et al., 2012). We face the inevitable difficulty of including all possible variables that may affect the matching between CEO and the firm. Thus, following Petersen (2009), we include both the firm fixed effect and year fixed effect, to eliminate any time invariance factors associated with firm and time. The ways we construct the variables and the data source are detailed in Appendix A.

3.4. Model specification

We perform the empirical test with OLS (ordinary least squared) model with fixed effect as the following:

$$y_{i,t} = Name_j + X_{i,t} + W_{j,t} + \gamma_i + \delta_t + \varepsilon_{i,t}$$

in which, the $y_{i,t}$ is the variable of interest; $Name_j$ is the proxy for more fluent names; $X_{i,t}$ is the firm level control; $W_{j,t}$ is the control for CEO related variables; γ_i is the fixed effect[5]; δ_t is the year fixed effect and $\varepsilon_{i,t}$ is the error term.

[4] We thank an anonymous referee for this great suggestion.

[5] We use firm fixed effect for most of the specifications, for some key dependent variables, including firm efficiency, firm size, G-Index, livable ranking, and population of metro that do not have enough year-to-year variation, the firm fixed effect becomes highly correlated with these dependent variables. Therefore, we use two-digit SIC code as industry fixed effect. We thank two anonymous referees for these suggestions.

3.5. Sample statistics

The statistics of variables are in Table 1, Panel A. The mean and median lengths of surname are 6.4 and 6.0, respectively. Around 11.3 % of the CEOs have a common surname. The mean and median of"Englishness" of CEOs' last names are 3.0 %, and 26.2 % of the CEOs have first names that appear in the Bible. In addition, the typical (average) CEO in our sample is 55.5 years old and was born in 1946, and has tenure of 7.5 years. Seven percent of our sample consisted of women. As our sample covers most of the *S&P 1500* firms, the firm level attributes and CEO compensation statistics are consistent with the literature.

Correlation table for the key measures of the names is shown in Table 1, Panel B. Some of the measures are correlated, though they capture different aspects of CEOs' names. In the unreported test, we perform our main tests with each measurement, and the results remain unchanged.

4. Results

We present results in the order of hypotheses.

4.1. Do more fluent names lead to greater financial and non-financial (geographic) benefits?

According to the theory in managerial compensation literature (Murphy, 1999), larger and diverse firms are associated with higher complexity in operation (Nyola, Sauviat et al., 2021), and thus pay higher compensation to attract CEOs with better ability. Hence, we test if CEOs with more fluent names are matched to larger firms, and consequently get compensated more. In addition, aside from quantifiable remunerations, some CEOs may prefer to work in a more livable or populous location and sacrifice some quantity of compensation for greater quality of living. We thus perform tests on these two metrics as well.

As discussed earlier, a surname is considered to be more fluent if it is easier to pronounce, shorter, more popular, and appears earlier in the alphabet. As shown in Table 2,[6] we find that CEOs with more "English" surnames receive more cash and total compensation. Economically, one standard deviation increase in the surname "Englishness" is related to 2.3 % increase in the cash compensation and total compensation, which numerically and on average, equals to $28,519 more in cash compensation and $106,3797 in total compensation. Similarly, we find that CEOs with common surnames receive higher compensation, and the alphabetical order of CEO's last name shows to be relevant to the total compensation, the back ranked surnames (larger value in alphabetical order) is related to lower total compensation. Economic magnitude wise, one standard deviation increase in surname length is related to 3.9 % lower total compensation, that is on average $180,3830 less; one standard deviation increase in surname alphabetical order is related to 3.4 % lower total compensation, equivalent to $157,2569; and having a common surname is related to 8 % higher total compensation, or approximately $370,0163.

Similarly, we also find that CEOs with more "fluent" names are also matched to larger firms, work in more livable and populous areas. For example, CEOs with more "English" surnames or common surnames are matched to larger firms, and work in more livable states (reflected in the smaller numeric value of livable ranking) and metro areas with higher population. In addition, CEOs with front alphabetical ordered last name or shorter surnames live in more livable areas.

Hence, in general, we find evidence in support of *H1*.

4.2. Do CEOs with more fluent names demonstrate higher ability and better firm performance?

We are interested if a CEO with more fluent name is related with higher measurable ability and better firm performance, because if that is true, than the correlation between the financial and non-financial benefits that a CEO with more fluent name enjoys, does not reflect labor market bias.

As shown in Table 3, we do not find statistically strong results across the measures that fluent names are related with CEO ability or firm performance. We find limited results that CEOs with longer names are related with slightly lower ROA, however, the economic magnitude is very small.

For the G-Index that measures the level of corporate governance (higher G-Index reflects lower level of governance). We find that CEOs with common surnames are related with better governance. This could be explained by the ability to influence the board of directors, media, and other governance sources based on one's social status and influence, network and other factors that could be ultimately associated with popular family names. We do find that CEOs with common surnames display higher level of CEO talent, measured under the methodology in Cremers and Grinstein (2014). This, in fact, is consistent with the literature that people with more common names are treated in early stage of life with better school enrollment (Jurajda and Münich, 2010), better academic grades (Nelson and Simmons, 2007), better entry-level job opportunities (Bertrand and Mullainathan, 2004) and more attentions (Einav and Yariv, 2006; Feenberg et al., 2017). These channels all contribute to better talent development. However, though maybe more talented, columns (1), (3) and (4) fail to show that it is connected with better firm performance.

In general, largely consistent with *H2a*, we do not find that the information content of CEO's family name is related with superior talent or ability or better firm performance.

4.3. Does given name matter?

As we show that CEO's family name leads to inefficiency in the top-level corporate job markets with the evidence in the previous sectors, it would be interesting and necessary to see if one's given name also plays a part in the matching process of managers and firms.

We examine the effect of a CEO's given name appearing in the Bible, as we reason that these names (e.g., John, Michael, David) are more likely to be familiar and therefore fluent.[7] And as the majority of the board members and top management team are male Caucasians, the Bible first names also reflect certain religion related perception bias. Thus, this echoes with our argument that cultural and religious background constitutes a key factor for biased decision making.

Empirically, we include a dummy variable capturing if a CEO's given name appears in the Bible, along with others measures of surname.

As shown in Table 4, we find that Bible name also influence the CEO's job market. More specifically, CEOs with Bible names work in larger firms, and are granted more total compensation. Economically, having a Bible first name is related to 3.7 % increase in total compensation, approximately $171,1326 on average. While the Bible names are not related to firm performance or CEO talent.

In general, our results support our main hypotheses that the information content within CEOs' names lead to mismatching between ability and firm size. Combining the results in the previous sub-section, it is reasonable to argue that though surname does not reflect

[6] Note that due to the missing values in CEO's General Ability Index, Managerial Ability Index and other CEO characteristic variables, the observation number available for each model specification varies. The results are more economically and statistically significant when we drop the control of CEO's General Ability Index and Managerial Ability Index.

[7] In the unreported results, we perform tests on measurements of "Englishness", length, and initials of the given name, and we do not find significant results.

Table 1
Summary statistics & correlation.

Panel A:

Variable Name	N	Mean	SD	p5	p25	p50	p75	p95
Bible Name	30,809	0.262	0.440	0	0	0	1	1
Surname Englishness	30,797	3.011	1.420	1	2	3	4	5
Surname length	30,799	6.441	1.776	4	5	6	8	10
Common surname	30,809	0.113	0.317	0	0	0	0	1
Alphabetical order	30,799	11.53	6.738	2	6	12	18	23
Total Compensation	30,539	7.776	1.093	6.021	7.008	7.741	8.531	9.645
Cash Compensation	30,809	6.768	0.818	5.656	6.312	6.764	7.227	8.084
CEO Talent	30,788	2.356	0.700	1	2	2	3	3
CEO General Ability Index	21,883	-0.001	0.999	-1.336	-0.790	-0.182	0.544	1.836
Managerial Ability Index	24,214	0.014	0.138	-0.195	-0.073	0.003	0.092	0.261
CEO Age	29,156	55.47	7.532	43	51	55	60	68
CEO Tenure	29,474	7.454	7.444	0.668	2.496	5.251	10.01	22.60
CEO Born year	29,682	1946	9.172	1931	1940	1946	1952	1960
Firm Size	30,800	7.471	1.710	4.884	6.227	7.356	8.634	10.59
ROA	30,788	0.025	0.191	-0.142	0.0112	0.0410	0.0798	0.159
Firm Complexity	26,903	1.957	0.203	2	2	2	2	2
Firm Efficiency	24,214	0.739	0.217	0.328	0.601	0.793	0.912	1
G-Index	27,103	9.026	2.650	5	7	9	11	13
Market-to-book Ratio	30,634	2.971	4.445	0.593	1.420	2.139	3.438	8.381
Leverage	30,674	0.234	0.206	0	0.0655	0.213	0.347	0.570
Livable Ranking	26,907	27.73	12.39	4	20	30	37	45
Population of Metro	27,312	14.83	1.252	12.52	14.10	14.93	15.46	16.72

Panel B:

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
[1]	Surname Englishness	1.000																			
[2]	Surname length	0.002	1.000																		
		(0.757)																			
[3]	Common surname	0.193	-0.128	1.000																	
		(0.000)	(0.000)																		
[4]	Alphabetical order	-0.029	-0.022	0.053	1.000																
		(0.000)	(0.000)	(0.000)																	
[5]	Bible Name	0.025	-0.016	-0.012	0.016	1.000															
		(0.000)	(0.006)	(0.037)	(0.006)																
[6]	Total Compensation	0.004	-0.004	-0.008	0.001	0.004	1.000														
		(0.495)	(0.533)	(0.148)	(0.806)	(0.491)															
[7]	Cash Compensation	0.015	-0.007	-0.003	0.006	-0.008	0.665	1.000													
		(0.010)	(0.215)	(0.642)	(0.271)	(0.165)	(0.000)														
[8]	CEO Talent	-0.002	0.004	0.007	-0.001	0.011	0.102	0.130	1.000												
		(0.678)	(0.460)	(0.200)	(0.799)	(0.057)	(0.000)	(0.000)													
[9]	CEO General Ability Index	-0.007	0.002	0.001	-0.041	-0.001	0.281	0.181	-0.058	1.000											
		(0.308)	(0.730)	(0.861)	(0.000)	(0.850)	(0.000)	(0.000)	(0.000)												
[10]	Managerial Ability Index	-0.002	-0.005	0.006	0.011	-0.029	0.057	0.054	0.260	-0.080	1.000										
		(0.751)	(0.445)	(0.314)	(0.098)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)											
[11]	CEO Age	-0.005	0.004	0.016	0.040	-0.050	0.010	0.123	0.044	0.134	0.008	1.000									
		(0.368)	(0.516)	(0.006)	(0.000)	(0.000)	(0.105)	(0.000)	(0.000)	(0.000)	(0.227)										
[12]	CEO Tenure	-0.008	-0.032	0.011	0.031	-0.044	-0.062	0.020	0.061	-0.129	0.055	0.397	1.000								
		(0.172)	(0.000)	(0.060)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)									
[13]	CEO Born year	-0.006	0.000	-0.017	-0.024	0.055	0.118	-0.089	-0.031	-0.091	-0.005	-0.840	-0.316	1.000							
		(0.334)	(0.957)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.462)	(0.000)	(0.000)								
[14]	Firm Size	0.023	-0.008	0.013	-0.012	0.002	0.577	0.525	0.038	0.253	-0.028	0.120	-0.053	-0.048	1.000						
		(0.000)	(0.137)	(0.025)	(0.037)	(0.717)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)							
[15]	Market-to-book Ratio	0.005	0.000	-0.004	0.009	-0.005	0.094	0.027	0.134	0.009	0.092	-0.066	-0.006	0.024	-0.052	1.000					

(*continued on next page*)

Table 1 (*continued*)

		(0.370)	(0.940)	(0.446)	(0.118)	(0.386)	(0.000)	(0.000)	(0.000)	(0.177)	(0.000)	(0.000)	(0.318)	(0.000)	(0.000)														
[16]	Leverage	0.018	-0.012	-0.006	-0.028	0.011	0.068	0.083	-0.195	0.095	-0.090	0.025	-0.047	-0.029	0.197	-0.097	1.000												
		(0.001)	(0.034)	(0.321)	(0.000)	(0.048)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)													
[17]	ROA	-0.012	0.003	0.013	0.001	-0.002	0.099	0.140	0.447	-0.040	0.198	0.046	0.039	-0.057	0.130	0.087	-0.226	1.000											
		(0.041)	(0.562)	(0.018)	(0.893)	(0.751)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)												
[18]	Firm Complexity	0.011	-0.010	0.014	-0.006	-0.000	0.226	0.232	0.159	0.065	0.063	0.084	0.042	-0.040	0.384	-0.023	-0.043	0.260	1.000										
		(0.081)	(0.116)	(0.017)	(0.295)	(0.985)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)											
[19]	Firm Efficiency	0.008	0.004	0.011	-0.004	-0.038	0.309	0.361	0.314	0.094	0.525	0.125	0.009	-0.101	0.482	0.039	0.057	0.291	0.292	1.000									
		(0.187)	(0.535)	(0.082)	(0.486)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.194)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)										
[20]	G-Index	0.000	0.015	-0.021	0.003	-0.007	0.137	0.153	-0.007	0.097	0.007	0.036	-0.099	-0.014	0.195	-0.041	0.071	0.031	0.115	0.151	1.000								
		(0.965)	(0.012)	(0.001)	(0.614)	(0.260)	(0.000)	(0.000)	(0.249)	(0.000)	(0.331)	(0.000)	(0.000)	(0.025)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)									

Panel A shows the summary statistics of the sample. Panel B shows the correlation table of the key measurements of the CEOs' names. The definitions of the variables are detailed in the Appendix. *, **, and *** denote the p-value less than 5 %, 1 %, and 0.1 %, respectively.

managerial ability or firm performance, CEOs with more fluent surnames collect higher compensation as well as work in larger firms and firms with better locations.

4.4. Do more fluent names relate to turnover?

If CEOs with more fluent surnames benefit with respect to matching to bigger firms and higher paying jobs, we wonder if they also enjoy some name-entitled privilege in terms of turnovers. To investigate, we collect information on CEO turnovers, and we use a Logit model[8] to test if more fluent surnames are associated with lower probability of turnovers, controlling for the firm and CEO level controls including firm performance. In Table 5, we find very interestingly, that CEOs with less "English" names are more subject to turnover. In other words, consistent with *H3*, CEOs whose surnames are easier to pronounce, face lower probability of turnover, suggesting some name related advantage in job security.

5. Discussion and conclusion

This study developed and tested hypotheses concerning the effect of name fluency on compensation and firm performance. We examine our research questions empirically using a sample and context (CEOs at large US companies) in which financial outcomes are important and explicit, and therefore individual and organizational outcomes are measured and publicly available. We find that while CEO name fluency is related to both pecuniary and non-pecuniary benefits for the individual CEO, it is unrelated to greater performance for the firm.

5.1. Theoretical implications

We interpret our findings in light of two theoretical mechanisms. First, these findings add to the research on word fluency. Past research has shown that familiar and easy to pronounce words are better liked and regarded as important. Second, research employing audit experiment methodology have shown that CVs with names commonly associated with less socially dominant or powerful groups (e.g., women & racial minorities) tend to receive fewer opportunities than CVs with names commonly associated with more powerful groups (e.g., Caucasian men)—even though the CVs are otherwise identical (e.g., in terms of extent of work experience, accomplishments, and credentials).

We integrate and expand on these two theoretical mechanisms to show that CEO name fluency—as measured by metrics such as whether the name appears in the Bible, is common, and its extent of "Englishness"—is associated with the conferral of greater financial and non-financial (geographic) benefits. At the same time, however, we find that CEOs with more fluent names do *not* demonstrate greater talent or ability through higher firm performance. Furthermore, previous research (e.g., Bertrand and Mullainathan, 2004; Milkman, Akinola, and Chugh, 2015; Steinpreis et al., 1999; Einav and Yariv, 2006; Feenberg et al., 2017) has provided evidence for first and/or last names being a source of discrimination as individuals *attempt to enter* organizations at "gateways" and in the *informal processes leading up to the attempt to enter* organizations through "pathways" (Chugh and Brief, 2008). The bias based purely on names also persists among corporate decision makers, investors and regulators (Kumar et al., 2015; Jacobs and Hillert, 2016; Ganji et al., 2020). We extend on this body of research through empirical evidence suggesting that names may also impact the processes that determine whether or not individuals *exit* an organization through either voluntary or involuntary turnover, as we find evidence that CEO name fluency is related to lower turnover.

[8] We also conducted the tests with Profit model, the results are similar. We thank an anonymous referee for the suggestion.

Table 2
CEOs' surnames, compensation and firms' geographic convenience.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Total Compensation	Cash Compensation	Firm Size	Livable Ranking	Population of Metro
Surname Englishness	0.016**	0.016***	0.044***	-0.119*	0.036*
	(0.007)	(0.006)	(0.007)	(0.072)	(0.020)
Common surname	0.080**	0.009	0.085***	-2.418***	0.202*
	(0.034)	(0.029)	(0.031)	(0.331)	(0.108)
Alphabetical order	-0.005***	0.002	0.000	0.052***	0.001
	(0.002)	(0.001)	(0.002)	(0.015)	(0.004)
Surname length	-0.022***	0.004	-0.003	0.138**	-0.004
	(0.006)	(0.005)	(0.006)	(0.058)	(0.015)
Constant	1.512	3.640	3.300***	27.973***	14.718***
	(2.450)	(2.415)	(0.365)	(3.344)	(0.837)
CEO Characteristics	Yes	Yes	Yes	Yes	Yes
Firm Control	Yes	Yes	Yes	Yes	Yes
Fixed Effect	Firm	Firm	Industry	Industry	Industry
Observations	15,144	15,144	14,881	14,589	13,226
Adj. R-squared	0.667	0.675	0.324	0.106	0.021

This table shows the OLS regression results for CEO compensation, firm size and firms' geographic convenience. CEO characteristics, firm level controls and firm fixed effect are suppressed for space. The definitions of the variables are detailed in Appendix. * , * *, and * ** denote the p-value less than 5 %, 1 %, and 0.1 %, respectively.

Table 3
CEOs' surnames, talent and firm attributes.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	ROA	CEO Talent	Firm Complexity	Firm Efficiency	G-Index
Surname Englishness	-0.001	-0.010	-0.002	-0.000	-0.004
	(0.002)	(0.006)	(0.001)	(0.002)	(0.041)
Common surname	0.006	0.067**	0.004	-0.001	-0.314*
	(0.006)	(0.030)	(0.007)	(0.010)	(0.190)
Alphabetical order	-0.000	0.001	0.001**	-0.000	0.005
	(0.000)	(0.001)	(0.000)	(0.000)	(0.008)
Surname length	-0.005***	0.001	0.000	0.002	-0.020
	(0.002)	(0.005)	(0.001)	(0.002)	(0.031)
Constant	0.909**	2.964	0.110	-0.215**	4.058**
	(0.388)	(2.187)	(0.505)	(0.093)	(1.672)
CEO Characteristics	Yes	Yes	Yes	Yes	Yes
Firm Control	Yes	Yes	Yes	Yes	Yes
Fixed Effect	Firm	Firm	Firm	Industry	Industry
Observations	14,443	15,143	14,181	14,881	14,181
Adj. R-squared	0.350	0.403	0.560	0.562	0.087

This table shows the OLS regression results for CEO talent and firm attributes. CEO characteristics, firm level controls and firm fixed effect are suppressed for space. The definitions of the variables are detailed in Appendix. * , * *, and * ** denote the p-value less than 5 %, 1 %, and 0.1 %, respectively.

Table 4
CEOs' first names.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	ROA	CEO Talent	Firm Complexity	Firm Efficiency	Firm Size	Total Compensation	Cash Compensation	Livable Ranking	Population of Metro
Bible Name	0.008	-0.012	0.001	-0.011	0.070***	0.037**	0.024	0.201	-0.017
	(0.007)	(0.019)	(0.004)	(0.007)	(0.023)	(0.018)	(0.017)	(0.222)	(0.023)
Surname Englishness	-0.001	-0.010	-0.002	-0.000	0.044***	0.015***	0.021***	-0.121*	0.017**
	(0.002)	(0.006)	(0.001)	(0.002)	(0.007)	(0.006)	(0.006)	(0.072)	(0.007)
Common surname	0.006	0.066**	0.004	-0.001	0.087***	0.077**	0.012	-2.424***	0.160***
	(0.006)	(0.030)	(0.007)	(0.010)	(0.031)	(0.032)	(0.029)	(0.331)	(0.036)
Alphabetical order	-0.000	0.001	0.001**	-0.000	0.000	-0.005***	-0.003**	0.051***	0.002
	(0.000)	(0.001)	(0.000)	(0.000)	(0.002)	(0.002)	(0.001)	(0.015)	(0.002)
Surname length	-0.005**	0.001	0.000	0.002	-0.003	-0.021***	0.001	0.136**	-0.006
	(0.002)	(0.005)	(0.001)	(0.002)	(0.006)	(0.003)	(0.005)	(0.058)	(0.006)
Constant	0.902**	2.960	0.109	-0.209**	3.320***	3.650	4.591***	27.906***	13.552***
	(0.388)	(2.188)	(0.505)	(0.094)	(0.365)	(2.400)	(0.352)	(3.344)	(0.333)
CEO Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effect	Firm	Firm	Firm	Industry	Industry	Firm	Firm	Industry	Industry
Observations	14,443	15,143	14,181	14,881	14,881	15,144	14,881	14,589	13,226
Adj. R-squared	0.350	0.403	0.560	0.562	0.325	0.675	0.678	0.106	0.134

This table shows the OLS regression results for CEO's first names. CEO characteristics, firm level controls and firm fixed effect are suppressed for space. The definitions of the variables are detailed in Appendix. * , * *, and * ** denote the p-value less than 5 %, 1 %, and 0.1 %, respectively.

Table 5
CEOs' last names and turnover.

VARIABLES	(1) Turnover	(2) Turnover
Surname Englishness	-0.037**	-0.038**
	(0.019)	(0.019)
Common surname	0.082	0.086
	(0.082)	(0.082)
Alphabetical order	-0.001	-0.001
	(0.004)	(0.004)
Surname length	-0.011	-0.011
	(0.014)	(0.014)
Bible Name		0.117**
		(0.057)
CEO Age (Ln)	1.613***	1.325***
	(0.221)	(0.328)
CEO Tenure (Ln)	0.075**	0.252***
	(0.037)	(0.062)
Constant	-3.853***	-3.881***
	(0.744)	(0.744)
CEO Characteristics	Yes	Yes
Firm Control	Yes	Yes
Firm Fixed Effect	Yes	Yes
Observations	30,424	30,424
Pseudo. R-squared	0.0089	0.0092

This table shows the Tobit regression results for CEO turnover. CEO characteristics, firm level controls and firm fixed effect are suppressed for space. The definitions of the variables are detailed in Appendix. * , * *, and * ** denote the p-value less than 5 %, 1 %, and 0.1 %, respectively.

5.2. Managerial implications

The present study suggests the existence of a cognitive bias towards CEOs names that are more fluent, but that these CEOs are no better at leading their respective companies. Kahneman (2011) suggests that cognitive biases may be the result of our "fast thinking" intuition, rather than our "slow thinking" rationality. Increased awareness of our systematic biases may *not* prevent them from occurring, however; as they often occur outside our conscious awareness. At the same time, other people and moreover organizational processes and systems may be implemented to reduce systematic biases from occurring. For example, organizations may reduce bias by reviewing job candidates "blind" to their names; or have an outside party (e.g., human resource consulting firm) review and make recommendations (accept, reject) CEO appointment decisions based on prospective candidates' qualifications rather than their names while not revealing their names.

5.3. Limitations and future research

Difficult to determine the precise mechanisms through which CEOs with more fluent names are conferred better individual outcomes, despite no difference in performance. That is, whether it is due to the mere familiarity and cognitive ease in processing the CEOs names, or because decision-makers consciously or unconsciously infer membership in socially dominant groups (e.g., English-speaking family background, Christian) based on name and discriminate accordingly. We believe that it is likely not one or the other but rather a combination of these different mechanisms that operate over time, consciously and unconsciously, to influence the career outcomes of workers and potentially CEOs. In addition, the study is limited to only CEOs, and therefore there may be a restriction of range in study results. For example, it is possible that CEOs as a group have more fluent names than the general population (e.g., average surname length in our sample was six, and more than a quarter of CEOs had "Bible" names). Likewise, fewer of the CEOs had names that would suggest being a female or racial minority, relative to the general US population. Future research may seek to explore whether the prevalence of fluent names increases at higher levels of an organization's hierarchy/decision-making authority and compensation.

Back to where we started, we have some answers yet still leave more room for future studies, to that if Frederick Drumpf were to keep his original name, would Donald Trump still win the election?

Appendix A. Variable Definitions

Variable Name	Description	Calculation / Source
Bible Name	Binary variable: 1 if CEO's first name is from Bible; 0 otherwise.	Execucomp
Surname Englishness	Follow the methodology of Travers and Olivier (1978). The variable measures the ease of pronunciation and familiarity to English speaking people.	Execucomp
Surname length	Equals the number of characters in CEOs' surname.	Execucomp
Common surname	Binary variable: 1 if CEO's last name is within top 100 most popular name of the 1970 census; 0 otherwise.	Execucomp
Alphabetical order	Equals one if the CEO's surname starts with the letter "A" through to 26 if the CEO's family name starts with the letter "Z."	Execucomp
Total Compensation	CEO's total compensation of the fiscal year	Execucomp
Cash Compensation	Cash compensation (salary+bonus), scaled by annual total compensation	Execucomp
CEO Talent	Calculated as the unexplained part (residual) of the firm performance, given known manager and firm level control variables (Cremers and Grinstein, 2014)	
CEO General Ability Index	The index indicates if a CEO is a generalist or a specialist, with higher scores for CEOs with general skills that are transferable across firms and industries.	Custodio et al. (2013)
Managerial Ability Index	A proxy for the managerial ability of the entire top management team.	Demerjian et al. (2012)
CEO Age	CEO's age	Execucomp
CEO Tenure	CEO's tenure as being on board	Fiscal year end - time CEO on board
CEO Born year	The year in which the CEO was born	Execucomp
Firm Size	Log of total assets	log(#6)
ROA	Return on assets	#172/#6
Firm Complexity	Binary variable: 1 = diversified company; 0 = concentrated (single) industry company.	
Firm Efficiency	A measure of a firm's relative efficiency within its own industry using Data Envelopment Analysis (DEA).	Demerjian et al. (2012)
G-Index	Sum of the numbers of anti-takeover provisions	Gompers et al. (2003)
Market-to-book Ratio	Market-to-book ratio of a firm	(#60-#6-#199 *#25)/#6
Leverage	Leverage of the firm	(#9 +#34)/#6
Livable Ranking	Nation's Most Livable State Ranking from Morgan Quitno Press, with 1 denoting the most livable US state through to 50 denoting least livable state, based on criteria such as crime rates, health statistics, and expenditures on community services.	Morgan Quitno Press
Population of Metro	(Log) Population of the Metro areas where the firm's headquarter is located	U.S. Census
Turnover	Binary variable. 1 = forced turnover, 0 = otherwise	Eisfeldt and Kuhnen (2013)

# denotes the number of items in Compustat.

Appendix B. Measure "Englishness"

We follow the methodology of Travers and Olivier (1978) and create a variable "Englishness" for CEO's surname that measures the ease of pronunciation and familiarity to English speaking people. The variable Englishness is computed using a large archive of vocabulary to determine the possibility that one letter will appear after another letter. Specifically, let the Englishness (E) of an n-letter string $\#L_1L_2,. L_k,., L_n\#$ (where # denotes "space" and L_i denotes the letter in the ith position in the string) be defined as the probability that the string will be generated by the rule:

$$E=P(\#L_1L_2,\cdot L_k,\cdot, L_n\#)=P(\#)\cdot P(L_2/\#)\cdot P(L_2/\#L_1)\cdot P(L_3/L_1L_2),\cdot, P(L_k/L_{k-2}L_{k-1}), \ldots,P(\#/L_{n-1}L_n) \quad (A1)$$

where each conditional probability $P(L_k/L_{k-2}L_{k-1})$ is interpreted as the probability that letter L_k follows letters L_{k-2} *and* L_{k-1}in printed English. The probability expression in formula (A1) may be converted into a usable measure by means of the following simplifications and transformations that conditional probabilities may be estimated by frequencies of the relevant trigrams and bigrams, i.e.,

$$P(L_k|L_{k-2}L_{k-1}) = \frac{F(L_{k-2}L_{k-1}L_k)}{F(L_{k-2}L_{k-1})} \quad (A2)$$

where F denotes relative bigram and trigram frequencies. For empirical convenience, we use negative logarithm to transform E into E', which leads to the following formula for estimating the relative "Englishness" (E') of a string:

$$E' = -\left[\log F(\#L_1L_2) + \log\frac{F(L_1L_2L_3)}{F(L_1L_2)} + \ldots + \log\frac{F(L_{k-2}L_{k-1}L_k)}{F(L_{k-2}L_{k-1})} + \ldots + \log\frac{F(L_{n-1}L_n\#)}{F(L_{n-1}L_n)}\right] \quad (A3)$$

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