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# Vice-Chancellor Narcissism and University Performance

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**Abstract:** Universities hold a prominent role in knowledge creation through research and education. In this study, we examine the effects of VC narcissism on university performance. We measure VC narcissism based on the size of the signature, in line with a methodological approach which has been widely used in the recent literature and repeatedly validated in laboratory experiments. We exploit a quasi-natural experiment of VC changes and employ a Difference-in-Difference research design, which alleviates concerns related to endogeneity and identification bias. We show that the appointment of a highly narcissistic VC leads to an overall deterioration in research and teaching performance and concomitantly league table performance. We further identify excessive financial risk taking and empire-building as possible mechanisms explaining the main results and provide evidence on the moderating role of university governance. Our findings are consistent with the view that narcissism is one of the most prominent traits of destructive leadership; they also have practical implications for leadership recruitment and the monitoring of leadership practices in the higher education sector. The results of this study extend prior research in several ways. Extant literature on executive leadership and narcissism yields inconclusive findings; this literature has mainly focused on for-profit organisations and has not considered universities. In addition, prior research in higher education on the determinants of university performance has not yet examined the role of leadership personality traits.

**Keywords**: Vice-Chancellor narcissism; signature size; university performance; destructive leadership; higher education

**JEL classifications**: G41, I23

**Data availability**: The dataset and corresponding code linked to this paper are available in this link: https://data.mendeley.com/datasets/j4nf79893r/1

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## 1. Introduction

"*Over the past few years the complexity and challenges of running a higher education institution have changed beyond recognition.*"

(Advance HE, 2021)

"*When the task is daunting, the pressure is on, and the world is watching, narcissists rise to the challenge.*"

(Wallace & Baumeister, 2002, p. 833)

Over the last two decades, the UK higher education (HE) system has undergone a major transformation and expansion. This is the result of an aggressive marketisation and massification as well as the concomitant proliferation of new public management technologies (NPM) and managerialist forms of institutional governance. At the top of the HE leadership ladder, vice-chancellors (VCs) have emerged as preeminent figures who encompass the management and leadership skills of a chief executive officer (CEO) and are the principal academic and administrative officers of the university. In this paper, we examine whether the personality trait of *narcissism* in VCs affects university performance.

To date, the majority of research on narcissistic leader behaviour focuses on CEOs (Rovelli & Curnis, 2021). This field of literature is motivated by upper echelons theory, which argues that top managers affect organisational outcomes by "setting a tone from the top" (Hambrick & Mason, 1984; Hambrick, 2007).[1] Prior research has often interpreted narcissism of business leaders as a double-edged sword, with a bright side appearing as charisma and boldness, and a dark side appearing as exploitation, manipulation, aggression and unethical

[1] More generally, upper echelons theory argues that "executives' experiences, values and personalities greatly influence the interpretation of the situations they face and, in turn, affect their choices" (Hambrick & Finkelstein, 1987). Accordingly, upper echelons theory has been used to motivate studies which relate the characteristics of executives to firm performance.

behaviour. Accordingly, research has reported mixed findings on the consequences of executives' narcissism for firm performance (e.g., Chatterjee & Hambrick, 2007; Resick et al., 2009; Reina et al., 2014; Zhang et al., 2017; Ham et al., 2018; Bachrach et al., 2022). In line with the mixed findings, Cragun et al. (2020, p. 917), in their survey of the literature on narcissism, call for more research on the consequences of narcissistic leadership, arguing that "*more studies are needed to reach a more definitive conclusion*".

It is important to note that prior literature has never examined the narcissism of university leaders. It has focused on public limited companies, mainly owned by private individuals or business entities (e.g., Cragun et al., 2020), the vast majority of which are for-profit organisations. The different goals of the firms examined by prior research, relative to those of universities, and the strict regulation requirements of universities, are likely to lead to different incentives for their top executives. In addition, we argue that it is worthwhile to examine universities as they represent the ideal environment for narcissists to "shine". Specifically, the VC role is a high-status, high-visibility role that is occasionally recognised with a knighthood; the VC role, with plenty of followers within the university and amongst the stakeholders, arguably provides narcissistic individuals with opportunities to satisfy their need for excessive admiration and a stage to "perform on" (Nevicka et al., 2011).

To conduct our study, we rely on a set of hand-collected data on university performance, as well as university and VC characteristics. We measure narcissism based on the size of the signature of the VC, an approach that has been widely used in recent research in accounting, finance and management (e.g., Seybert, 2013; Davidson et al., 2015; Ham et al., 2017; Ham et al., 2018; Church et al., 2020; Abdel-Meguid, 2021; Chen et al., 2021; Chou et al., 2021) and repeatedly validated in laboratory experiments (Ham et al., 2017; Ham et al., 2018; Chen et al., 2021; Chou et al., 2021). Our main results show that the appointment of a highly narcissistic VC leads to a substantial deterioration in research and teaching performance

and concomitantly league table performance. We further identify excessive financial risk taking and empire-building as possible mechanisms explaining the main results and provide evidence on the moderating role of university governance.

We contribute to prior literature in at least three ways. First, we extend the executive leadership literature by establishing that VC narcissism is a contributing negative factor in university performance; prior research, which mainly concentrates on CEOs, yields inconclusive findings on the consequences of narcissism on firm performance (Cragun et al., 2020). Second, we contribute to the branch of research that looks at the effect of management practices on university performance (see McCormack et al., 2014; Goodall, 2009a, 2009b); this literature has not yet examined the effect of personality traits on university performance. Third, our results on the mechanisms via which VC narcissism affects university performance and on the moderating role of university governance help advancing our understanding of the detrimental behaviour of narcissistic VCs; they are related to recent research which responds to the societal appeal for greater accountability in the HE sector (e.g., Bell et al., 2022, Elmagrhi & Ntim, 2022, Watermeyer et al., 2021).

## 2. Theoretical background and research question

Our main research question examines the effect of VC narcissism on university performance. Thus, our paper is closely related to a relatively small group of studies that investigate the determinants of university performance (McCormack et al., 2014; Goodall, 2009a, 2009b). These papers generally find that management practices affect university performance. This field of research has not, however, investigated the personality traits of VCs. In addition, in contrast to our approach, they look either at research-intensive universities only and the effect of academic excellence in research performance, or at the effect of management practices on university performance in general. In the remainder of this section, we discuss prior literature

on the concept of narcissism (2.1) and on the consequences of CEO narcissism (2.2); we then develop our main research question (2.3).

### *2.1. Narcissism as a personality trait*

A universally accepted definition of narcissism does not exist. The American Psychiatric Association (2013, p. 669), however, describes narcissism as "*a multifaceted personality trait that combines grandiosity, attention seeking, an unrealistically inflated self-view, a need for that self-view to be continuously reinforced through self-regulation, and a general lack of regard for others".*

The sense of vanity and self-enhancement inflate pride in narcissistic individuals, who then believe that they are above all and superior to others in almost every aspect, including their performance (Farwell & Wohlwend-Lloyd, 1998; Paulhus et al., 2003), their leadership potential (Judge et al., 2006; Grijalva et al., 2015), their intelligence (Gabriel et al., 1994; Paulhus & Williams, 2002), their creativity (Goncalo et al., 2010), and their attractiveness and physical appearance (Buffardi & Campbell, 2008; Bleske-Rechek et al., 2008).

Narcissism can manifest in grandiosity as narcissistic individuals crave respect and admiration from others. Wallace and Baumeister (2002) point out that narcissists fantasise about fame, and consider power, status and esteem to be of utmost importance in enhancing their positive self-view. Therefore, attaining social value (i.e., status and popularity) may be a top priority for narcissists as a way to maintain their exceptionally high self-esteem (Morf & Rhodewalt, 2001). Accordingly, narcissists desire a "social stage" that can increase their visibility whilst offering them an opportunity to show off their superiority (Nevicka et al., 2011). To accomplish the goal of gaining and maintaining a grandiose self-view (i.e., being special or socially valued in the eyes of others), narcissists have a tendency to employ

dominance strategies, such as coercion and soft manipulation tactics, that lead to status at the expense of others (Campbell et al., 2005; Jonason et al., 2012). In addition, narcissistic individuals respond to criticism with great anger and denial (i.e., blame their own failures on others) to defend their own superior status (Kernis & Sun, 1994; Rhodewalt & Morf, 1998).

### *2.2. The consequences of CEO narcissism*

Narcissism is often portrayed as a double-edged sword, with a bright side appearing as charisma and boldness, and a dark side appearing as exploitation, manipulation, aggression and unethical behaviour, in the leadership domain. Hence, it comes as no surprise that prior research provides inconclusive results on the effect of executives' narcissism on firm performance (e.g., Chatterjee & Hambrick, 2007; Resick et al., 2009; Reina et al., 2014; Zhang et al., 2017; Ham et al., 2018; Bachrach et al., 2022).[2]

Regarding the dark side of narcissism, studies (e.g., Chatterjee & Hambrick, 2007; Buyl et al., 2019) find that narcissistic CEOs, in seeking recognition, are more likely to take unnecessary risks and prefer investments that generate higher levels of risk exposure, although these investments do not improve the performance of the firm. Ham et al. (2018) document that narcissists' lower sensitivity to risk and desire to be highly visible lead them to overinvest in unproductive research and development (R&D). Furthermore, narcissistic CEOs show a high tendency to engage in empire building through mergers and acquisitions (M&As) (Aktas et al., 2016), as well as internationalisation strategies (Oesterle et al., 2016; Lee et al., 2023). These large-stakes strategic initiatives receive high media coverage that further satisfies narcissists' desire for grandiosity (Ahern & Sosyura, 2014).[3]

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[2] In Appendix I, we present a more general discussion of prior research on narcissists and business leaders.

[3] Other studies find that, to cope with their desire for admiration, narcissists are more likely to act dishonestly, even if doing so may violate ethical standards or the law. Indeed, Olsen and Stekelberg (2016) find that narcissistic CEOs are prone to engaging in highly aggressive corporate tax-avoidance strategies. Moreover, Ham et al. (2017) and Capalbo et al. (2018) reveal that firms with narcissistic CEOs or chief financial officers (CFOs) engage in

With reference to the bright side of narcissism, Maccoby (2004, p. 94) notes that "narcissism can be extraordinarily useful – even necessary." In simpatico, Kets de Vries (2004) argue that narcissism "lies at the heart of leadership". Despite evidence that firms led by narcissistic CEOs experience poor financial performance (Buyl et al., 2019; Ham et al., 2018), such firms performed better than their peer firms after the financial crisis (Patel & Cooper, 2014). Additionally, Schein (2010) suggests that narcissistic leadership is essential for creating an innovation culture, which explains why narcissistic leaders are often pioneers for innovation (Howell & Higgins, 1990). Using a large sample of 143 CEOs, Zhang et al. (2017) find that CEO narcissism enhances firms' innovative performance. Further, narcissistic CEOs, being bold and charismatic, are better at promoting and inspiring an innovative culture than their non-narcissistic counterparts (Jung et al., 2008).

### *2.3. Research question*

In this paper, we empirically examine the effect of VC narcissism on university performance.

We expect VCs, and their personal characteristics, to affect university performance for three reasons. First, we argue that, in line with upper echelons theory, similarly to managers outside the HE industry, VCs affect organisational outcomes by "setting a tone from the top" (Hambrick & Mason, 1984; Hambrick, 2007). Second, with specific reference to universities, there is increased evidence that management practices in HE are strongly positively correlated with university performance indicators (McCormack et al., 2014; Goodall, 2009a, Goodall, 2009b). Third, today's universities are increasingly seen as corporations, with VCs in the role

more earnings management. Through a sense of entitlement, narcissists believe that they are above the law and are exceptions to the rules; CEO narcissism is related to a higher likelihood of committing fraud (e.g., Rijsenbilt & Commandeur, 2013; O'Reilly et al., 2018). Relatedly, narcissistic CEOs are more likely to extract and demand high salaries due to their sense of self-worth (O'Reilly et al., 2014). Ham et al. (2018), for instance, reveal that narcissistic CEOs enjoy higher compensation than non-narcissistic CEOs, despite delivering negative performance.

of CEOs. Historically, the Jarratt Report (CVCP, 1985, p. 26) was the first HE report in the UK to indicate that the VC would need to adopt a "clear role as the executive leader as well [as an academic leader] and have the necessary authority to carry it out". Since then, a number of HE policies and reforms (the UK Further and Higher Education Act, 1992; the National Committee of Inquiry into Higher Education, 1997) have given rise to directive performance management practices (see Franco-Santos & Doherty, 2017) and the adoption of key performance indicators (KPIs) as a way to quantitatively assess past performance. As a result, VCs are chosen on the basis of how well they perform against KPIs (Breakwell & Tytherleigh, 2008) and, accordingly, have strong incentives to influence university performance as measured by KPIs.

The existing literature on psychology, innovation, business and leadership provides mixed results on the effects narcissistic leaders have on organisations. On the one hand, narcissism is classified as the most prominent trait reflective of destructive leadership (see Krasikova et al., 2013; Paulhus & Williams, 2002; Shaw et al., 2011). On the other hand, narcissistic leaders are seen as bold, charismatic and innovators (see Zhang et al., 2017; Maccoby, 2004; Jung et al., 2008).

We leave the effect of VC narcissism on university performance as an open-ended research question, which we examine in this paper.

**Research question:** *What is the effect of vice-chancellor narcissism on university performance?*

Nevertheless, in our analysis, we expect the effect of narcissistically driven destructive leadership to prevail and, as a result, that VC narcissism is detrimental to university performance. In particular, we expect that the following two sets of value-destroying actions, which prior literature has associated with narcissism, are likely to play an important role in universities. In the empirical analysis, after testing the effect of VC narcissism on university

performance, we examine how these two sets of actions might be mechanisms that explain our results.

We expect that the appointment of a high narcissist VC may have a detrimental effect on university performance through excessive financial risk taking and empire building strategies, which would subtract resources from the core research and teaching activities. As already discussed, prior research indicates that narcissistic CEOs tend to engage in ambitious empire building by taking excessive financial risk taking without increases in financial performance. In particular, the evidence on excessive financial risk taking and CEOs' empire building motives has been reported with respect to the riskiness of bank policies (Patel & Cooper, 2014; Buyl et al., 2019), M&As (Aktas et al., 2016; Ham et al., 2018), R&D investments (Ham et al., 2018) and internationalisation strategies (Oesterle et al., 2016), as well as business group affiliation strategies (Lee et al., 2023). With reference to universities, Bell et al. (2022) show that universities are increasingly more indebted as a result of excessive financial risk taking; this finding is also consistent with the short-term orientation of part of universities which is documented by Elmagrhi and Ntim (2022). For instance, the Univeristy of East Anglia faced a £30 million financial deficit in 2023 due to its extensive investment in expanding the campus despite decreasing student numbers and increasing costs (Cawley & Dunlop, 2023).

After investigating the mechanisms that might explain our results, our empirical analysis focuses on a potential moderator. Specifically, we are interested in whether university governance moderates the nexus between VC narcissism and university performance. Leaders are more likely to engage in destructive leadership when they have control over their actions (Ajzen & Fishbein, 2005) and research has identified various factors that potentially limit how leaders engage in certain actions. In particular, Kaiser and Hogan (2007) show that a leader's

discretion to engage in certain actions decreases when more people are engaged in decision making and there is more power distribution within an organisation.

It is therefore possible that high-quality governance will alleviate the detrimental effect of VC narcissism on university performance. In line with this argument, Buyl et al. (2019) show that board monitoring was effective in dampening the negative effects of CEO narcissism on bank riskiness prior to the 2008 financial crisis. Identifying the moderating effect of university governance on VC narcissism is, however, challenging as VCs influence the university governance structures. Relatedly, prior research shows that narcissistic CEOs tend to appoint narcissistic board members, which reduces the effectiveness of board monitoring (see Chatterjee & Pollock, 2017 and Zhu & Guoli, 2015).

## 3. Data, variable construction and descriptive statistics

### *3.1. Data*

Our VC, university performance and university characteristics data span a 10-year period from 2009/2010 to 2019/2020. We collected data from a variety of sources, including university websites, annual reports, strategic plans and letters, Wikipedia, LinkedIn, the National Student Survey (NSS) website, the Higher Education Statistics Agency (HESA), the Times Good University Guide website, the Universities and Colleges Admissions Service (UCAS), the Research Excellence Framework (REF) website (former Research Assessment Exercise, RAE) and the Guardian University Guide. We provide a list of all the variables that are used in this article, along with the data sources, in Table A.1 in Appendix II.

We measure VC narcissism based on signature size (see Section 3.2 for details and the usage in prior literature). We exclude observations with missing signature information. Furthermore, we exclude the University of Wales from the sample due to incomplete and

missing data. Our final sample includes 133 universities and 261 VCs for which VC, university performance and university characteristics data are available.

*3.2. Measuring narcissism*

The literature linking signature size to narcissism dates back to 1973 (see Zweigenhaft & Marlowe, 1973). In psychology literature, signature size has been related to a person's sense of superiority (Snyder & Fromkin, 1977), tendency to exhibit control and dominance (Jorgenson, 1977), sense of self-identity (Kettle & Häubl, 2011; Chou, 2015) and the desire to be different from others (Lee et al., 2013).

In our analyses, we measure narcissism based on the size of the signature of the VC. This approach has been widely used in recent research in accounting, finance and management (e.g., Seybert, 2013; Davidson et al., 2015; Ham et al., 2017; Ham et al., 2018; Church et al., 2020; Abdel-Meguid, 2021; Chen et al., 2021; Chou et al., 2021). Notably, in laboratory experiments, Ham et al. (2017), Ham et al. (2018), Church et al. (2020) and Chou et al. (2021) validate signature size as a measure of narcissism. In addition, in their set of experiments, Ham et al. (2018) document that signature size is not related to overconfidence. We also note that one important advantage of a signature-based measure of narcissism, relative to a questionnaire-based measure, is that it is unobtrusive. "Unobtrusive measures eliminate problems of reactivity, demand characteristics, and researchers' expectations that can weaken other methods" (Chatterjee & Hambrick, 2007, p. 362).

In line with Ham et al. (2017) and Ham et al. (2018), we estimate signature size for each VC as follows. First, we obtain the signature of each VC from the university annual report, or the university strategic plan or letter when the signature is unavailable in the annual report. Second, we draw a rectangle around each VC's signature, where the signature touches its furthermost endpoint, ignoring any dot at the end of the signature or/and underline below the

signature (see Fig. A.1 in Appendix III: left figure). Third, we measure the area covered by the signature by multiplying the length and width (in centimetres) of the rectangle. Fourth, we divide the area by the number of letters in the VC's name to control for the length of the VC's name. For robustness, we also measure the area covered by the signature by multiplying the length and width (in centimetres) adjusted for the underline and dot, and divide the area by the number of letters in the VC's name (see Fig. A.1 in Appendix III: right figure).

*3.3. Measures of university performance*

UK universities are monitored and ranked based on their research and teaching performance. We thus employ two measures of university performance that reflect these two core functions of a university: research and teaching. Further, we employ a measure of university performance that reflects entry criteria, student experience and post-graduation outcomes.

Firstly, the Research Excellence Framework (REF) and its predecessor until 2014, the Research Assessment Exercise (RAE, is a system for assessing the research quality of UK universities and other HE institutions. The REF assesses UK universities over 36 subject-based units of assessment, the outcomes of which are used to guide the distribution of approximately £2 billion of quality research (QR) funding across UK universities. The REF assesses each unit on (i) quality of outputs, (ii) research impact and (iii) research environment. We use the overall quality of research based on the REF (formerly known as the RAE) as our research quality indicator.

Secondly, we employ the National Student Survey (NSS) which assesses teaching quality in UK universities. The NSS is an annual survey that is completed by final-year students and is administered by the Office for Students (OfS). In particular, we employ the Student

Satisfaction Score, which is the average score from across the organisation and management, learning resources, learning community and student voice sections of the NSS.[4]

Thirdly, we use the overall university ranking, based on the Guardian newspaper. The Guardian ranks UK universities based on their performance in nine criteria, which mainly reflect undergraduate student experience, entry tariffs and career prospects. In contrast to other UK university rankings, such as the Complete University Guide (CUG), the Guardian ranking does not include a measure of research quality. Importantly, the Guardian ranking is the only university ranking that is not behind a paywall, being on the Guardian newspaper's website and therefore accessible to a much larger audience than other university rankings.

In line with previous research (see McCormack et al., 2014), we reverse all university performance measures so that a higher number indicates a better ranking. In untabulated results, we show that the correlation between the three measures of university performance is relatively low, and we are therefore confident that each measure captures a different component of university performance.

### *3.4. Descriptive statistics*

In Table 1, we provide descriptive statistics for the variables employed in our analysis. In Table 1, Panel A, we focus on unique VCs only. In total, we have identified 261 unique VCs. Mean *VC Narcissism* is 0.52 with a standard deviation of 0.34, indicating extensive variation in levels of narcissism across VCs. The maximum (minimum) narcissism value is 2.04 (0.09). We report very similar statistics for the *VC Narcissism (adj)* measure. Figure 1 shows the distribution of VC narcissism, indicating a right-skewed distribution. The majority of VCs (76.6%) are male, and the average VC age is 59 years. Approximately 20% of VCs are

[4] Recently, the UK government introduced the Teaching Excellence Framework that is designed to assess the teaching quality of UK universities. However, given that data for this measure only start in 2017, we use the NSS as a more established measure of teaching quality.

Oxbridge graduates and 70% have a science-related academic background. For 43% of VCs, their place of appointment prior to appointment as VC was a pre-1992 UK university. 92.6% had an academic role prior to their appointment as VC and 65.6% have no industry experience outside academia.

***Table 1***

***Figure 1***

In Table 1, Panel B, we focus on the unique list of universities in our sample. In total, our sample consists of 133 universities. For ease of interpretation, we present the average number of staff and students and the total value of assets. All three variables indicate very large variations in the number of staff and students as well as the total value of assets. In the analysis, we take the natural logarithm of these variables in order to control for their non-normal distribution.

In Table 1, Panel C, we present the descriptive statistics for our measures of university performance. The median value for research quality is 25 and the equivalent figure for student satisfaction is 23. The median value for the Guardian ranking measure is 60 and the top university scores a value of 121. On average, the universities have boards with 21 members and hold five board meetings in an academic year (see Table 1, Panel D).

*3.5. Differences between Old and New universities*

Importantly, the HE market is segmented between "Old universities" (including the Russell group) and "New universities" (see also Walker et al., 2019). New universities were created after the passing of the Further and Higher Education Act in 1992 and tend to be

considerably less research-intensive, with more emphasis on teaching and industry links.[5] The Russell Group universities consist of the 24 most research-intensive universities amongst the group of Old universities. Looking across these institutional types, that are also differentiated *inter alia* by variations in wealth, prestige, organisational structures, working cultures, strategic priorities and stakeholders, offers the potential for a richer and more comprehensive analysis of narcissism and a representation of commonality and divergence in its manifestation across a spectrum of leadership contexts. Table 1, Panel B, indicates that, within our sample, 23 universities belong to the Russell Group and 54 to the pre-1992 group.

Table 2, Panel A, reveals that Old universities employ more male VCs, of a higher age, that are more likely to be Oxbridge graduates, hold a fellowship, have a science background and have prior industry experience. Old universities are also more likely to employ more narcissistic VCs. In Table 2, Panel B, we confirm significant differences in university characteristics between Old and New universities. Unsurprisingly, Old universities perform better than New universities, which is reflected in significantly higher scores across all three measures of university performance (see Table 2, Panel C). In term of governance, whilst New universities are more likely to have a governance committee, Old universities have larger boards and hold more board meetings (see Table 2, Panel D). Furthermore, Old universities prefer to hire the "Big 4" accounting firms to perform their audits (the "Big 4" are Deloitte, Ernst & Young (EY), PricewaterhouseCoopers (PwC), and Klynveld Peat Marwick Goerdeler (KPMG)).

Therefore, in line with prior literature (e.g., McCormack et al., 2014), we divide our sample into two groups of universities, Old and New. In fact, further analysis shows that there

[5] Research-intensive universities are universities that are committed to producing research as a core part of their mission, such as those represented within the UK's Russell Group of leading universities that claim the highest research productivity/output. Teaching-intensive universities are those with a primary focus on teaching rather than research.

are some significant differences in VC university characteristics between Russell Group universities and the remaining Old universities (see Walker et al., 2019). However, given that we do not observe any significant differences in the level of VC narcissism between Russell Group and Old universities, our definition of Old universities also includes those in the Russell Group (results not reported to conserve space but available upon request.). In Figure A.2 in Appendix IV, we show the distribution of VC narcissism across universities.

***Table 2***

## 4. Does VC narcissism matter for university performance?

In this section, we focus on our main research question: Does VC narcissism affect university performance?

In order to detect a causal effect and to control for any endogeneity issues in the appointment of VCs, our identification strategy is based on a difference-in-difference (DiD) regression approach, where the main event is the appointment of a VC.[6] Then, we analyse changes in university performance measures, from before to after the VC appointment. We compare the university performance for the sample of universities that appointed a high narcissist VC, against the university performance of universities that did not appoint a high narcissist VC. Because the timing of appointment decisions varies across firms, we alleviate

[6] In untabulated results, we focused on levels of VC narcissism rather than on changes. However, OLS estimates on the relationship between VC narcissism and university performance may suffer from reverse causality problems: it is possible that universities may want to appoint narcissistic VCs, especially given their ability to convince their audiences. The DiD methodology controls for any endogeneity issues and allows us to infer the causal effects between VC narcissism and university performance. Psychology research shows that there is "no point along the narcissism continuum where one shifts from 'normal' to 'narcissist'" (Foster & Campbell, 2007). In our DiD analysis, we do not make the claim that VC narcissism follows a discrete rather than a continuous distribution and, instead, we focus on the impact of VC narcissism on university performance measures. This is in line with the leadership literature that claims, "at very high levels that narcissism has significant downsides" (see O'Reilly et al., 2018, p. 366).

concerns related to a potential identification bias in DiD regressions, which would apply if the timing of the single shock coincided with exogenous unidentified variables that directly affected the dependent variable (see Roberts & Whited, 2013).

In particular, we rely on the universities that face a VC transition, i.e., a change from a low narcissist VC to a high narcissist VC, within the sample period. We define a high narcissist VC as one in the top quartile of the distribution. In our analysis, our treatment group consists of universities that appointed a high narcissist VC during the sample period (i.e., low-to-high transition universities). The baseline group consists of universities that appointed a low narcissist VC during the sample period (i.e., low-to-low transition universities). To maximise our sample and reduce serial correlation bias, we consider only two years before and two years after a VC transition, excluding the year of the transition. We estimate the following DiD model:

$$University\ performance\ Indicators_{it} =$$
$$f(\alpha + \beta_1 VC\ Change_{it} + \beta_2 VC\ Change_{it} * Narcissism\ Change_i + \gamma \boldsymbol{CONTROLS}_{i,t-1} +$$
$$f_t + f_{uni} + \varepsilon_{it}) \quad (1)$$

In this model, $VC\ Change_{it}$ equals one if a year is two years after the appointment of a new VC and zero if a year is two years before the appointment of a new VC. $Narcissism\ Change_i$ equals one for a low-to-high transition university and zero for a low-to-low transition university. The component of $Narcissism\ Change_i$ is excluded from Eq. (1) because we include university fixed effects ($f_{uni}$). Adding fixed effects allows us to control for unobservable heterogeneity across universities. We also replicated the analysis without university fixed effects and the results, which are untabulated, are similar. Our key variable is

$VC\ Change_{it} * Narcissism\ Change_i$, which captures the effect of appointing a high narcissist VC relative to appointing a low narcissist VC.

Our set of control variables includes a set of university and VC characteristics. We list the set of VC and university characteristics in Table A.1 in Appendix II. We lag all time-variant independent variables to t-1. This implies that recent performance is a more important determinant of current university performance (Johnes & Virmani, 2020). We control for year fixed effects ($f_t$) in order to capture any time-variant effects on university performance measures. Similar to the overconfidence literature, controlling for university fixed effects involves a trade-off (see Malmendier & Tate, 2005; Olsen & Stekelberg, 2016). While controlling for university fixed effects would allow us to investigate the effect of the individual VC on university performance, this comes at the cost of potentially reducing the generalisability of our estimates. As our interest is in the causal relationship between VC narcissism and university performance, we include university fixed effects. Finally, given that VC narcissism represents a fixed effect on the university performance over all of the VC's years, we cluster standard errors by university.[7]

We note that our research design is open to finding a positive, negative or no significant relation between VC narcissism and overall university performance. This is in line with the open-ended main research question.

In Figure 2, we offer an initial visual inspection of the perceived relationship between VC narcissism and the university performance measures. We show evidence of the relationship between the student satisfaction scores (Panel A), research quality (Panel B), Guardian ranking (Panel C) and VC narcissism, separately for Old and New universities. All three figures show

[7] We present the correlation matrix for all the independent variables in Table A.2 in Appendix V. *Ln(Total Assets)* is correlated with *Ln(Total staff numbers)* and *Ln(FT students)*. Relatedly, the variance inflation factor (VIF) values indicate a problem of multicollinearity when *Ln(Total Assets)* is included. We therefore drop it from the set of regressions. Instead, we create a dummy variable that equals one if total assets are above the sample median and zero otherwise. This variable imposes no multicollinearity problem (results not reported to conserve space).

that Old universities score higher in our university performance measures than New universities. Importantly, except in the case of research quality for the subgroup of New universities, Figure 2 shows that the relationship between VC narcissism and university performance is negative.

***Figure 2***

We present the results from the DiD regression model in Table 3. We cluster standard errors at the university level.

Columns 1 and 2 show that a change from a low narcissist VC to a high narcissist VC is associated with a deterioration in research performance for both New and Old universities. *VC Change*×*Narcissism Change* is negative and significant, confirming that VC narcissism has a negative effect on research performance. Controlling for university as well as VC characteristics, and year and university fixed effects, a change from a low narcissist VC to a high narcissist VC is associated with a drop of approximately 16 places (*VC Change*×*Narcissism Change* = −16.07) in research performance for the sample of New universities and nine places for the sample of Old universities (*VC Change*×*Narcissism Change* = −9.57). This finding also demonstrates that New universities are more susceptible to VC transitions.

*** Table 3***

In Table 3, Columns 3 and 4, we show the DiD regression results for the Student Satisfaction Scores. The coefficient of *VC Change*×*Narcissism Change* is negative and significant, indicating a drop of approximately 12 places for the group of New universities and

19 places for the group of Old universities (*VC Change*×*Narcissism Change* = −12.06 for New universities and −19.52 for Old universities).

Finally, in Columns 5 and 6, we report the DiD regression results for the Guardian ranking. The transition from a low to a high narcissist VC is associated with a drop of approximately 27 places in the Guardian ranking for the group of New universities but has no effect on the Guardian ranking of Old universities.

The results regarding the control variables offer some interesting insights. In general, after controlling for university characteristics, there is little evidence to suggest that they affect university performance. In contrast, there is some evidence that VC background and sociodemographic characteristics play a role in university performance.

In sum, our results suggest that VC narcissism has a detrimental effect on university performance. In particular, the appointment of a high narcissist VC leads to a substantial decrease in research and teaching performance, and concomitantly league table performance. We attribute this finding to the destructive leadership of narcissism (Paulhus & Williams, 2002; Shaw et al., 2011; Krasikova et al., 2013; see Section 2.3). In Section 6, we investigate the possible mechanisms via which VC narcissism affects university performance. In Section 8, we discuss the theoretical and practical implications of our results as well as the limitations of this analysis.

## 5. Robustness

Some of the signatures in the university annual reports may be electronic and therefore adjusted for size. In order to address this issue, we create an electronic signature dummy that equals one if the signature does not overlap the printed name on the document and re-estimate the DiD regressions. We report the results in Table A.3 in Appendix VI. Overall, our results remain the same. In addition to this, we compare the handwritten and electronic signature sizes

of the same VC, for the sample where we have both types. The size of the signature remains the same irrespective of the signature type.

We also note that we replicated our tests, pooling together the data from Old and New universities and adding a dummy variable to differentiate the two groups. The results of these tests are untabulated due to space constraints. In the pooled sample, we find that, consistent with our main analysis, VC narcissism is negatively associated with research performance and the university league tables. In addition, the results show that VC narcissism is negatively associated with student satisfaction.

Further, in our main analysis, the number of observations used slightly varies across the different regressions, corresponding to the different dependent variables. To ensure that our findings are not due to the heterogeneity across the different samples, we replicate the analysis using the largest common sample. The results, which are reported in Table A.4 in Appendix VII, are unchanged relative to the main analysis.

One further concern may be the relatively low number of degrees of freedom in the DiD regressions. For robustness, we remove the firm FEs and the main results are qualitatively unchanged (results not reported to conserve space but available upon request). In addition, we note that other papers on university performance follow a similar approach (for example, McCormack et al. 2023; see, e.g., Table 6 and Goodall, 2009), which leads to a relatively low number of degrees of freedom.

In addition, we conduct an array of robustness checks to confirm that the effect of VC narcissism on university performance still holds. The results of these tests, which are untabulated, are unchanged relative to the main analysis. First, as indicated in Table A.1 in the appendix, we construct a second VC narcissism variable (*VC Narcissism (adj)*) that is adjusted for the line and dot in the VC signatures. Second, we drop the year 2020 from the sample as the Covid-19 pandemic may have affected our results. Third, we drop BPP as it is the only

private university in our sample. Fourth, we employ alternative specifications for our university performance measures (see Appendix II, Table A.1). We use the ratio of research grants to total assets as an alternative measure of research quality, graduate prospects as an alternative measure of teaching quality and the Times Good University Guide results as an alternative measure of league performance. Fifth, we winsorise all continuous variables at the 1st and 99th percentiles to control for the effect of possible outliers. Sixth, we add VC pay as an additional control variable. The negative effect of VC narcissism on university performance remains unchanged and overall VC pay has no significant effect on our university performance measures. Finally, we estimate the frequency of VC changes and changes in narcissism scores across time. In untabulated results, we observe that there is an increased tendency for universities to replace low narcissist VCs with high narcissists. This result is important as it confirms our baseline analysis in showing that universities are increasingly hiring narcissistic VCs.

## 6. Potential mechanisms linking VC narcissism and university performance

Our results suggest that VC narcissism is detrimental to university performance. These findings are consistent with narcissism being a salient feature of destructive leadership (Paulhus & Williams, 2002; Shaw et al., 2011; Krasikova et al., 2013).

We now turn our attention to the mechanisms that might link VC narcissism to university performance. In Section 2, we discussed several studies that find a negative effect of CEO narcissism on organisational performance. Based on this field of literature, we focus on two potential mechanisms that may explain our results: excessive financial risk taking and empire-building strategies.

We caution that the objective of this analysis is not to provide a comprehensive explanation of our results. VC narcissism is likely to have multifaceted effects on university

performance and these effects are likely to interact with one another. Hence, in this paper, we are not able to provide a full explanation of the links between VC narcissism and university performance; we concentrate on two important mechanisms which have been identified by prior research.

### *6.1. Excessive financial risk taking*

To investigate the effect of the appointment of a highly narcissistic VC on excessive financial risk taking, we use a university-specific proxy for financial risk taking. Specifically, we use the Financial Security Index (FSI) provided by the Higher Education Statistical Agency (HESA) for each university in the UK. This indicator is based on four financial metrics (see Table A.1). We then estimate Eq. (1) with our financial risk-taking measure as a dependent variable. We report the results in Table 4 (columns 1 and 2).

*** Table 4 ***

The coefficient on the interaction term is negative and highly significant for the group of Old universities but not significant for the group of New universities. Therefore, the results are consistent with the notion that, for Old universities, financial risk substantially increases with VC narcissism. Specifically, the appointment of a highly narcissistic VC deteriorates the financial sustainability of Old universities by approximately five to six FSI points.

To further inquire into this result, in separate DiD regressions, we also examine the asset turnover ratio, which is a widely used measure of the effectiveness with which an organisation uses its resources (e.g., Palepu et al., 2022). This measure is particularly important for non-profit organisations, such as universities, because their focus is on efficiency rather than profitability. We present the results in columns 3 and 4. Overall, the DiD regression results

indicate that the asset turnover ratio decreases with VC narcissism. Hence, the appointment of a highly narcissistic VC is associated with higher financial risk (i.e., lower financial sustainability) and lower effectiveness of the use of the resources. These results are consistent with excessive risk-taking behaviour. For Old universities, the findings suggest that highly narcissistic VCs take unnecessary risk, which might lead to a decrease in university performance.

Finally, in columns 5 and 6 of Table 4, we include a measure of financial profitability: return on capital employed. The DiD regression results indicate that return on capital employed decreases with VC narcissism. This result is again consistent with excessive risk-taking behaviour because it suggests that, as VC narcissism increases, financial risk increases but there is no increase in financial profitability.

*6.2. Empire-building strategies*

We test the empire-building hypothesis for university VCs by using two empire-building proxies as dependent variables in our DiD regressions. Our first measure of empire-building strategies is capital expenditures (*Capital Expenditures*); this variable has been linked to empire-building strategies because of its direct relation with the investments of the organisation (Giroud & Mueller, 2010; Bakke et al., 2022). The second measure of empire-building strategies we use is the ratio of expenses to revenue (*Expenses to Revenue*). This variable has been related to empire-building strategies due to its link with agency costs (Ang et al., 2000; Singh et al., 2003) (see Table A.1, Panel B).

We report the results in Table 5. The results for *Capital Expenditures* are insignificant. However, when using *Expenses to Revenue* as the dependent variable, the coefficient on *VC Change*×*Narcissism Change* is positive and significant at the 5% level for the group of New universities. This evidence, although based on only one of the two measures, is consistent with

highly narcissistic VCs engaging in empire-building strategies in New universities, which might be detrimental to the performance of the organisation.

*** Table 5 ***

## 7. The role of corporate governance

In this last section, we investigate the potential impact of university governance on the nexus of VC narcissism and university performance.

Given that university governance structures are endogenous, the appointment of a new VC may also be related to the effectiveness of university governance. In addition, it is possible that the effectiveness of university governance influences the strategies implemented by VCs. Because of these endogeneity concerns, in our main model, we do not include indicators of corporate governance quality.

In order to examine the potential moderating effect of corporate governance on VC narcissism, we estimate the following DiD regressions and compare the results to those obtained with our main model:

$$University\ performance\ Indicators_{it} =$$
$$f(\alpha + \beta_1 VC\ Change_{it} + \beta_2 VC\ Change_{it} * Narcissism\ Change_i + \beta_3 UG_{it} +$$
$$\beta_4 VC\ Change_{it} * UG_{it} + \gamma \boldsymbol{CONTROLS}_{i,t-1} + f_t + f_{uni} + \varepsilon_{it}) \quad (2)$$

In this set of regressions, $UG_{it}$ refers to a set of university governance quality proxies that are expected to influence the nexus between VC narcissism and university performance. We include four university governance variables. These are the presence of a university governance committee, board size, board gender diversity and a dummy variable for Big 4

auditors (see Table A.1 for the definition of the variables). We also include an interaction term between $VC\ Change_{it}$ and $UG_{it}$, thus allowing corporate governance quality to change when narcissism changes.

We report the results of the DiD regression in Table 6 and compare them to our main results (Table 3). In order to conserve space, in Table 6 we report the DiD results obtained when we use the presence of a university governance committee as the university governance proxy. In Table A.5 in Appendix VIII, we observe similar results when we use board size, board gender diversity and the Big 4 dummy as proxies for corporate governance. The core finding that VC narcissism has a negative effect on research performance still holds after controlling for the effect of university governance; however, we note a decrease in the magnitude of the effect relative to Table 3. Interestingly, for teaching performance, whilst the relationship is consistently negative, significance is not retained for all regressions. We observe a similar effect for league table performance.

*** Table 6 ***

One possible interpretation of these results is that high-quality university governance alleviates some of the effects of VC narcissism on university performance. This can lead to a decrease in the strength of the association between VC narcissism and university performance, as measured by the significance of the coefficients on $VC\ Change_{it} \times Narcissism\ Change_{i}$. These results have important implications for the monitoring of universities. Although we cannot document a causal link, our evidence is consistent with the notion that enhancing the governance of universities can have a beneficial effect in mitigating the negative effects of destructive leadership in HE.

## 8. Discussion and conclusion

### *8.1. Contributions to prior research*

In this paper, we contribute to prior research in at least three important ways.

First, we extend the executive leadership literature by establishing that VC narcissism is a contributing factor in university performance. An extant literature on executive leadership and narcissism yields inconclusive findings (Cragun et al., 2020) and, by extending this literature, we address the call by Cragun et al. (2020, p. 917) that "more studies are needed to reach a more definitive conclusion". Importantly, we complement a literature that is almost exclusively focused on public limited companies, mainly owned by private individuals or business entities, the vast majority of which are for-profit organisations. On the other hand, almost all UK universities are categorised as charitable organisations, their primary mission being to provide a public service through the advancement of education and research. Universities are motivated by public service rather than profit incentives, and are obligated by law to fulfil a designated set of public tasks in exchange for government funding. In contrast to for-profit institutions, for universities, students are not customers but direct beneficiaries of those services. A further specificity of the HE sector is the strict external regulation; in particular, UK universities are overseen by multiple regulators and professional bodies. The Office for Students (OfS), the Scottish Funding Council, the Higher Education Funding Council for Wales (HEFCW) and the Department for the Economy in Northern Ireland, regulate universities in England, Scotland, Wales and Northern Ireland, respectively. These substantial differences, between universities and the firms examined by prior research, are

likely to lead to differences in the incentives of their leaders.[8,9] Our results are in line with the side of this literature which documents negative effects of CEO narcissism on the performance of the firm (e.g., Ham et al., 2018; Buyl et al., 2019). More generally, they are consistent with the interpretation that narcissism is one of the most prominent traits of destructive leadership (Paulhus & Williams, 2002; Shaw et al., 2011; Krasikova et al., 2013).

Second, we contribute to the HE literature. There is a small but growing literature that looks at the effect of management practices on university performance (see McCormack et al., 2014; Goodall, 2009a, 2009b). Importantly, this literature has not yet examined the effect of personality traits on university performance. In addition, this branch of literature either looks at research-intensive universities only and the effect of academic excellence in research performance (e.g., Goodall, 2009a, 2009b), or at the effect of management practices on university performance in general (McCormack et al., 2014). In our paper, we extend this literature by investigating the impact of narcissism, as a specific personality trait, on performance levels of both research-intensive and teaching-intensive universities.[10] Moreover, there is research demonstrating that management practices and sharp incentives may not be as important when workers are motivated (Bénabou & Tirole, 2006). Indeed, Delfgaauw et al. (2011) show that management practices are not as important for non-profit organisations as they are for for-profit organisations. Relatedly, McCormack et al. (2014) and Goodall and

[8] We also note that, where universities have embraced NPM technologies and market logic, the role of the VC has become largely indistinguishable from that of a CEO. This is the culmination of their role morphing from steward of collegial governance to overseer of market compliance and competitiveness. However, the market does not appear to price VCs on a par with CEOs, indicating that VCs place more value on aspects of their work that are not related to pay, such as personal values and service to society.

[9] We would like to emphasise that, although we complement and enrich the debate on the effects of executives' narcissism or organisational performance, we do not claim to provide a definite conclusion to it. The context we examine has important similarities but also relevant differences relative to the contexts examined by prior research.

[10] Our paper is also related to prior research on the characteristics of VCs and their pay (Bachan & Reilly, 2015; Walker et al., 2019; De Fraja et al., 2020; Johnes & Virmani, 2020; Bugeja et al., 2021; Elmagrhi & Ntim, 2022; Lucy et al., 2022). Although the focus of these papers is on the compensation of VCs, some of them also explicitly examine the determinants of university performance. We differ from this field of literature because these studies focus on the socio-demographic characteristics of the VCs whereas we investigate their personality traits.

Bäker (2015) dispute the perceived wisdom that academics are intrinsically motivated and therefore not affected by management practices. Our findings demonstrate further evidence that the performance of academics, especially in research, like that of most other workers, is indeed affected by the composition of personality traits of the leader of the management team.

Third, we provide evidence on the mechanisms via which VC narcissism affects university performance and on the moderating role of university governance. In particular, we identify two potential mechanisms which may drive the relation between VC narcissism and university performance: excessive financial risk taken by narcissistic VCs and empire-building strategies implemented by narcissistic VCs. These results are crucial in advancing our understanding of the detrimental behaviour of narcissistic VCs and therefore answer a societal appeal for greater accountability in the HE sector. They are also related to recent HE research showing that universities are increasingly more indebted (Bell et al., 2022) and examining why some universities focus on short-term instead of more long-term social performance targets (Elmagrhi & Ntim, 2022). We also find that university governance has a moderating role on the negative effects of VC narcissism on university performance. This finding is also highly relevant in the wake of the recent turmoil of the Covid-19 pandemic, which has legitimised the further centralisation of power within universities and the abandonment of consultative and democratic institutional governance (Watermeyer et al., 2021). Our study suggests that such consolidation, if it reduces the quality of university governance, could exacerbate the detrimental effects of VC narcissism.

### *8.2. Policy implications*

Our findings have important implications for the recruitment and monitoring of VCs and are especially salient to ongoing debates regarding the kinds of leadership, leadership personalities and leadership skillsets required by universities (Bolden et al., 2014; Lumby, 2019). We also

note that narcissists are more likely to do well in interviews (Kluger, 2014) and are therefore more likely to be appointed as VCs, irrespective of their capabilities; this increases the salience of the results. Looking at our data, we notice an increase in the narcissism of VCs over time. Specifically, untabulated results show that, in the first three years of the sample, only one replacement of a low narcissist VC is made with a high narcissist VC; in contrast, in the last three years of the sample, this figure has risen sixfold.

We believe our results are particularly relevant in the current times, in which the characteristics of the leadership of the HE sector are arguably being called into question to a substantially greater extent than in the past. The high level of contestation of the HE sector and its leadership is documented by recent HE literature. For example, in a report commissioned by Advance HE, Watermeyer et al. (2022) discuss the results of round-table discussions, conducted among international HE populations, with a focus on the effects of the pandemic period on the perception of the HE sector.

More specifically, our results speak directly to the potential recruiters of VCs. Usually, the recruitment of VCs is run by university councils, which are assisted by committees for the selection of VCs or senior academic staff. Our results suggest that university councils and relevant committees should take into account and, if possible, measure the narcissism of the candidates for the role of VC. This can be done using psychometric tests, which are currently mostly used at the middle management level and only to a lesser extent at the top management level. Psychometric tests may include questionnaires aimed at measuring narcissism and other personality traits or the compatibility of the candidate with the environment. Given, however, that narcissists tend to appeal to recruiters, we also recommend that VC selection committees should undertake rigorous training that will allow them to control for this implicit bias in favour of narcissistic applicants. Relatedly, the results of our paper could also be useful for setting the pay of VCs; universities normally rely on a remuneration committee that includes members of

the council. Remuneration decisions should consider the expected negative effect of narcissism on university performance.

Our findings concentrate on narcissism but, in general, indicate that VC personality traits potentially play a significant role in determining the performance of a university. Prior research on the determinants of university performance has not yet examined personality traits (for example in Goodall, 2009a, 2009b and Bäker & Goodall, 2020). Our paper, by emphasising the role of personality traits, extends the results of prior research and offers new policy implications.

In addition, our results show that the implementation of effective university governance mitigates some of the adverse consequences arising from VC narcissism. A "vigilant" university board could therefore counterbalance VC narcissism. This finding offers further implications for those recruiting and monitoring VCs.

### *8.3. Limitations and future research*

We identify five limitations of our study, which may be addressed by future research.

First, as mentioned earlier, despite its advantages and the repeated experimental validations, our measure of narcissism has drawbacks. A potential criticism is that the measure may not fully capture the multifaceted nature of narcissism (Cragun et al., 2020). Hence, a caveat in the interpretation of our results is that we rely on an indicator of narcissism as a personality trait; however, the actual narcissism of the individual is unobservable. Future research may examine alternative measures of VC narcissism. For example, one of the most widely used narcissism measures in prior research based on questionnaires is the Narcissistic Personality Inventory (NPI) (Raskin & Hall, 1979).

Second, we only focus on the personality trait of narcissism. Future research, similar to prior literature on the characteristics of executives, could examine other personality traits of VCs and the potential effects of their interaction. Examples of executives' personality traits which have been found to affect firm performance are overconfidence (Burkhard et al., 2022) and conservatism (Duong et al., 2021).

Third, in our analysis, we concentrate on VCs as university leaders. A potentially promising area of future research could be the analysis of the personality traits of the main individuals on the management team. In particular, this should entail studying the leaders of the subunits of the organisation and their interaction with VCs. In particular, for UK universities, one could examine the characteristics of heads of departments. In addition, an analysis of the personality traits of the management team would require the examination of the relevant Pro-VCs. For example, the Pro-VC for Research and the Pro-VC for Teaching and Learning (often referred to as Education) would likely be highly relevant for gaining a better understanding of the determinants of research and teaching performance, respectively.

Fourth, in this paper, we do not examine the determinants of VC narcissism. We believe that an interesting avenue for future research could be to investigate the cross-sectional variation in narcissism across individuals. This analysis could contribute to the literature on leadership selection (Erkal et al., 2022; Mumford et al., 2000; Elgar, 2016) and career advancement (Rovelli & Curnis, 2021).

Fifth, we document that VC narcissism is substantially and negatively associated with three measures of overall university performance. We note, however, that VC narcissism may have beneficial effects on specific outcomes, for example those related to subunits of the organisation, or to the performance of universities where the bright side of narcissism (e.g., Zhang et al., 2017; Maccoby, 2004; Jung et al., 2008) plays a particularly important role. Future

research may further examine the situations where charismatic leaders with higher tendency to innovation could be beneficial to universities.

### *8.4. Conclusion*

Universities are research and economic powerhouses. UK universities, in a series of reforms, have adopted NPM practices, emphasising results and adopting KPIs as a way to quantitatively assess past performance. Within this framework, VCs have emerged as executive leaders, who need to encompass both managerial and academic skills. The personal characteristics of VCs, including their personality traits, are likely to play an important role in determining university performance.

Universities, in contrast to businesses, fulfil a public service by promoting education and research, highlighting their distinction as non-commercial entities. Prior research on leadership personality traits, which has only focused on businesses, has produced mixed results about the effects of leadership narcissism on organisational performance. In addition, prior literature on university performance has not yet investigated the role of leadership personality traits. In this study, we focus on the effects of VC narcissism on university performance.

We show that the appointment of a high narcissist VC leads to a deterioration in research performance as well as teaching and league table performance. This negative effect of VC narcissism on university performance is in line with the interpretation that narcissism is a prominent trait reflective of destructive leadership. Our results further suggest two mechanisms via which VC narcissism affects university performance: excessive financial risk taking and empire-building strategies. Importantly, we also show that high-quality university governance alleviates the detrimental effect of VC narcissism on university performance.

Overall, our study contributes to prior research on the consequences of leadership narcissism and on the determinants of university performance. We believe that this paper will

stimulate further studies in the area of organisational performance and academic leadership. The results add to the current debate, amongst academics and regulators, on the leadership skills that are required by universities. They also offer new insights of interest in the selection and monitoring of VCs.

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## Table 1

Summary statistics.

| Variables | N | Mean | Median | SD | Min | Max |
|---|---|---|---|---|---|---|
| **Panel A: Vice-Chancellor Characteristics** | | | | | | |
| Gender | 261 (61/200) | 0.791 | 1.000 | 0.407 | 0.000 | 1.000 |
| Age | 250 | 58.873 | 59.000 | 5.205 | 43.000 | 74.000 |
| Oxbridge | 256 (51/144) | 0.213 | 0.000 | 0.410 | 0.000 | 1.000 |
| Fellow | 255 (128/127) | 0.538 | 1.000 | 0.499 | 0.000 | 1.000 |
| Science | 257 (77/180) | 0.705 | 1.000 | 0.456 | 0.000 | 1.000 |
| Place of appointment (post-92) | 258 (90) | 0.315 | 0.000 | 0.465 | 0.000 | 1.000 |
| Place of appointment (other) | 258 (57) | 0.209 | 0.000 | 0.407 | 0.000 | 1.000 |
| Academe | 259 (19 / 240) | 0.933 | 1.000 | 0.250 | 0.000 | 1.000 |
| VC experience | 250 | 6.047 | 5.000 | 4.847 | 0.000 | 31.000 |
| Industry experience | 256 (168 / 88) | 0.331 | 0.000 | 0.471 | 0.000 | 1.000 |
| VC pay (in thousands) | 1182 | 261.980 | 263.000 | 61.455 | 19.000 | 457.000 |
| VC Narcissism | 232 | 0.523 | 0.439 | 0.342 | 0.088 | 2.040 |
| VC Narcissism (adj) | 232 | 0.536 | 0.459 | 0.348 | 0.088 | 2.040 |
| Electronic Signature | 232 | 0.692 | 1.000 | 0.462 | 0.000 | 1.000 |
| **Panel B: University Characteristics** | | | | | | |
| Russell | 133 (110/23) | 0.174 | 0.000 | 0.379 | 0.000 | 1.000 |
| Pre1992 | 133 (79/54) | 0.408 | 0.000 | 0.492 | 0.000 | 1.000 |
| Total number of staff | 1400 | 1858.320 | 1165.000 | 1930.003 | 30.000 | 11910.000 |
| Full Time students | 1423 | 13035.183 | 12710.000 | 7438.788 | 120.000 | 36910.000 |
| Total Assets | 1397 | 483589.717 | 300089.000 | 723476.633 | 12923.000 | 8298546.000 |
| Financial Security | 1269 | 3.367 | 3.580 | 6.507 | -26.266 | 59.475 |
| Asset Turnover | 1269 | 0.618 | 0.584 | 0.310 | 0.197 | 4.544 |
| Capital Expenditures | 1405 | 29819.802 | 17176.000 | 38912.062 | -245.000 | 329161.000 |
| Capital Intensity | 1393 | 0.069 | 0.058 | 0.056 | -0.005 | 0.741 |
| Expenses to Revenue | 1270 | 0.967 | 0.963 | 0.063 | 0.738 | 1.263 |
| **Panel C: University Performance Indicators** | | | | | | |
| Research quality | 1273 | 32.078 | 25.000 | 26.083 | 1.000 | 100.000 |
| Student satisfaction | 1326 | 30.555 | 23.000 | 21.608 | 1.000 | 83.000 |
| Guardian Ranking | 1233 | 60.074 | 60.000 | 34.525 | 1.000 | 121.000 |
| **Panel D: Corporate Governance Indicators** | | | | | | |
| Governance Committee | 1223 | 0.312 | 0.000 | 0.463 | 0.000 | 1.000 |
| Board Size | 1217 | 21.141 | 21.000 | 4.937 | 7.000 | 44.000 |
| Ln(Board Size) | 1217 | 3.024 | 3.045 | 0.239 | 1.946 | 3.784 |
| Board Diversity (in %) | 1211 | 33.921 | 33.333 | 11.019 | 5.000 | 64.706 |
| Board Meeting (times) | 1162 | 5.010 | 5.000 | 1.570 | 3.000 | 15.000 |
| Big4 | 1200 | 0.752 | 1.000 | 0.432 | 0.000 | 1.000 |

**Notes:** All variables are defined in Table A.1. The sample period is from 2009 to 2020.

**Table 2**

Summary statistics by university groups.

| | New universities | | Old universities | | Difference |
|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | |
| **Panel A: Vice-Chancellor Characteristics** | | | | | |
| Gender | 0.771 | 0.421 | 0.82 | 0.385 | -0.049* |
| Age | 58.328 | 5.375 | 59.634 | 4.860 | -1.306*** |
| Oxbridge | 0.169 | 0.375 | 0.274 | 0.447 | -0.105*** |
| Fellow | 0.442 | 0.497 | 0.675 | 0.469 | -0.233*** |
| Science | 0.606 | 0.489 | 0.847 | 0.360 | -0.241*** |
| Place of appointment (post-92) | 0.659 | 0.476 | 0.093 | 0.293 | 0.565*** |
| Place of appointment (other) | 0.394 | 0.492 | 0.299 | 0.460 | 0.095 |
| Academe | 0.935 | 0.247 | 0.931 | 0.254 | 0.004 |
| VC experience | 5.963 | 5.123 | 6.156 | 4.428 | -0.193 |
| Industry experience | 0.305 | 0.46 | 0.369 | 0.483 | -0.064* |
| VC pay (in thousands) | 241.393 | 50.651 | 291.879 | 63.498 | -50.482*** |
| VC Narcissism | 0.546 | 0.357 | 0.487 | 0.315 | 0.059** |
| VC Narcissism (adj) | 0.558 | 0.357 | 0.503 | 0.33 | 0.056** |
| **Panel B: University Characteristics** | | | | | |
| Ln(Total staff numbers) | 6.563 | 1.001 | 7.631 | 0.928 | -1.068*** |
| Ln(FT students) | 9.094 | 0.747 | 9.408 | 0.978 | -0.314*** |
| Ln(Total Assets) | 12.105 | 0.803 | 13.219 | 0.897 | -1.114*** |
| High Total Assets | 0.299 | 0.458 | 0.780 | 0.415 | -0.481*** |
| Financial Security | 4.098 | 6.167 | 2.341 | 6.831 | 1.757*** |
| Asset Turnover | 0.628 | 0.376 | 0.604 | 0.181 | 0.024 |
| Capital Expenditures | 15384.710 | 18782.170 | 50232.310 | 49470.440 | -34847.590*** |
| Capital Intensity | 0.069 | 0.065 | 0.070 | 0.040 | -0.001 |
| Expenses to Revenue | 0.959 | 0.057 | 0.979 | 0.069 | -0.021*** |
| **Panel C: University Performance Indicators** | | | | | |
| Research quality | 18.452 | 15.821 | 50.614 | 25.863 | -32.162*** |
| Student satisfaction | 27.081 | 20.049 | 35.565 | 22.761 | -8.484*** |
| Guardian Ranking | 39.517 | 25.691 | 87.004 | 24.732 | -47.486*** |
| **Panel D: Corporate Governance Indicators** | | | | | |
| Governance Committee | 0.381 | 0.486 | 0.213 | 0.410 | 0.167*** |
| Board Size | 19.932 | 4.973 | 22.882 | 4.331 | -2.950*** |
| Ln(Board Size) | 2.963 | 0.242 | 3.111 | 0.205 | -0.148*** |
| Board Diversity (in %) | 33.624 | 10.689 | 34.353 | 11.480 | -0.729 |
| Board Meeting (times) | 4.914 | 1.628 | 5.149 | 1.474 | -0.235** |
| Big4 | 0.635 | 0.482 | 0.916 | 0.278 | -0.281*** |
| N | 863 | | 594 | | 1457 |

**Notes:** All variables are defined in Table A.1. New (Old) universities refer to post-1992 (pre-1992) universities. The sample period is from 2009 to 2020. $^{*}$, $^{**}$, and $^{***}$ indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 3**

Effect of VC narcissism on university performance.

| | Research Quality | | Student Satisfaction | | Reversed Guardian Ranking | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | New | Old | New | Old | New | Old |
| **VC Change** | -4.583 | 2.889 | -3.175 | -4.116 | -0.313 | 14.000** |
| | (-0.96) | (0.92) | (-0.37) | (-0.36) | (-0.04) | (2.06) |
| **VC Change×Narcissism Change** | -16.070*** | -9.570*** | -12.060** | -19.520** | -27.020*** | -4.451 |
| | (-2.83) | (-6.54) | (-2.24) | (-2.72) | (-3.18) | (-0.66) |
| **Ln(Total staff numbers)** | -5.090 | 0.575 | -10.370 | -19.090 | 14.520 | 7.069 |
| | (-0.82) | (0.19) | (-0.87) | (-1.20) | (0.70) | (0.92) |
| **Ln(FT students)** | -26.880* | 1.519 | 27.290 | -44.460 | -2.569 | -9.057 |
| | (-1.73) | (0.14) | (0.89) | (-1.12) | (-0.12) | (-0.31) |
| **High Total Assets** | 1.074 | -12.110*** | 15.190 | 0.608 | -28.480** | 8.697 |
| | (0.19) | (-3.50) | (1.33) | (0.06) | (-2.40) | (0.93) |
| **Gender** | -5.529 | 2.597** | 21.970*** | -19.800** | 10.100 | -16.580 |
| | (-1.05) | (2.31) | (4.16) | (-2.14) | (1.46) | (-1.54) |
| **Age** | 0.080 | -0.103 | -0.063 | -0.352 | 0.093 | 0.547 |
| | (0.27) | (-1.43) | (-0.17) | (-0.66) | (0.17) | (0.91) |
| **Oxbridge** | 4.071 | -2.057** | -22.150*** | 13.670 | -7.531 | 10.190 |
| | (1.12) | (-2.52) | (-3.96) | (1.51) | (-1.08) | (1.03) |
| **Fellow** | 0.766 | 6.442*** | -15.890*** | 2.511 | -7.350 | -2.172 |
| | (0.36) | (8.35) | (-3.20) | (0.60) | (-0.92) | (-0.56) |
| **Science** | 12.890** | 0.562 | 10.970* | 0.440 | 15.190* | -4.714 |
| | (2.59) | (0.82) | (1.98) | (0.09) | (1.98) | (-1.00) |
| **Place of appointment (post-92)** | -0.141 | 8.331*** | -11.730** | -8.469 | 3.169 | -18.460* |
| | (-0.04) | (3.11) | (-2.06) | (-0.86) | (0.43) | (-1.85) |
| **Place of appointment (other)** | 23.850*** | -4.431*** | 16.080*** | -0.728 | 2.965 | 8.127** |
| | (5.43) | (-4.63) | (3.27) | (-0.19) | (0.30) | (2.29) |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Academe** | 12.550 | 3.972** | 25.260** | -16.380 | -17.930 | -27.830* |
| | (1.70) | (2.22) | (2.20) | (-1.00) | (-1.07) | (-1.72) |
| **VC experience** | -0.480 | 0.002 | -1.064 | -0.035 | -1.512 | 1.545** |
| | (-1.27) | (0.01) | (-1.19) | (-0.05) | (-1.41) | (2.77) |
| **Industry experience** | -12.920** | 2.741* | 4.879 | -8.170 | -25.370* | -16.500** |
| | (-2.10) | (2.03) | (0.61) | (-1.09) | (-2.06) | (-2.15) |
| **Constant** | 258.000* | 6.167 | -201.100 | 648.800* | -37.710 | 119.600 |
| | (1.99) | (0.06) | (-0.88) | (1.80) | (-0.19) | (0.43) |
| **University FEs** | YES | YES | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES | YES | YES |
| **R2 (within)** | 0.848 | 0.984 | 0.671 | 0.673 | 0.613 | 0.480 |
| **N** | 104 | 100 | 107 | 104 | 95 | 101 |
| **DoF** | 26 | 24 | 27 | 26 | 24 | 25 |

**Notes:** All variables are defined in Table A.1. New (Old) refer to post-1992 (pre-1992) universities. The sample period is from 2009 to 2020. *t*-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 4**

VC narcissism and excessive financial risk taking.

| | Financial Security Index | | Asset Turnover | | Return on Capital Employed | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | New | Old | New | Old | New | Old |
| **VC Change** | -1.506 | 3.081 | -0.024 | 0.003 | -0.009 | 0.031 |
| | (-0.53) | (1.32) | (-1.28) | (0.12) | (-0.72) | (1.67) |
| **VC Change×Narcissism Change** | -4.749 | -5.077*** | -0.008 | -0.119*** | -0.025 | -0.048*** |
| | (-1.28) | (-3.10) | (-0.25) | (-4.75) | (-1.31) | (-4.75) |
| **VC characteristics** | YES | YES | YES | YES | YES | YES |
| **University characteristics** | YES | YES | YES | YES | YES | YES |
| **University FEs** | YES | YES | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES | YES | YES |
| **R2 (within)** | 0.387 | 0.813 | 0.636 | 0.879 | 0.491 | 0.762 |
| **N** | 106 | 103 | 106 | 103 | 106 | 103 |
| **DoF** | 27 | 26 | 27 | 26 | 27 | 26 |

**Notes:** All variables are defined in Table A.1. New (Old) refer to post-1992 (pre-1992) universities. *t*-statistics in parentheses. The sample period is from 2009 to 2020. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

## Table 5

VC narcissism and empire-building strategies.

| | Capital Expenditures | | Expenses to Revenue | |
|---|---|---|---|---|
| | (1) | (2) | (5) | (6) |
| | New | Old | New | Old |
| **VC Change** | 6026.200 | 14757.400 | 0.033 | -0.016 |
| | (1.44) | (0.78) | (1.32) | (-0.55) |
| **VC Change×Narcissism Change** | -572.000 | -5422.700 | 0.044** | 0.017 |
| | (-0.05) | (-0.37) | (2.16) | (0.63) |
| **VC characteristics** | YES | YES | YES | YES |
| **University characteristics** | YES | YES | YES | YES |
| **University FEs** | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES |
| **R2 (within)** | 0.278 | 0.403 | 0.535 | 0.801 |
| **N** | 108 | 108 | 106 | 103 |
| **DoF** | 27 | 26 | 27 | 26 |

**Notes:** All variables are defined in Table A.1. New (Old) refer to post-1992 (pre-1992) universities. The sample period is from 2009 to 2020. *t*-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 6**

Controlling for the moderating effect of university governance.

| | Research Quality | | Student Satisfaction | | Reversed Guardian Ranking | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | New | Old | New | Old | New | Old |
| **VC Change** | -3.682 | 3.047 | 0.004 | 3.254 | -7.553 | 28.950** |
| | (-0.74) | (1.17) | (0.00) | (0.24) | (-1.07) | (2.70) |
| **VC Change×Narcissism Change** | -14.660** | -7.808** | -10.220 | -7.422 | -27.610*** | 17.850* |
| | (-2.58) | (-2.60) | (-1.65) | (-0.72) | (-4.67) | (1.80) |
| **VC Change×Governance Committee** | 7.408** | -2.214 | -3.540 | -4.128 | 20.260** | 0.013 |
| | (2.36) | (-0.82) | (-0.45) | (-0.58) | (2.57) | (0.00) |
| **Governance Committee** | 1.007 | -11.220 | -4.497 | 21.620 | -12.990** | 6.685 |
| | (0.49) | (-1.60) | (-0.62) | (1.38) | (-2.75) | (0.37) |
| **VC characteristics** | YES | YES | YES | YES | YES | YES |
| **University characteristics** | YES | YES | YES | YES | YES | YES |
| **University FEs** | YES | YES | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES | YES | YES |
| **R2 (within)** | 0.865 | 0.991 | 0.676 | 0.656 | 0.668 | 0.607 |
| **N** | 98 | 91 | 101 | 95 | 89 | 92 |
| **DoF** | 25 | 24 | 26 | 26 | 23 | 25 |

**Notes:** All variables are defined in Table A.1. New (Old) refer to post-1992 (pre-1992) universities. The sample period is from 2009 to 2020. *t*-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Fig. 1.** Distribution of VC narcissism.

This figure presents the sample distribution of Vice Chancellor narcissism over a 10-year period from 2009/2010 to 2019/2020.

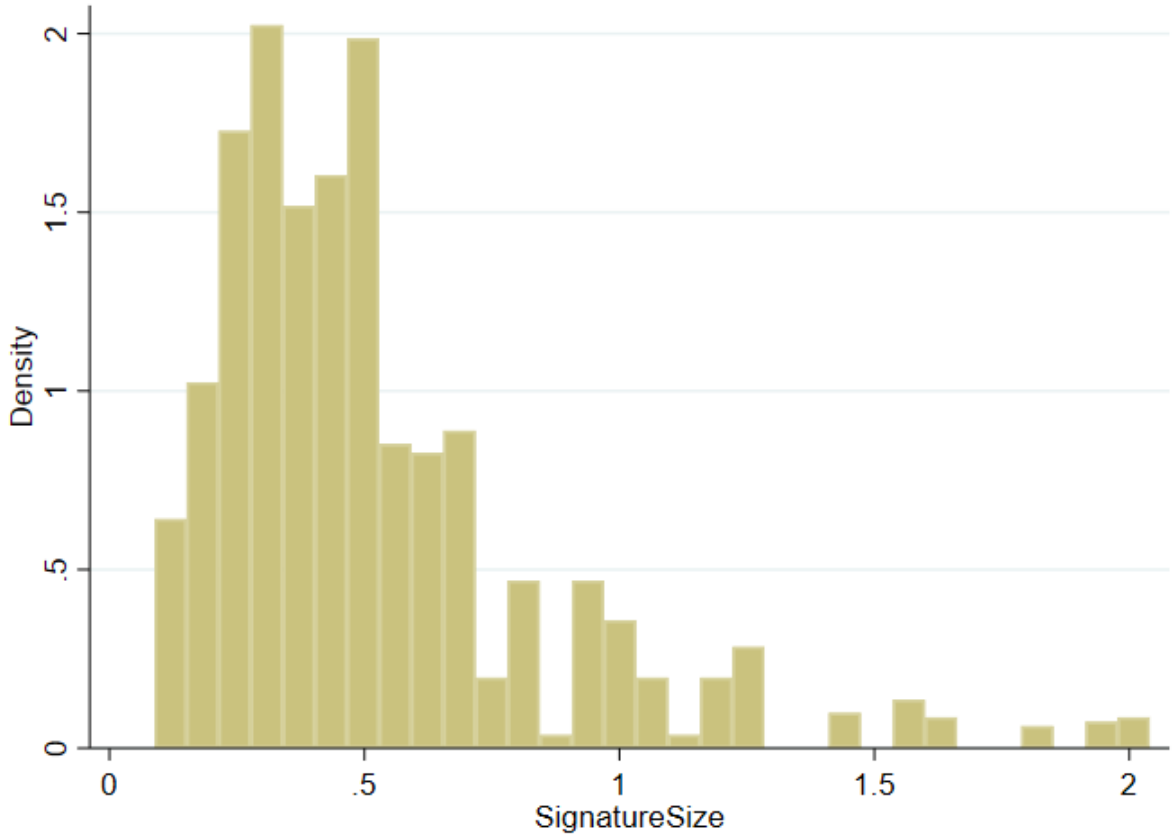
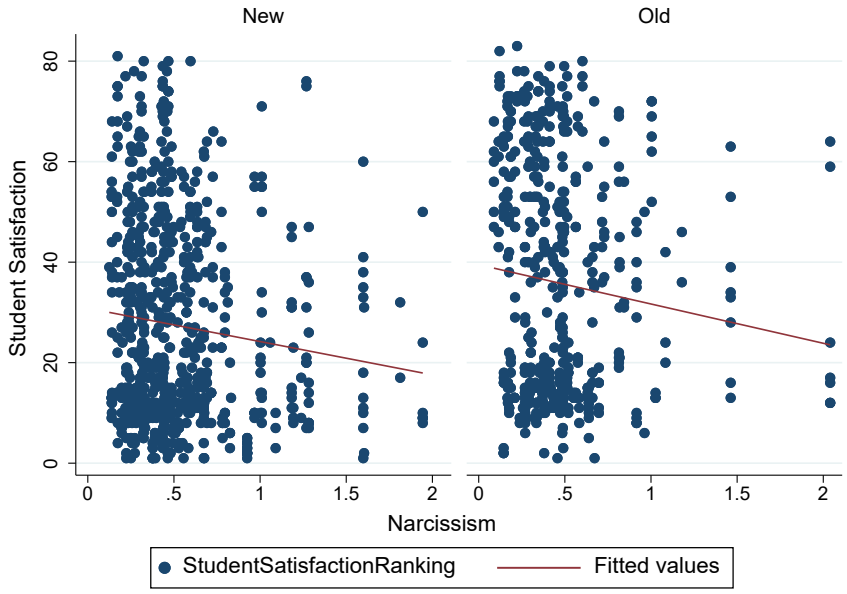


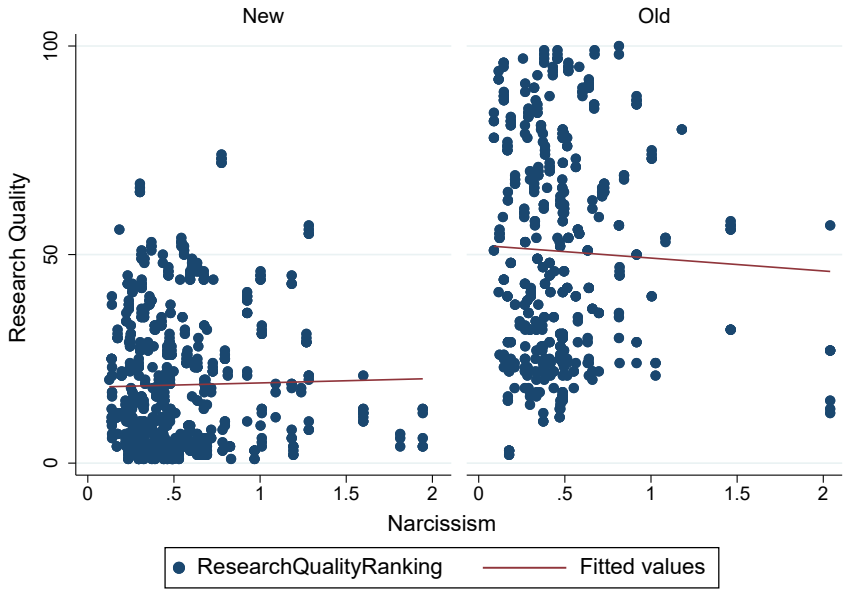
**Fig. 2.** University performance indicator and VC narcissism.

This figure shows visual evidence of the correlations between Vice Chancellor narcissism and university performance indicators, separately for New and Old universities. Vice Chancellor narcissism refers to the cross-sectional levels of VC narcissism. Panel A is the scatter plot that shows Vice Chancellor narcissism and student satisfaction. Panel B is the scatter plot that shows Vice Chancellor narcissism and research quality. Panel C is the scatter plot that shows Vice Chancellor narcissism and the Guardian ranking. The sample period is from 2009 to 2020.

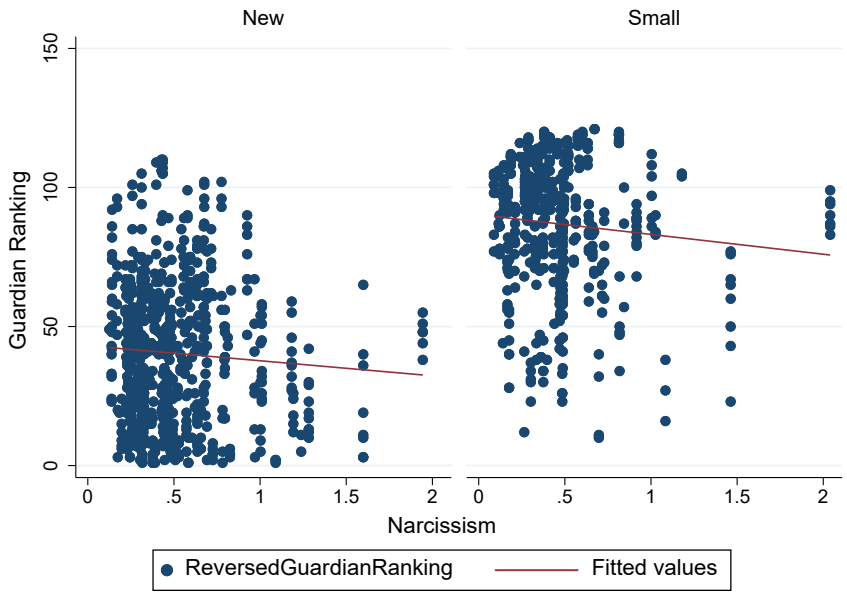
***Panel A***




***Panel B***



***Panel C***


New
Small
Guardian Ranking
150
100
50
0
0
.5
1
1.5
2
Narcissism
ReversedGuardianRanking
Fitted values

## APPENDIX I

### *Current state of the literature on leadership and narcissism*

As a psychoanalyst leadership expert and an anthropologist, Michael Maccoby observed a drastic change in the personality of the strategic leader which he believed to closely resemble the traits of narcissism. Indeed, the revered business leaders, such as Oracle's Larry Ellison, Apple's Steve Jobs and Tesla's Elon Musk, have often been referred to as narcissists. Their success is often attributed to their bold vision, extreme self-confidence, and great tenacity to win above all else. Summoning charismatic and visionary leadership (i.e., market pressure) is one among the factors that explains the phenomenon of engendering a fair share of narcissistic leaders (Maccoby, 2004; Rosenthal & Pittinsky, 2006; Cragun et al., 2020).

Narcissists crave to be in the spotlight and are attracted to power and status (Nevicka et al., 2011; Carlson & DesJardins, 2015). As such, they tend to manipulate and exploit others without compunction using their charm, persuasion, or coercion in the pursuit of what they want, in this case, a leadership role. Prior studies on leader emergence (e.g., Paunonen et al., 2006; Brunell et al., 2008; Nevicka et al., 2011; Nevicka et al., 2018; Rovelli & Curnis, 2021) document that narcissistic individuals are more likely to be chosen as leaders than their non-narcissistic peers. Interestingly, Campbell et al. (2004) and Blair et al. (2008) note that narcissists' leader emergence is unrelated to their performance, suggesting that narcissists are no more competent than their non-narcissist counterparts. This evidence, of the high likelihood for narcissists to emerge as leaders regardless of their performance, raises the question: why do narcissists often emerge as leaders despite the negative aspects of their personality?

Intriguingly, narcissists tend to make positive first impressions contrary to their proclivity for entitled, hostile, exploitative and manipulative tendencies. Narcissists' self-enhancement often appeals to others in the initial phase of acquaintanceship (Paulhus, 1998;

Brunell et al., 2008; Back et al., 2010; Carlson & DesJardins, 2015). When first meeting, with a strong sense of self-confidence and assured body language, narcissistic individuals are perceived as interesting, charismatic, and interpersonally skilled (Deluga, 1997; Chatterjee & Hambrick, 2007). Their sense of entitlement and manipulative behaviour is even held to be attractive and charming (Back et al. 2010). Narcissists' sense of self-confidence and self-efficacy not only inspires and attracts followers (Maccoby, 2003; Hogan & Kaiser, 2005), but leads them to self-promote and cultivate situations in which they can 'shine' (Nevicka et al., 2011). For these reasons, it is not difficult to see why narcissistic individuals often emerge as leaders (Campbell et al., 2004; Judge et al., 2006; Brunell et al., 2008; Nevicka et al., 2011; Rovelli & Curnis, 2021). However, Nevicka et al. (2018) find that greater exposure to narcissistic leaders can produce negative association.

As is evident from previous studies (e.g., Deluga, 1997; Maccoby, 2004; Brunell et al., 2008; O'Reilly et al., 2014, Zhang et al., 2017), narcissistic individuals possess many leadership traits, and qualities of being visionary, charismatic, extraverted, self-confident. Maccoby (2007) points out that narcissists particularly thrive in turbulent environments like in wartime or during periods of technological change. This may be because narcissists' self-confidence allows them to be assertive, even domineering (Padilla et al., 2007). Maccoby (2004, p. 96) notes that "Narcissists have visions – but that's not enough. People in mental hospital also have visions.", highlighting narcissists' personal magnetism (i.e., the power of charisma) in attracting followers. Furthermore, several studies have already established that the coexistence of leader narcissism and humility promote greater creativity and team productivity (e.g., Lewis et al., 2000; Goncalo et al., 2010; Owens et al., 2015; Zhang et al., 2017). Due to their desire for ego-enhancement, narcissistic leaders perform better in situations that provide them with opportunities to maintain their unrealistically positive self-views (Nevicka et al., 2011).

Notwithstanding the positive aspects, narcissistic leaders are prone to cheating and violating integrity standards (Judge et al., 2006). Importantly, the interpersonal skills of narcissists are strongly impaired by their low levels of empathy, a tendency to exploit others, and an excessive sense of entitlement. Narcissists' low empathy and oversensitivity to criticism makes them poor listeners (Rosenthal & Pittinsky, 2006). Moreover, narcissists tend to exaggerate their abilities, take credit for others' efforts, and accuse others of their mistakes (Campbell et al., 2000), even though they understand that their behaviour could alienate those around them and derail their career (Carlson & DesJardins, 2015). High levels of distrust cause narcissists to be hostile and aggressive towards subordinates who challenge them (Miller et al., 2011; Michel & Bowling, 2013). Narcissists tend to worsen interpersonal conflicts (e.g., Campbell et al. 2005, Grijalva & Harms, 2014). Laboratory experiments also show that the effectiveness of negotiations is impaired when narcissists are involved (Church et al., 2020). As a result, narcissistic leaders are more likely to create a tense and disruptive work environment with low employee morale over the long run (Maccoby, 2007; Padilla et al., 2007; Blair et al., 2008).

Maccoby (2004, p.100) states that, "More and more large corporations are getting into bed with narcissists. They are finding that there is no substitute for narcissistic leaders in an age of innovation." After all, plenty of successful innovative business leaders, who daringly took a risky leap into innovative projects, are narcissistic. An anecdotal example is the former Apple CEO Steve Jobs, who was considered both a narcissist and a technological visionary and is credited with revolutionising the world with groundbreaking innovations. Seemingly, there is a love-hate relationship with narcissistic leaders where people revere narcissistic leaders for their bold vision and risk-taking behaviour when the outcomes are positive; but treat them with disdain as soon as the outcomes of their decisions result in failure.

## APPENDIX II

### Table A.1

Variable definitions and data source.

| **Panel A: Vice-Chancellor Characteristics** | | |
|---|---|---|
| **Variable** | **Definition** | **Source** |
| Gender | Dummy variable that equals one if the VC is a male (biologically), and zero otherwise. | University profiles, Wikipedia, Linkedin |
| Age | The age of VC | University profiles, Wikipedia, Linkedin |
| Oxbridge | Dummy variable that equals one if the VC is a graduate of University of Oxford or Cambridge, and zero otherwise. | University profiles, Wikipedia, Linkedin |
| Fellow | Dummy variable that equals one if the VC holds a Fellowship, and zero otherwise. | University profiles, Wikipedia, Linkedin |
| Science | Dummy variable that equals one if the academic background of VC is science-related, and zero otherwise. | University profiles, Wikipedia, Linkedin |
| Place of appointment (post-92) | Dummy variable that equals one if the place of appointment prior to appointment as VC was at post-92 UK university, and zero otherwise. | University profiles, Wikipedia, Linkedin |
| Place of appointment (other) | Dummy variable that equals one if the place of appointment prior to appointment as VC was at all other types of institution (including Overseas universities, as well as non-academic related institutions in the UK and Overseas), and zero otherwise | University profiles, Wikipedia, Linkedin |
| Academe | Represents the source of selection immediately prior to appointment as VC. Dummy variable that equals one if the VC is internal to academe, or related, and zero otherwise. | University profiles, Wikipedia, Linkedin |
| VC experience | Years of experience in a VC role. | University profiles, Wikipedia, Linkedin |
| VC pay | VC salary (including pensions) | University annual report |

| | | |
|---|---|---|
| Industry experience | Dummy variable that equals one if the VC has industry experience prior to current role, and zero otherwise. | University profiles, Wikipedia, Linkedin |
| VC Narcissism | Multiplying the length and width (in centimeters), and divided the square area by the number of letters in the VC's name. | University annual report, University strategic plan, University letter |
| VC Narcissism (adj) | Multiplying the length and width (in centimeters) adjusted for the line and dot, and divided the square area by the number of letters in the VC's name. | |
| High Narcissism | Dummy variable that equals one if a VC is above our sample median, and zero otherwise. | |
| Electronic signature | Dummy variable that equals one if the VC signature overlaps the printed VC name on the document, and zero otherwise. | University annual report, University strategic plan, University letter |
| **Panel B: University Characteristics** | | |
| Russel | Dummy variable that equals one if the university is a member of Russell Group, and zero otherwise. | University profiles |
| Pre1992 | Dummy variable that equals one if the university is an old pre-1992 university, and zero otherwise. | University profiles |
| Total staff numbers | The total number of staffs of a university in a given year. | HESA |
| Ln(Total staff numbers) | Natural logarithm of the total number of staffs of a university in a given year. | HESA |
| FT students | Sum of FTE UG and PG students. | HESA |
| Ln(FT students) | Natural logarithm of the sum of FTE UG and PG students. | HESA |
| Total Assets | Total assets of a university in a given year. | HESA |
| Ln(Total Assets) | Natural logarithm of the total assets of a university in a given year. | HESA |
| HighTotalAssets | Dummy variable that equals one if total assets is above the sample median, and zero otherwise. | HESA |

| | | |
|---|---|---|
| Financial Security | The financial security index (FSI) provided by the Higher Education Statistical Agency (HESA) for each university in the UK. This indicator is based on four financial metrics:<br>**(1)** The last 2 years' average historical cost surplus as a percentage of total income.<br>**(2)** Days ratio of general funds to total expenditure.<br>**(3)** Days ratio of net liquidity to total expenditure, excluding depreciation.<br>**(4)** Long term borrowings as a percentage of total income.<br>Each of these four metrics is separately ranked, and the subsequent 4 rankings are then summed. A final ranking is produced from this sum, and this is the FSI. | HESA |
| Asset Turnover | The total revenue scaled by total sales. | HESA |
| Capital Expenditures | All expenditure which increases the value of a higher education provider's (or a subsidiary undertaking's) fixed assets, including the purchase of land, buildings, and those items of equipment and intangible assets. | HESA |
| Capital Intensity | The capital expenditures scaled by total assets. | HESA |
| Expenses to Revenue | Total expenses scaled by total revenue. | HESA |
| Return on Capital Employed | A measure of university's profitability by dividing its net operating income by its total capital employed (total assets minus current liabilities). | HESA |
| **Panel C: Key Performance Indicators (KPIs)** | | |
| **Teaching quality indicators** | | |
| (1) Student satisfaction | Represents student experience, which is measured by the average NSS scores in the organisation and management, learning resources, learning community and student voice sections. | HESA |

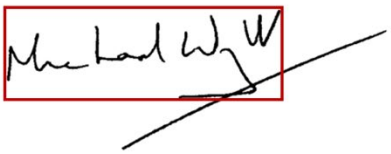
| | | |
|---|---|---|
| (2) Graduate prospects | Destinations of full-time first-degree UK-domiciled leavers. The indicator is based on the activity of leavers 15 months after graduation, whether the students entered high-skilled employment and/or graduate-level further study. | The Times Good University Guide |
| **Research quality indicators** | | |
| (1) Research quality | Overall quality of research based on REF. | REF (formerly RAE) publication, The Times Good University Guide |
| (2) Ln(Research grants to total assets) | Natural logarithm of research grants to total assets. | HESA |
| **League performance indicators** | | |
| (1) Guardian ranking | The overall score and ranking based on *The Guardian Newspaper*. | Guardian Newspaper |
| (2) GUG ranking | The overall score and ranking based on The Times Good University Guide. | The Times Good University Guide |
| **Panel D: Corporate Governance Indicators** | | |
| Governance Committee | Dummy variable that equals one if university *i* has governance committee in year *t*, and zero otherwise. | University annual report |
| Board Size | The number members of a university executive/senior management team. | University annual report |
| Ln(Board Size) | Natural logarithm of the board size of a university in a given year. | University annual report |
| Board Diversity | Dummy variable that equals one if the board gender diversity of university *i*, which is measured by the percentage of female in a university executive/senior management team, is less than the mean value of the sample in year *t*, and zero otherwise. | University annual report |

| | | |
|---|---|---|
| Board Meeting | Dummy variable that equals one if the board meeting of university *i*, which is measured by the natural logarithm of the number of a university executive/senior management team meetings in a given year, is less than the mean value of the sample in year *t*, and zero otherwise. | University annual report |
| Big4 | Dummy variable that equals 1 if university i hires Deloitte, Ernst & Young (EY), KPMG or PricewaterhouseCoopers (PwC) as external auditor in year *t*, and zeo otherwise. | University annual report |

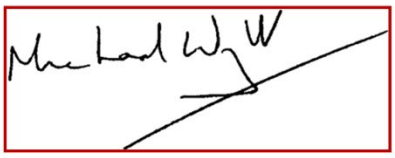
## APPENDIX III

**Fig. A.1.** Signature examples.

The left figure shows the way we measure narcissism based on the size of the signature of Vice Chancellor, ignoring the dot at the end of the signature or/and underline at the bottom of the signature. The right figure shows the way we measure narcissism based on the size of the signature of Vice Chancellor, adjusting for the dot at the end of the signature or/and underline at the bottom of the signature.



**Left:** Area without the underline.

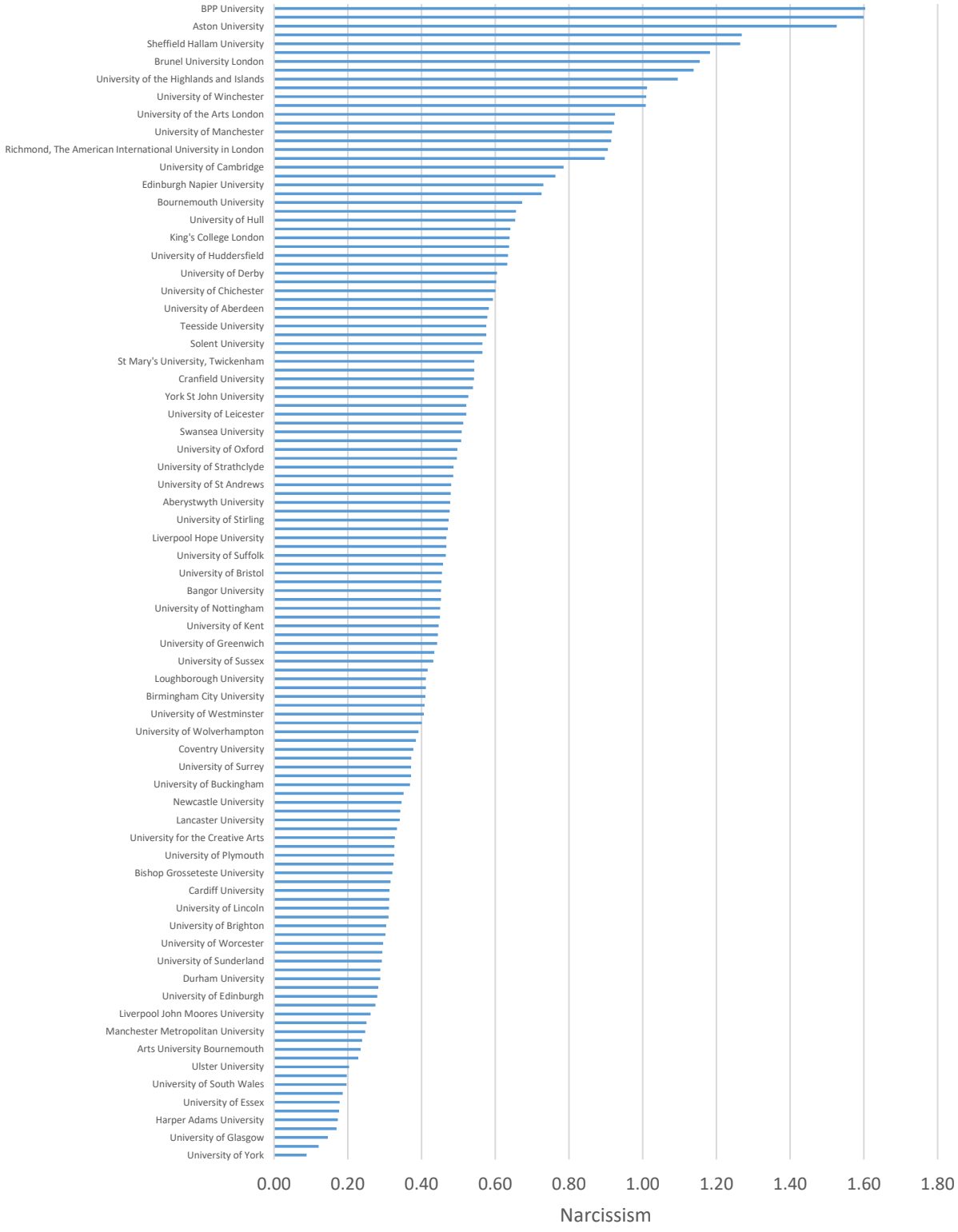


**Right:** Area adjusted for the underline.

## APPENDIX IV

**Fig. A.2.** VC narcissism by university.

This figure presents the sample distribution of Vice Chancellor narcissism by university over a 10-year period from 2009/2010 to 2019/2020.



## APPENDIX V
## Table A.2: Correlation table

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **(1)** Age | 1.00 | | | | | | | | | | | | | | | | | | | | | | | |
| **(2)** Oxbridge | -0.05 | 1.00 | | | | | | | | | | | | | | | | | | | | | | |
| **(3)** Fellow | -0.02 | 0.00 | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| **(4)** Science | 0.07 | -0.16 | 0.18 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| **(5)** Place of appointment (post-92) | -0.08 | -0.19 | -0.16 | -0.15 | 1.00 | | | | | | | | | | | | | | | | | | | |
| **(6)** Place of appointment (others) | -0.06 | 0.11 | -0.09 | -0.05 | -0.33 | 1.00 | | | | | | | | | | | | | | | | | | |
| **(7)** Academe | 0.12 | -0.09 | 0.17 | 0.22 | 0.18 | -0.54 | 1.00 | | | | | | | | | | | | | | | | | |
| **(8)** VC experience | 0.47 | -0.04 | -0.05 | 0.04 | 0.05 | -0.09 | 0.08 | 1.00 | | | | | | | | | | | | | | | | |
| **(9)** Industry experience | -0.09 | 0.06 | 0.09 | 0.15 | -0.19 | 0.28 | -0.34 | -0.11 | 1.00 | | | | | | | | | | | | | | | |
| **(10)** VC Narcissism | -0.01 | 0.19 | -0.10 | -0.14 | 0.03 | 0.01 | -0.08 | -0.06 | -0.02 | 1.00 | | | | | | | | | | | | | | |
| **(11)** VC Narcissism (adj) | -0.01 | 0.18 | -0.09 | -0.12 | 0.03 | 0.00 | -0.07 | -0.05 | -0.03 | 0.98 | 1.00 | | | | | | | | | | | | | |
| **(12)** Electronic Signature | -0.02 | -0.07 | 0.08 | 0.24 | -0.03 | -0.04 | 0.05 | -0.07 | 0.09 | -0.26 | -0.28 | 1.00 | | | | | | | | | | | | |
| **(13)** Ln(Total staff numbers) | -0.04 | 0.04 | 0.18 | 0.17 | -0.29 | 0.07 | 0.01 | -0.05 | 0.02 | -0.07 | -0.07 | 0.18 | 1.00 | | | | | | | | | | | |
| **(14)** Ln(FT students) | 0.04 | 0.01 | 0.22 | 0.24 | -0.16 | -0.06 | 0.16 | -0.01 | -0.04 | -0.07 | -0.06 | 0.16 | 0.64 | 1.00 | | | | | | | | | | |
| **(15)** High Total Assets | 0.04 | 0.10 | 0.19 | 0.12 | -0.34 | 0.02 | -0.06 | -0.06 | 0.03 | -0.09 | -0.08 | 0.18 | 0.62 | 0.57 | 1.00 | | | | | | | | | |
| **(16)** Financial Security | 0.03 | -0.02 | -0.10 | -0.04 | 0.07 | 0.07 | -0.14 | 0.12 | -0.04 | 0.02 | 0.02 | 0.00 | 0.01 | -0.10 | -0.03 | 1.00 | | | | | | | | |
| **(17)** Asset Growth | -0.02 | 0.04 | -0.05 | 0.02 | 0.03 | 0.00 | -0.04 | 0.04 | 0.00 | 0.08 | 0.08 | -0.04 | -0.05 | -0.03 | 0.02 | 0.17 | 1.00 | | | | | | | |
| **(18)** Capital Expenditures | 0.15 | 0.03 | 0.22 | 0.16 | -0.22 | 0.06 | 0.00 | 0.06 | -0.01 | -0.01 | 0.00 | 0.08 | 0.46 | 0.45 | 0.48 | 0.00 | 0.11 | 1.00 | | | | | | |
| **(19)** Capital Intensity | -0.01 | 0.05 | -0.07 | 0.01 | 0.05 | 0.00 | -0.01 | 0.06 | 0.05 | 0.04 | 0.06 | -0.07 | -0.03 | -0.02 | -0.08 | 0.04 | 0.17 | 0.29 | 1.00 | | | | | |
| **(20)** Governance Committee | -0.01 | 0.01 | 0.02 | -0.13 | 0.21 | 0.02 | 0.06 | -0.07 | -0.09 | 0.02 | -0.01 | -0.04 | -0.13 | 0.01 | -0.12 | -0.08 | -0.04 | -0.17 | -0.06 | 1.00 | | | | |
| **(21)** Ln(Board Size) | 0.05 | 0.06 | 0.02 | 0.10 | -0.25 | 0.02 | -0.10 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | 0.16 | 0.01 | 0.16 | -0.05 | 0.08 | 0.14 | 0.05 | -0.12 | 1.00 | | | |
| **(22)** Board Diversity | 0.08 | 0.06 | 0.01 | -0.03 | 0.09 | -0.08 | -0.05 | -0.01 | -0.04 | 0.00 | -0.02 | -0.01 | -0.10 | 0.09 | 0.05 | -0.17 | -0.02 | 0.04 | -0.19 | 0.05 | -0.08 | 1.00 | | |
| **(23)** Board Meeting | 0.06 | 0.01 | 0.12 | 0.14 | -0.06 | -0.02 | 0.08 | -0.12 | -0.07 | -0.01 | 0.01 | 0.06 | 0.19 | 0.21 | 0.16 | -0.05 | 0.01 | 0.31 | 0.04 | -0.05 | -0.06 | 0.04 | 1.00 | |
| **(24)** Big4 | 0.08 | 0.01 | 0.16 | 0.06 | -0.30 | 0.06 | -0.10 | -0.04 | -0.02 | -0.02 | 0.01 | 0.02 | 0.14 | 0.09 | 0.22 | -0.11 | -0.03 | 0.18 | -0.07 | -0.13 | 0.18 | 0.02 | 0.14 | 1.00 |

**Notes:** All variables are defined in Table A.1.

## Appendix VI

Table A.3 Controlling for electronic signatures.

| | Research Quality | | Student Satisfaction | | Reversed Guardian Ranking | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | New | Old | New | Old | New | Old |
| **VC Change** | -4.585 | 2.826 | -3.163 | -3.091 | -2.961 | 16.640** |
| | (-0.95) | (0.89) | (-0.37) | (-0.26) | (-0.37) | (2.15) |
| **VC Change×Narcissism Change** | -16.160** | -9.665*** | -12.200** | -17.940** | -24.550*** | -0.533 |
| | (-2.69) | (-5.76) | (-2.27) | (-2.14) | (-2.88) | (-0.07) |
| **Electronic Signature** | -0.194 | -0.855 | 1.065 | -2.029 | 13.680 | -1.237 |
| | (-0.08) | (-0.59) | (0.34) | (-0.34) | (1.28) | (-0.17) |
| **VC characteristics** | YES | YES | YES | YES | YES | YES |
| **University characteristics** | YES | YES | YES | YES | YES | YES |
| **University FEs** | YES | YES | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES | YES | YES |
| **R2 (within)** | 0.848 | 0.983 | 0.671 | 0.675 | 0.632 | 0.521 |
| **N** | 104 | 98 | 107 | 102 | 95 | 99 |
| **DoF** | 26 | 24 | 27 | 26 | 24 | 25 |

**Notes:** All variables are defined in Table A.1. New (Old) refer to post-1992 (pre-1992) universities. The sample period is from 2009 to 2020. *t*-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

## Appendix VII

Table A.4 Controlling for sample heterogeneity.

| | Research Quality | | Student Satisfaction | | Reversed Guardian Ranking | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | New | Old | New | Old | New | Old |
| **VC Change** | -3.420 | 2.761 | -3.952 | -4.510 | -0.587 | 11.43 |
| | (-0.68) | (0.85) | (-0.52) | (-0.39) | (-0.08) | (1.69) |
| **VC Change×Narcissism Change** | -17.95*** | -9.515*** | -26.87** | -20.48** | -29.58* | -3.482 |
| | (-3.66) | (-6.43) | (-2.22) | (-2.69) | (-1.96) | (-0.56) |
| **VC characteristics** | YES | YES | YES | YES | YES | YES |
| **University characteristics** | YES | YES | YES | YES | YES | YES |
| **University FEs** | YES | YES | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES | YES | YES |
| **R2 (within)** | 0.915 | 0.984 | 0.720 | 0.673 | 0.613 | 0.506 |
| **N** | 93 | 99 | 93 | 99 | 93 | 99 |
| **DoF** | 24 | 24 | 24 | 24 | 24 | 24 |

**Notes:** All variables are defined in Table A.1. New (Old) refer to post-1992 (pre-1992) universities. The sample period is from 2009 to 2020. *t*-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

## Appendix VIII

Table A.5 Controlling for the moderating effect of university governance.

| | Panel A: New Universities | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Research Quality | | | Student Satisfaction | | | Reversed Guardian Ranking | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| **VC Change** | 69.32** | -7.431 | -3.976 | 101.4** | 0.924 | -5.791 | 178.5*** | 29.80 | 1.732 |
| | (2.67) | (-0.72) | (-0.89) | (2.11) | (0.08) | (-0.74) | (3.23) | (1.42) | (0.21) |
| **VC Change×Narcissism Change** | -19.42*** | -15.95*** | -15.70** | -12.77** | -11.45** | -11.96* | -35.12*** | -26.84*** | -27.35** |
| | (-3.78) | (-2.83) | (-2.59) | (-2.16) | (-2.14) | (-1.71) | (-5.61) | (-4.20) | (-2.70) |
| **VC Change×Ln(Board Size)** | -22.75*** | | | -32.27** | | | -58.82*** | | |
| | (-2.93) | | | (-2.21) | | | (-3.46) | | |
| **Ln(Board Size)** | 24.40** | | | 16.09 | | | 1.778 | | |
| | (2.58) | | | (0.78) | | | (0.09) | | |
| **VC Change×Board Diversity** | | 0.108 | | | -0.0415 | | | -0.834* | |
| | | (0.52) | | | (-0.14) | | | (-1.96) | |
| **Board Diversity** | | -0.0961 | | | -0.374 | | | 0.483 | |
| | | (-0.46) | | | (-1.52) | | | (1.30) | |
| **VC Change×Big4** | | | -1.176 | | | 3.236 | | | 4.150 |
| | | | (-0.25) | | | (0.45) | | | (0.39) |
| **Big4** | | | 0.309 | | | 11.59 | | | -6.801 |
| | | | (0.03) | | | (1.42) | | | (-0.47) |
| **VC characteristics** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **University characteristics** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **University FEs** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **R2 (within)** | 0.878 | 0.848 | 0.860 | 0.689 | 0.689 | 0.736 | 0.676 | 0.622 | 0.630 |
| **N** | 98 | 98 | 94 | 101 | 101 | 97 | 89 | 89 | 87 |
| **DoF** | 25 | 25 | 25 | 26 | 26 | 26 | 23 | 23 | 23 |
| | **Panel B: Old Universities** | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **VC Change** | 56.44** | 4.545 | 6.115** | 14.29 | -5.086 | 8.243 | 20.01 | 28.94** | 15.96 |
| | (2.78) | (1.25) | (2.36) | (0.19) | (-0.25) | (0.58) | (0.36) | (2.64) | (1.49) |
| **VC Change×Narcissism Change** | -8.297*** | -3.061 | -8.006*** | -6.689 | -11.16 | -15.08 | 21.21** | 16.51* | 6.977 |
| | (-3.17) | (-1.19) | (-3.68) | (-0.63) | (-0.91) | (-1.62) | (2.37) | (1.79) | (1.02) |
| **VC Change×Ln(Board Size)** | -18.03** | | | -3.506 | | | 2.865 | | |
| | (-2.79) | | | (-0.15) | | | (0.16) | | |
| **Ln(Board Size)** | 8.816* | | | 45.42* | | | 19.82* | | |
| | (1.87) | | | (2.04) | | | (1.72) | | |
| **VC Change×Board Diversity** | | 0.00418 | | | 0.188 | | | -0.114 | |
| | | (0.06) | | | (0.45) | | | (-0.42) | |
| **Board Diversity** | | -0.0227 | | | -0.481 | | | -0.307 | |
| | | (-0.36) | | | (-1.25) | | | (-1.08) | |
| **VC Change×Big4** | | | -4.891* | | | -8.869 | | | 6.281 |
| | | | (-2.04) | | | (-0.96) | | | (0.76) |
| **Big4** | | | 5.612 | | | -9.905 | | | -13.79 |
| | | | (1.59) | | | (-0.92) | | | (-1.04) |
| **VC characteristics** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **University characteristics** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **University FEs** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **Year FEs** | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| **R2 (within)** | 0.987 | 0.987 | 0.987 | 0.726 | 0.703 | 0.650 | 0.679 | 0.672 | 0.517 |
| **N** | 88 | 87 | 95 | 92 | 91 | 99 | 89 | 88 | 96 |
| **DoF** | 23 | 23 | 24 | 25 | 25 | 26 | 24 | 24 | 25 |

**Notes:** All variables are defined in Table A.1. New (Old) refer to post-1992 (pre-1992) universities. The sample period is from 2009 to 2020. *t*-statistics in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.