

TUM School of Management

Human Resource Management in Higher Education: Performance Measurement, Recruiting, and Personnel Selection

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Abstract

Across a series of three essays, this thesis investigates different human resource management practices of higher education institutions. The first essay analyzes the influence of performance measurement on scientists' behavior, employing qualitative semi-structured interviews with five groups of stakeholders of the higher education system. The interviewees reported that the current performance measurement practices in academia have positive behavioral consequences (e.g., higher productivity) but mainly negative behavioral consequences (e.g., questionable research practices). Moreover, the results indicate that the negative behavioral consequences can be described as gaming performance measurement (i.e., achieving performance goals by reducing performance quality and focusing on those tasks that are measured) and that gaming performance measurement can be classified as deviant workplace behavior (i.e., a voluntary violation of organizational norms that harms the university). We propose that gaming performance measurement is a type of deviant workplace behavior that is not yet included in current frameworks of workplace deviance. Drawing from both literature on goal setting and literature on deviant workplace behavior, we discuss various explanations for gaming performance measurement and the underlying psychological processes.

The second essay relies on a content analysis of job advertisements for professorships and growth curve modeling to explore the relationship between the demand for leadership and management skills and the performance of universities. Universities that had included criteria related to leadership and management in their job advertisements for professorships experienced a greater increase in publication performance than universities that did not. In addition to the total number of publications, this finding also pertains to the number of publications with international co-authors and the number of publications in the top 10% of

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journals. The essay provides initial evidence that knowledge-intensive organizations such as higher education institutions outperform competing organizations when they attach importance to leadership and management criteria in the recruiting of future employees. In the discussion, we propose several possible explanations for our findings, such as the processes of applicant attraction and self-selection, and discuss various avenues for future research.

The third essay examines how appointment committee members consider and weigh up different criteria of scholarly performance when they evaluate candidates for a full professorship. Using adaptive choice-based conjoint analysis, we identify the implicit appointment preferences of scholars from different countries, scientific fields, and types of higher education institutions. We find that scholars attach more importance to candidates' research performance than to their teaching performance and that they focus more on quantitative criteria than on qualitative criteria. On average, the three most important appointment criteria are the extent to which a candidate has published in top-tier journals, the total number of publications, and the sum of money acquired through research grants. In addition, we find that there are three distinct patterns of appointment preferences, based on a two-step segmentation analysis including unsupervised learning and supervised learning. Scholars' patterns of appointment preferences are related to different variables, including country, scientific field, organizational characteristics (e.g., type of higher education institution), and individual characteristics (e.g., scholars' own research performance). Comparing scholars' implicit appointment preferences to their explicit appointment preferences showed that there are considerable discrepancies. The essay contributes not only to research on professorial appointments but also highlights the possibilities of adaptive choicebased conjoint analysis as a new methodology to study complex decisions like personnel selection decisions.

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Abstract

Taken together, the three individual essays in this thesis shed new light on the topics performance measurement, recruiting, and personnel selection in higher education institutions. They not only make important contributions to the extant literature on human resource management practices in higher education institutions but also offer valuable practical implications and propose promising avenues for future research.

Kurzfassung (German Abstract)

In einer Reihe von drei Essays werden in dieser Dissertation verschiedene Praktiken des Personalmanagements von Hochschuleinrichtungen untersucht. Im ersten Essay wird der Einfluss von Leistungsmessung auf das Verhalten von Wissenschaftler*innen anhand von qualitativen halbstrukturierten Interviews mit fünf Gruppen von Stakeholdern des Hochschulsystems analysiert. Die Befragten berichteten, dass die derzeitigen Praktiken der Leistungsmessung in der Wissenschaft zwar positive Verhaltensfolgen (z. B. höhere Produktivität), aber hauptsächlich negative Verhaltensfolgen (z. B. fragwürdige Forschungspraktiken) haben. Darüber hinaus deuten die Ergebnisse darauf hin, dass die negativen Verhaltensfolgen als gaming performance measurement beschrieben werden können (d. h. Erreichen von Leistungszielen durch Verringerung der Leistungsqualität und Fokussierung auf Aufgaben, die gemessen werden) und dass gaming performance measurement als abweichendes Verhalten am Arbeitsplatz eingestuft werden kann (d. h. eine freiwillige Verletzung von Organisationsnormen, die der Universität schadet). Wir schlagen vor, dass gaming performance measurement eine Art von abweichendem Verhalten am Arbeitsplatz ist, das noch nicht in den aktuellen Theorien für abweichendes Verhalten am Arbeitsplatz enthalten ist. Ausgehend von der Literatur über Zielsetzung und abweichendes Verhalten am Arbeitsplatz diskutieren wir verschiedene Erklärungen für gaming performance measurement und die zugrunde liegenden psychologischen Prozesse.

Das zweite Essay stützt sich auf eine Inhaltsanalyse von Stellenausschreibungen für Professuren und die Modellierung von Wachstumskurven, um den Zusammenhang zwischen der Nachfrage nach Führungs- und Managementfähigkeiten und der Leistung von Universitäten zu untersuchen. Universitäten, die in ihren Stellenausschreibungen für Professuren Kriterien in Bezug auf Führung und Management aufgenommen hatten, verzeichneten einen stärkeren Anstieg der Publikationsleistung als Universitäten, die dies nicht taten. Dieses Ergebnis bezieht sich nicht nur auf die Gesamtzahl der Publikationen, sondern auch auf die Anzahl der Publikationen mit internationalen Ko-Autoren und die Anzahl der Publikationen in den Top 10% der Zeitschriften. Das Essay liefert erste Hinweise darauf, dass wissensintensive Organisationen wie Hochschulen besser abschneiden als konkurrierende Organisationen, wenn sie bei der Rekrutierung künftiger Mitarbeiter*innen Wert auf Führungsund Managementkriterien legen. In der Diskussion schlagen wir mehrere mögliche Erklärungen für unsere Ergebnisse vor, wie z. B. die Prozesse der Anziehung von Bewerber*innen und der Selbstselektion, und erörtern verschiedene Wege für zukünftige Forschung.

Im dritten Essay wird untersucht, wie Mitglieder von Berufungskommissionen verschiedene Kriterien wissenschaftlicher Leistung berücksichtigen und abwägen, wenn sie Bewerber*innen für eine Professur bewerten. Mithilfe einer adaptiven choice-based Conjointanalyse identifizieren wir die impliziten Berufungspräferenzen von Wissenschaftler*innen aus verschiedenen Ländern, Fachbereichen und Hochschultypen. Wir stellen fest, dass Wissenschaftler*innen der Forschungsleistung der Bewerber*innen mehr Bedeutung beimessen als ihrer Lehrleistung und dass sie sich mehr auf quantitative als auf qualitative Kriterien konzentrieren. Im Durchschnitt sind die drei wichtigsten Berufungskriterien das Ausmaß, in dem Bewerber*innen in hochrangigen Zeitschriften veröffentlicht haben, die Gesamtzahl der Publikationen und die Summe eingeworbener Drittmittel. Basierend auf einer zweistufigen Segmentierungsanalyse, die unüberwachtes Lernen und überwachtes Lernen umfasst, stellen wir außerdem fest, dass es drei verschiedene Muster von Berufungspräferenzen gibt. Es zeigen sich Zusammenhänge zwischen den Berufungspräferenzen von Wissenschaftler*innen mit verschiedenen Variablen, darunter Land, Fachbereich, organisatorischen Merkmalen (z. B. Art der Hochschuleinrichtung) und individuellen Merkmalen (z. B. eigene Forschungsleistung der Wissenschaftler*innen). Ein Vergleich der impliziten Berufungspräferenzen von Wissenschaftler*innen mit ihren expliziten Berufungspräferenzen zeigte, dass es erhebliche Diskrepanzen gibt. Das Essay leistet nicht nur einen Beitrag zur Forschung über die Berufung von Professor*innen, sondern zeigt auch die Möglichkeiten der adaptiven choice-based Conjointanalyse als neue Methode zur Untersuchung komplexer Entscheidungen wie Personalauswahlentscheidungen auf.

Zusammengenommen werfen die drei einzelnen Essays in dieser Dissertation ein neues Licht auf die Themen Leistungsmessung, Rekrutierung und Personalauswahl an Hochschulen. Sie leisten nicht nur einen Beitrag zur bestehenden Literatur über Praktiken des Personalmanagements an Hochschulen, sondern liefern auch wertvolle praktische Implikationen und schlagen vielversprechende Wege für die künftige Forschung vor.

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List of Abbreviations

- AIC Akaike information criterion
- ARI adjusted Rand index
- $\mathrm{C}-\mathrm{cluster}$
- CCEA convergent cluster ensemble analysis
- cf.-confer
- CH index Caliński-Harabasz-Index
- CI confidence interval
- cov covariance
- CV curriculum vitae
- df degrees of freedom
- DHV Deutscher Hochschulverband
- doi digital object identifier
- e.g. exempli gratia
- ed. edition
- Ed.-editor
- Eds. editors
- et al. et alii
- EU European Union

FOS - field of science and technology

- H-Kruskall-Wallis test statistic
- HB-Hierarchical Bayes
- HR human resources
- $i.e.-id \; est$
- $ICC-intra-class\ correlation\ coefficient$
- M-mean
- Max maximum
- Min-minimum
- N number of participants or observations in sample
- p p-value
- p. page
- Ph.D. Doctor of Philosophy
- pp. pages
- r correlation coefficient
- R&D research and development
- RMSD root-mean-square deviation
- SD standard deviation
- SE-standard error
- SJR SCImago Journal Rank indicator

- SNIP Source Normalized Impact per Paper indicator
- U.K. United Kingdom
- U.S. United States of America
- z z-value (standard score)
- ZBW Leibniz-Informationszentrum Wirtschaft
- α alpha, Cronbach's alpha / Krippendorff's Alpha
- β beta, regression coefficient
- κ kappa, coding frequency (number of codings)
- X^2 Chi-Square statistic

1 Introduction¹

1.1 Motivation and Research Questions

Over the last decades, higher education institutions worldwide have faced increasing demands to become more similar to for-profit organizations (e.g., Musselin & Teixeira, 2014). This so-called trend of 'new managerialism' (e.g., Deem & Brehony, 2005; Deem, Hillyard, & Reed, 2007) or 'new public management' (Hood, 1991; see also, e.g., Funck & Karlsson, 2020) has brought about changes in the human resource management practices of higher education institutions (e.g., Gordon & Whitchurch, 2007; Waring, 2013). A growing body of research recognizes that human resource management practices are key contributors to high performance and innovativeness of knowledge-intensive organizations such as higher education institutions (e.g., Archer, 2005; Chuang, Jackson, & Jiang, 2016; Fu, Flood, Bosak, Rousseau, Morris, & O'Regan, 2017; Haesli & Boxall, 2005; Horwitz, Heng, & Quazi, 2003; Shahzad, Hong, Jiang, & Niaz, 2022; Thite, 2004; van den Brink, Fruytier, & Thunnissen, 2013). Nevertheless, several research questions on human resource management practices in higher education institutions remain, including performance measurement, recruiting, and personnel selection.

Much uncertainty still exists about the effects of establishing performance measurement practices in higher education institutions. Whereas the principles of goal setting theory propose that performance measurement leads to an increase in performance (Latham & Locke, 2007; Locke & Latham, 2002), several researchers warn that the current performance measurement practices in academia also lead to unethical behavior, including scientific misconduct (e.g.,

¹ This section is partially based on Graf, Wendler, Stumpf-Wollersheim, and Welpe (2019), Graf, Stumpf-Wollersheim, and Welpe (2022), and Graf, Rimbeck, Stumpf-Wollersheim, and Welpe (under review); see Appendix for full references

Gross, 2016; Ordónez, Schweitzer, Galinsky, & Bazerman, 2009; Osterloh, 2010; Schubert, 2009; van Thiel & Leeuw, 2002). Scientific misconduct by researchers can cause severe damage to universities and can impact the image of the entire scientific community (Gross, 2016; Honig, Lampel, Siegel, & Drnevich, 2017; Stroebe, Postmes, & Spears, 2012). Even if researchers do not engage in severe scientific misconduct (e.g., fabrication of data), current performance measurement practices may provoke them to engage in questionable research methods (e.g., harking = hypothesizing after the results are known; Butler, Delaney, & Spoelstra, 2017). Against this backdrop, it is crucial to understand the positive and negative consequences of setting performance goals and measuring goal attainment on scholars' performance and work behavior. Thus, the first essay of this thesis aims to answer the following research question:

(1) What are the positive and negative behavioral consequences of current performance measurement practices in academia?

Knowledge-intensive organizations such as higher education institutions are especially dependent on their employees to outperform their competitors (e.g., Haesli & Boxall, 2005; Horwitz et al., 2003; Kelloway & Barling, 2000; Thite, 2004). Nevertheless, recruiting and personnel selection practices of higher education institutions have not been closely examined in past research. Horwitz et al. (2003) contend that the strategic decision of which employee competencies are critical to differentiate from competitors might impact the performance of knowledge-intensive organizations. Prior studies indicate that the performance and innovativeness of higher education institutions are dependent on employees' leadership and management competencies (e.g., Braun, Peus, Weisweiler, & Frey, 2013; Edgar & Geare, 2013). Similarly, Dreyfus (2008) showed that it is not only technical expertise but also

leadership and management competencies that differentiate high-performance knowledge workers from average knowledge workers. What is not yet clear is whether higher education institutions and other knowledge-intensive organizations can increase their performance when they recruit employees with leadership and management competencies. The second essay of this thesis seeks to examine the relationship between the performance of universities and their demand for leadership and management skills by answering the following research question:

(2) Do universities that value leadership and management skills in their future professors outperform universities that do not?

Another human resource management practice that is of utmost importance to higher education institutions is personnel selection. The most important personnel selection decision of higher education institutions is the appointment of new professors (e.g., Lepori, Seeber, & Bonaccorsi, 2015). Consequently, many researchers in different scientific fields have tried to answer the question of what influences appointment decisions. Due to the multidimensionality of scholarly performance (e.g., Aguinis, Shapiro, Antonacopoulou, & Cummings, 2014) and the multitude of tasks that professors perform (e.g., Macfarlane, 2011), there are many different criteria that appointment committees can use to evaluate candidates for a professorship. Which criteria are most important to appointment committee members determines how they evaluate and select candidates for a professorship. Ultimately, their preferences for certain criteria influence the outcome of appointment decisions. Thus, there is a need to better understand the implicit preferences of scholars who serve as members of appointment committees.

Past research has used a variety of methodological approaches to study professorial appointments. These methodological approaches include document analyses (e.g., Finch, Deephouse, O'Reilly, Massie, & Hillenbrand, 2016; Subbaye, 2018), career trajectories (e.g.,

Cruz-Castro & Sanz-Menendez, 2010; van Dijk, Manor, & Carey, 2014), surveys and interviews (e.g., Abbott, Cyranoski, Jones, Maher, Schiermeier, & Van Noorden, 2010), and experimental designs (e.g., Williams & Ceci, 2015). The findings of past research on professorial appointments provide no clear answer to the question of what influences appointment decisions. For example, whereas various studies conclude that publication performance is the most important criterion for appointment decisions (e.g., Lutter & Schröder, 2016), other studies find that different criteria such as the fit between a candidate and the hiring department have the largest influence (e.g., Sheehan, McDevitt, & Ross, 1998). Previous studies suffer from several methodological limitations. In sum, it is not yet clear how individual scholars, who serve as appointment committee members, consider and weigh up a large number of different criteria of scholarly performance. Moreover, little is known about the extent to which differences in scholars' appointment preferences are related to factors such as country, scientific field, organizational characteristics (e.g., type of higher education institution), and individual characteristics (e.g., scholars' own performance in research, teaching, and acquiring grants). Therefore, this thesis aims to answer the following research question in the third essay:

(3) What are scholars' implicit preferences for criteria in professorial appointments and what factors contribute to differences in these appointment preferences?

1.2 Theoretical Background

The three essays of this thesis draw on different streams of literature. The following sections give an overview of the theoretical background of each essay. After introducing the concepts of scientific misconduct and gaming performance measurement (Essay 1), I will review previous studies on leadership and management in knowledge-intensive organizations and on the role of job advertisements in recruiting research (Essay 2). Subsequently, I will

summarize the findings of prior research on professorial appointments and differences in appointment preferences (Essay 3).

1.2.1 Scientific misconduct and gaming performance measurement

The National Science Foundation² defines scientific misconduct as (1) falsification, (2) fabrication of data or results, and (3) plagiarism (see also Fanelli, 2009). Apart from such fraudulent behavior, scientists can also engage in unethical behavior that is less severe. This type of behavior is often referred to as questionable research practices and includes, for example, processing data as much as possible in order to achieve significant results or building hypotheses after having conducted the research (Butler et al., 2017). Fanelli (2009) reports that 33.7% of scientists admit to questionable research practices and that 1.97% of scientists have committed scientific misconduct. While some prior studies have focused on individual differences (e.g., individual improperty; see Sovacool, 2008) as explanations of scientific misconduct and questionable research practices, other authors propose that performance measurement practices are the root cause of scientists' unethical behavior (e.g., Martinson, Anderson, & De Vries, 2005). They refer to scientists' adaptation to current performance measurement practices in academia as 'playing the game' or 'gaming the system' (e.g., Butler et al., 2017; Osterloh & Frey, 2015). According to Jaworski (1988), gaming "refers to situations in which employees behave in ways that look good in terms of the control system measures but are dysfunctional for the firm" (p. 34; see also Saini, Krush, & Johnson, 2008). Gaming performance measurement has been studied not only in academia (e.g., Butler & Spoelstra, 2012; Osterloh & Frey, 2015) but also in other work contexts, for example, public management (De Bruijn, 2002; Smith, 1995; van Thiel & Leeuw, 2002) and budgeting decisions (Goebel & Weißenberger, 2016; Jensen, 2003).

² Source: <u>https://oig.nsf.gov/sites/default/files/document/2021-08/45-CFR-689.pdf</u>

1.2.2 Leadership and management in knowledge-intensive organizations and research on job advertisements

Prior studies on knowledge-intensive organizations have found a relationship between leadership and management practices and positive outcomes such as job satisfaction and organizational climate (Berson & Linton, 2005), higher employee motivation and performance (Edgar, Gear, & O'Kane, 2015), individual and team creativity (Chen & Hou, 2016; Shin & Zhou, 2007), and project group performance (Keller, 1992, 2006; Pirola-Merlo, Härtel, Mann, & Hirst, 2002). Furthermore, several studies show that the performance of research groups in higher education institutions is impacted by the leadership behavior of professors (Braun et al., 2013; Brown & Moshavi, 2002; Bryman, 2007; Evans, Homer, & Rayner, 2013; Olsson, Hemlin, & Pousette, 2012). Despite the importance of leadership and management for higher education institutions and other knowledge-intensive organizations, recruiting and hiring of knowledge workers such as professors is based mostly on technical skills (Dreyfus, 2008; Edgar et al., 2015; Elkins & Keller, 2003). Taken together, past research indicates that leadership and management practices are crucial to knowledge-intensive organizations but that knowledge workers with leadership and management competencies are scarce. Consequently, knowledge-intensive organizations that attach importance to leadership and management skills in the recruiting of future knowledge workers may gain competitive advantage over knowledge-intensive organizations that focus on technical skills alone.

Job advertisements allow researchers to identify which job requirements are important to organizations for recruiting future employees (Bennett, 2002). They reflect those employee competencies that organizations value most, considering that job advertisements describe vacant positions in a short and highly condensed manner (Gallivan, Truex III, & Kvasny, 2004). Past research on applicant attraction and job advertisements shows that they play an important role in successfully attracting qualified applicants (e.g., Breaugh & Starke, 2000; Walker & Hinojosa, 2014). By influencing the process of self-selection—attracting desired candidates (e.g., Avery, 2003; Walker, Feild, Giles, Bernerth, & Jones-Farmer, 2007) and deterring unqualified ones (Mason & Belt, 1986)—a job advertisement impacts the quality of the applicant pool. In the case of knowledge-intensive organizations, job advertisements that include leadership and management skills might be beneficial for attracting knowledge workers that possess not only technical skills but also leadership and management competencies. In turn, these newly recruited knowledge workers may have a positive impact on the performance of their organization.

1.2.3 Influences on professorial appointments and differences in appointment preferences

The question of what influences appointment decisions has been studied in a multitude of different ways. Previous methodological approaches include document analyses, career trajectories, surveys and interviews, and experimental designs. Analyses of documents such as job advertisements (e.g., Finch et al., 2016; Gould, Fowler, & del Carmen, 2011; Klawitter, 2017; Meizlish & Kaplan, 2008; Pikciunas, Cooper, Hanrahan, & Gavin, 2016) and policy documents (e.g., Crothall, Callan, & Härtel, 1997; Parker, 2008; Subbaye, 2018) reveal what universities officially report to be important in their appointment decisions. Although these studies shed some light on the importance of different aspects of scholarly performance, such as research versus teaching, the validity of document analyses is limited. In particular, appointment committees may actually use criteria other than those written down in official university documents (e.g., van den Brink, Benschop, & Jansen, 2010).

Many researchers analyzed career trajectories of scholars (i.e., datasets on appointment decisions, scholarly performance, and individual attributes of scholars) to infer the criteria that appointment committees must have had used in the selection processes (e.g., Cruz-Castro &

Sanz-Menéndez, 2010; Lutter & Schröder, 2016; Pezzoni, Sterzi, & Lissoni, 2012; van Dijk et al., 2014; Youtie, Rogers, Heinze, Shapira, & Tang, 2013). Career trajectory studies have a strong focus on publication performance as the most important criterion for appointment decisions. However, this methodological approach has several disadvantages, including survivor bias (e.g., Jungbauer-Gans & Gross, 2013; Lutter & Schröder, 2016), the inability to draw causal inferences (Ceci, 2018), and a focus on information that is publicly available while neglecting many other potentially relevant appointment criteria like teaching performance or acquired funding.

Surveys and interviews, for example, with professors (e.g., Macfarlane, 2011), chairs of search committees (e.g., Iyer & Clark, 1998; Sheehan et al., 1998), or department heads (e.g., Abbott et al., 2010), suggest that appointment committees are using not only publication performance but other criteria as well to evaluate candidates for a professorship. In several studies, criteria such as teaching performance or candidates' fit to the hiring department were even more important than publication performance (e.g., Fuerstman & Lavertu, 2005; Landrum & Clump, 2004; Sheehan et al., 1998). As surveys and interviews are self-report measures, a major drawback of these studies is the possibility of different biases such as social desirability (e.g., Arnold & Feldman, 1981) and lack of introspection (e.g., Nisbett & Wilson, 1977; Uhlmann, Leavitt, Menges, Koopman, Howe, & Johnson, 2012). Moreover, participants of surveys tend to rate all appointment criteria as similarly important because they are asked to consider each criterion independently instead of evaluating candidates as a whole like in real appointment decisions (e.g., Orme, 2014).

So far, prior studies on appointment decisions rarely employed experimental designs (e.g., Kasten, 1984; Steinpreis, Anders, & Ritzke, 1999; Williams & Ceci, 2015). Most of these studies included a very limited number of appointment criteria because they used narrative summaries or full CVs to describe hypothetical candidates for a professorship. Thus, these

experimental designs do not allow to analyze how members of appointment committees weigh up many different criteria. Fiedler and Welpe (2008) are the first to identify appointment preferences of scholars by means of adaptive conjoint analysis. Contrary to narrative summaries and full CVs, conjoint analysis is a within-subjects design that allows researchers to include more appointment criteria because participants evaluate profiles consisting of succinct descriptions of candidate characteristics. Nevertheless, the adaptive conjoint analysis by Fiedler and Welpe (2008) has also several drawbacks. In particular, the survey process of adaptive conjoint analysis does not mimic the process of personnel selection decisions such as appointment decisions.

Previous research on professorial appointments showed that appointment preferences are not homogeneous but that there are differences depending on factors such as country (e.g., Fiedler & Welpe, 2008; Pezzoni et al., 2012), scientific field (e.g., Sanz-Menéndez, Cruz-Castro, & Alva, 2013; Williams & Ceci, 2015), organizational characteristics (e.g., type of higher education institution; e.g., Iyer & Clark, 1998; Landrum & Clump, 2004), and individual characteristics (e.g., scholars' own performance; Fiedler & Welpe, 2008). Instead of considering these factors independently, as in previous research, Essay 3 of this thesis aims to identify groups of scholars with similar appointment preferences (i.e., distinct patterns of appointment preferences) and to predict scholars' patterns of implicit appointment preferences based on country, scientific field, organizational characteristics, and individual characteristics.

1.3 Research Methods and Data Analyses

This thesis uses both quantitative and qualitative approaches to answer the research questions stated above. In Essay 1, we conducted semi-structured interviews with five different groups of stakeholders of the German higher education system, including professors, junior scientists, policy makers, university managers, and students. The participants answered questions regarding the current performance measurement practices in academia and the influence of performance measurement on scientists' behavior. We employed a mixed-method approach for the interview guideline (i.e., open and closed questions) as well as for the data analysis (i.e., an in-depth qualitative analysis with a three-step coding procedure followed by descriptive analyses of coding frequencies). After identifying negative and positive consequences of the current performance measurement practices (step 1), we re-analyzed the interviewees' answers regarding the question of whether scientists engage in behavior that can be described as gaming performance measurement: (1) focusing on attaining specific performance goals while actually producing lower-quality work and (2) putting more effort into tasks that are defined as performance goals at the expense of other tasks that are not defined as performance goals but that nevertheless are important for the university's success (step 2). Based on the analysis of step 2, we observed that scientists adapt their behavior in such a way that it may cause a serious threat to the university and its goals, that is, a deterioration of a university's performance with regard to its main tasks: research and teaching. Consequently, we re-analyzed the codings of the previous step and identified examples of gaming performance measurement that also fulfilled the definition of organizational workplace deviance (Robinson & Bennett, 1995): (1) voluntary behavior and (2) a violation of significant organizational norms that threatens the well-being of the organization (step 3).

In Essay 2, we used a longitudinal, convergent mixed-method design (i.e., qualitative and quantitative data were merged; Creswell & Plano Clark, 2011) to explore the relationship between the use of leadership criteria in job advertisements of universities and changes in the publication performance of universities. First, we conducted a qualitative content analysis of job advertisements for vacant professorships in business and economics at German universities, published in 2008, 2010, 2012, and 2014 by the German Association of University Professors and Lecturers (Deutscher Hochschulverband, DHV). We identified universities that had

included leadership criteria in their job advertisements, that is, they referred to (1) required or desired experiences related to leadership or management or (2) future tasks related to leadership or management, including management positions. Second, we obtained data on publication performance via SciVal, a research information system based on the Scopus database. To operationalize the organizational performance of universities, we used their publication performance in business and economics from 2006 to 2014. Lastly, we employed growth curve modeling (Bryk & Raudenbush, 1987; Rogosa & Willett, 1985) to explore whether universities that used leadership criteria in job advertisements experienced a change in their publication performance over time.

In Essay 3, we used adaptive choice-based conjoint analysis (Johnson & Orme, 2007; SawtoothSoftware, 2014) to identify scholars' implicit appointment preferences. Conjoint analysis is a within-subjects experimental design that originates from the study of consumer preferences (Green & Rao, 1971). "By systematically varying the features of the product and observing how respondents react to the resulting product profiles, one can statistically deduce (...) the scores (part-worths) for the separate features respondents may have been subconsciously using to evaluate products" (Orme, 2014, p. 2-3). Adaptive choice-based conjoint analysis is a comparatively novel type of conjoint analysis that is suitable for measuring the implicit preferences of decision-makers with regard to complex decisions such as personnel selection. When faced with a complex decision (i.e., many alternatives to choose from and many different selection criteria; Dijksterhuis, Bos, Nordgren, & van Baaren, 2006), decision-makers follow a two-stage process: (1) screening of alternatives and (2) final decision. Moreover, they use simplifying heuristics such as must-have criteria ("cut-offs"), also known as non-compensatory decision-making. Adaptive choice-based conjoint analysis mimics this type of decision-making and generates individually customized candidate profiles for each participant, based on previous answers, so that participants must make increasingly difficult trade-off decisions. As a result, adaptive choice-based conjoint analysis is more realistic for participants and yields a more efficient questionnaire design (i.e., shorter survey and smaller sample size) and more valid results. We recruited junior and senior scholars from different scientific fields, countries, and types of higher education institutions and asked them to take part in a hypothetical appointment procedure via an online survey. They were asked to imagine that, at the department where they are currently employed, the position of a full professor is vacant, and that they serve as a member on the appointment committee. Following the adaptive choice-based conjoint analysis, we measured participants' explicit appointment preferences in order to determine if there are discrepancies between participants' implicit and explicit preferences. We used Lighthouse Studio by Sawtooth Software, Inc., to design the conjoint questionnaire and to estimate the part-worth utilities of the attribute levels via hierarchical Bayes (see, e.g., Kruschke, Aguinis, & Joo, 2012; Lenk, Desarbo, Green, & Young, 1996). Based on the part-worth utilities from the hierarchical Bayes estimation (i.e., the implicit appointment preferences), we conducted a segmentation analysis. The goal of the segmentation analysis was to identify distinct patterns of appointment preferences, that is, clusters of scholars with similar appointment preferences. In addition, it allowed us to explore how differences among scholars (e.g., country or type of institution) are related to differences in their appointment preferences. We performed a two-level segmentation process that combines unsupervised and supervised machine learning (Deal, 2014). More specifically, we conducted a convergent cluster ensemble analysis (Orme and Johnson, 2008), which is based on Strehl and Ghosh's (2002) cluster ensemble analysis approach, and build random forest models (Breiman, 2001) for evaluating the cluster solutions generated by the convergent cluster ensemble analysis.

1.4 Main Findings and Contributions

The remainder of this introduction provides an overview of the main findings and contributions of the three essays. In Essay 1, qualitative interviews with different stakeholders of the higher education system identified how current performance measurement practices in academia lead scientists to adapt their behavior. Interviewees reported many more negative than positive behavioral consequences of the current performance measurement practices. Negative behavioral consequences include a decrease in research quality, a decrease in teaching quality, and prioritizing research at the expense of teaching and grant acquisition at the expense of research. Positive behavioral consequences include higher productivity and motivation and an increase in research and teaching quality. Reanalyzing the interview data revealed that scientists engage in gaming performance measurement. Moreover, we find that gaming performance measurement fulfills the definition of deviant workplace behavior (cf. Robinson & Bennett, 1995). The findings of Essay 1 contribute to the literature on gaming performance measurement and to the literature on deviant workplace behavior. First, we discuss how our findings relate to previous research on different psychological processes that may underly gaming performance measurement, including the interaction of situational variables and individual differences (e.g., Colbert, Mount, Harter, Witt, & Barrick, 2004; Martinko, Grundlach, & Douglas, 2002), organizational goals (e.g., Pierce & Aguinis, 2015; Umphress & Bingham, 2011), perception of disequilibria (e.g., Martinko et al., 2002), moral disengagement (e.g., Barsky, 2008; Niven & Healy, 2016), and rationalization (e.g., Barsky, 2008; Mazar, Amir, & Ariely, 2008). Second, we review several typologies of deviant workplace behavior (cf. Berry, Ones, & Sackett, 2007; Griffin and Lopez, 2005; Gruys and Sackett, 2003; Klotz and Buckley, 2013; Marcus, Schuler, Quell, & Hümpfner, 2002; Robinson and Bennett, 1995; Spector, Fox, Penney, Bruursema, Goh, & Kessler, 2006; Vardi and

Wiener, 1996; Warren, 2003) and show that they do not take into account gaming performance measurement.

In Essay 2, we explored how the performance of universities is related to their demand for leadership and management skills of professors, using a content analysis of job advertisements and growth curve modeling. Universities experienced a greater increase in their publication performance over time if they had included leadership and management criteria in their job advertisements for professorships. Essay 2 contributes to research on knowledgeintensive organizations, such as universities, regarding leadership and management as well as human resource management practices. The findings are consistent with previous calls that knowledge-intensive organizations are especially dependent on recruiting knowledge workers with leadership and management skills (e.g., Dreyfus, 2008; Edgar et al., 2015; Elkins & Keller, 2003) and that human resource management practices are crucial for knowledgeintensive organizations (e.g., Chuang et al., 2016; Collins & Smith, 2006).

In Essay 3, we answer the question of what influences appointment decisions by studying scholars' implicit appointment preferences. Using adaptive choice-based conjoint analysis (Johnson & Orme, 2007), we simulated a hypothetical appointment procedure and found that, on average, scholars attach more importance to research performance than teaching performance when evaluating candidates for a full professorship. Moreover, scholars rather focus on quantitative criteria than on qualitative criteria. The three most important appointment criteria are the extent to which a candidate has published in top-tier journals, the total number of publications, and the sum of money acquired through research grants. However, a segmentation analysis showed that scholars' appointment preferences are not homogenous. Instead, we found that there are three distinct patterns of appointment preferences. Consistent with previous research on professorial appointments (e.g., Fiedler & Welpe, 2008; Iyer & Clark, 1998; Landrum & Clump, 2004; Pezzoni et al., 2012), the study examined factors that

are related to differences in appointment preferences. More specifically, we found that country is the best predictor for scholars' patterns of appointment preferences. Whereas scholars from Germany are more likely to value the acquisition of grants, scholars from the U.S. attach most importance to teaching evaluations. Appointment preferences are also related to scholars' scientific field as well as organizational characteristics (e.g., type of higher education institution) and individual differences (e.g., scholars' own research performance). The findings of Essay 3 add to the growing body of research on professorial appointments by identifying scholars' implicit preferences for performance criteria. Furthermore, they provide a more extensive overview of how differences among scholars are related to differences in scholars' appointment preferences. Employing adaptive choice-based conjoint analysis provides new insights into the decision-making process of appointment decisions and highlights its great potential for future research on complex decision-making in recruitment and selection such as personnel selection and job search (Janger & Nowotny, 2016; Ronda, Abril, & Valor, 2021).

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2 Wanting More, Getting Less: Gaming Performance Measurement as a Form of Deviant Workplace Behavior

Abstract

Investigating the causes of unethical behaviors in academia, such as scientific misconduct, has become a highly important research subject. The current performance measurement practices (e.g., equating research performance with the number of publications in top-tier journals) are frequently referred to as being responsible for scientists' unethical behaviors. We conducted qualitative semi-structured interviews with different stakeholders of the higher education system (e.g., professors and policy makers; N = 43) to analyze the influence of performance measurement on scientists' behavior. We followed a three-step coding procedure and found (1) that the participants described a variety of positive behavioral consequences (e.g., higher productivity) but mainly negative behavioral consequences (e.g., questionable publishing practices) of current performance measurement practices in academia; (2) that scientists' behavior can be described as gaming performance measurement (i.e., achieving performance goals by reducing performance quality and focusing on those tasks that are measured); and (3) that gaming performance measurement shares the same characteristics as deviant workplace behavior (i.e., a voluntary violation of organizational norms that harms the university). We discuss that gaming performance measurement has not been considered as a type of deviant workplace behavior in the previous literature. Furthermore, we draw from research on deviant workplace behavior and goal setting to discuss psychological processes that may underlie gaming performance measurement. Our results indicate the importance of connecting literature on deviant workplace behavior and goal setting to advance our understanding of gaming performance measurement.

Keywords: Academia, deviant workplace behavior, counterproductive work behavior, gaming performance measurement, higher education, qualitative interviews, performance measurement, production deviance, scientific misconduct

Note:

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3 Recruiting Knowledge Workers to Lead the Field: Leadership Skills in Job Advertisements of Universities

Abstract

This study explores the relationship between the demand for leadership and management skills in job advertisements and the performance of knowledge-intensive organizations. Analyzing universities' job advertisements for 819 vacant professorships, growth curve modeling showed that universities that had included appointment criteria related to leadership and management in their job advertisements experienced a greater increase in publication performance than universities that did not. We offer several possible explanations for this finding, such as the processes of applicant attraction and self-selection. In addition, we discuss limitations of the study and propose avenues for further research regarding the relationship between leadership and management criteria in job advertisements and the organizational performance of knowledge-intensive organizations.

Keywords: Knowledge-intensive organization, leadership and management, job advertisement, organizational performance, growth curve modeling

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4 Academic Success is in the Eye of the Beholder: Understanding Scholars' Implicit Appointment Preferences Through Adaptive Choice-Based Conjoint Analysis

Abstract

Because scholarly performance is multidimensional, many different criteria may influence appointment decisions. Previous studies on appointment preferences do not reveal how appointment committee members consider and weigh up different criteria when they evaluate candidates. To identify scholars' implicit appointment preference, we used adaptive choice-based conjoint analysis, which is able to capture the non-compensatory process of complex decisions like personnel selection. Junior and senior scholars (N = 681) from different scientific fields, countries, and types of higher education institutions took part in a hypothetical appointment procedure. A two-step segmentation analysis based on unsupervised and supervised learning revealed three distinct patterns of appointment preferences. The most important variable for predicting to which group a scholar belongs is the country in which he or she is currently living. Other important predictors were, for example, scholars' self-reported research performance and whether they work at a doctorate-granting or not-doctorate-granting higher education institution. A comparison of scholars' implicit and explicit preferences yielded considerable discrepancies. The findings contribute to literature on professorial appointments and provide insights for scholars and higher education institutions.

Keywords: Appointment preferences, higher education, adaptive choice-based conjoint analysis, implicit preferences, decision-making, personnel selection

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5 Discussion and Conclusion³

Following the introduction of reforms during the last decades (e.g., Deem & Brehony, 2005; Funck & Karlsson, 2020; Hood, 1991; Musselin & Teixeira, 2014), higher education institutions were encouraged to attach higher importance to human resource management practices (e.g., Gordon & Whitchurch, 2007; Waring, 2013). As a consequence, human resource management practices have become a key contributor to the performance of higher education institutions (e.g., Archer, 2005; Shahzad, Hong, Jiang, & Niaz, 2022; van den Brink, Fruytier, & Thunnissen, 2013). Focusing on performance measurement, recruiting, and personnel selection across a series of three essays, this thesis expands our current knowledge on human resource management in higher education institutions.

5.1 Summary of Findings and Theoretical Contributions

Making use of qualitative interviews with different stakeholders of the higher education system, Essay 1 identifies the positive and negative consequences of current performance measurement practices in academia. Regarding positive behavioral consequences, interviewees reported higher productivity and motivation as well as an increase in research and teaching quality. In sum, however, they reported many more negative behavioral consequences. More specifically, they reported that the current performance measurement practices lead to a decrease in research quality (due to questionable publishing practices, a selective choice of research topics, and questionable research methods), a decrease in teaching quality, and prioritizing research at the expense of teaching and grant acquisition at the expense of research. A second coding step revealed that scientists' behavioral reactions can be described as 'gaming performance measurement'. We define gaming performance measurement as (1) focusing on

³ This section is partially based on Graf, Wendler, Stumpf-Wollersheim, and Welpe (2019), Graf, Stumpf-Wollersheim, and Welpe (2022), and Graf, Rimbeck, Stumpf-Wollersheim, and Welpe (under review); see Appendix for full references.

attaining specific performance goals while actually producing lower-quality work and (2) putting more effort into tasks that are defined as performance goals at the expense of other tasks that are not defined as performance goals but that nevertheless are important for the university's success. In a third coding step, we re-analyzed the data again and found that gaming performance measurement fulfills the definition of deviant workplace behavior (cf. Robinson & Bennett, 1995). Gaming performance measurement is a voluntary behavior (i.e., scientists have a choice to strategically adapt their behavior) and a violation of organizational norms that causes harm to universities (i.e., scientists who engage in gaming performance measurement threaten the well-being of their universities). These findings provide insights for the literature on deviant workplace behavior and for the literature on gaming performance measurement. First, reviewing common typologies of workplace deviance (cf. Berry, Ones, & Sackett, 2007; Griffin & Lopez, 2005; Gruys & Sackett, 2003; Klotz & Buckley, 2013; Marcus, Schuler, Quell, & Hümpfner, 2002; Robinson & Bennett, 1995; Spector, Fox, Penney, Bruursema, Goh, & Kessler, 2006; Vardi & Wiener, 1996; Warren, 2003), we demonstrate that gaming performance measurement-although it fulfills the definition of deviant workplace behavior-has not yet been included in these frameworks. For example, gaming performance measurement appears to fit into the category 'production deviance' (cf. Bennett & Robinson, 2000; Robinson & Bennett, 1995; Spector et al., 2006), which is defined as "behaviors that directly interfere with work being performed in the organization" (Everton, Jolton, & Mastrangelo, 2007, p. 119). The sample behaviors and items of subscales that measure production deviance, however, show that they do not in fact refer to gaming performance measurement (e.g., "tardiness, sloppy or slow workmanship, or the use of alcohol or drugs while at work", Hollinger & Clark, 1982, p. 98). Second, we discuss how explanations from the literature on deviant workplace behavior and from the literature on goal setting and unethical behavior can improve our understanding of the underlying psychological processes

of gaming performance measurement. In particular, we touch upon the interaction of situational variables and individual differences (e.g., Colbert, Mount, Harter, Witt, & Barrick, 2004; Martinko, Grundlach, & Douglas, 2002), organizational goals (e.g., Pierce & Aguinis, 2015; Umphress & Bingham, 2011), perception of disequilibria (e.g., Martinko et al., 2002), moral disengagement (e.g., Barsky, 2008; Niven & Healy, 2016), and rationalization (e.g., Barsky, 2008; Mazar, Amir, & Ariely, 2008). For example, similar to deviant workplace behavior, gaming performance measurement can be seen as the result of an interaction of situational variables (i.e., performance measurement practices) and individual differences (e.g., performance goal orientation; Louw, Dunlop, Yeo, & Griffin, 2016). Research that takes on this perspective may provide answers to the question of what characteristics of performance measurement practices (i.e., situational variables) are likely to encourage gaming performance measurement and what individual differences cause employees to respond to performance measurement practices with gaming performance measurement.

In Essay 2, we used a content analysis of job advertisements and growth curve modeling to explore the relationship between the performance of universities and their demand for leadership and management skills of professors. Results show that, if universities had included criteria related to leadership and management in their job advertisements for professorships, they experienced a greater increase in their publication performance over time than other universities. In addition to the total number of publications, we found this relationship also for the number of publications with international co-authors and for the number of publications in the top 10% of journals (according to the Source Normalized Impact per Paper indicator, SNIP; Moed, 2010). Our data cannot reveal the process that underlies the relationship between the publication performance of universities and their use of leadership criteria in job advertisements. Nevertheless, there are several possible explanations for our findings. First, in the late 1990s and early 2000s, higher education reforms were introduced in Germany to

increase competition and differentiation in the higher education system (Altbach, 1991; Welsh, 2004). As a consequence, human resource management practices became more important to German universities (e.g., Huisman, de Weert, & Bartelse, 2002; Musselin, 2005), encouraging some universities to focus on fostering the leadership and management competencies of their professors. Although these universities might indeed have put more emphasis on recruiting professors with leadership and management skills, the use of such criteria in job advertisements could also reflect more general change processes in universities, which ultimately impacted their publication performance (cf. Jaskiene, 2015). Second, previous studies on the process of self-selection (e.g., Gatewood, Gowan, & Lautenschlager, 1993; Mason & Belt, 1986; Walker & Hinojosa, 2014) suggest that leadership and management criteria in job advertisements might influence the pool of candidates for professorial appointments. On the one hand, such job advertisements could attract candidates with high leadership and management skills and deter candidates without these competencies (Mason & Belt, 1986). Thus, universities are more likely to appoint professors who are competent in leading and managing research teams, which results in a higher publication output (Braun, Peus, Weisweiler, & Frey, 2013). On the other hand, more experienced candidates, who already hold a professorship at another university, might be more likely to apply to job advertisements that mention leadership and management skills. Compared to junior academics, more experienced professors usually have a higher publication performance, which positively impacts the publication performance of their new university (Fiedler, Welpe, Lindlbauer, & Sattler, 2008; Goodall, 2009). The findings of Essay 2-although exploratory in nature-add to the rapidly expanding field of research on knowledge-intensive organizations. Our findings suggest that universities that value leadership and management skills in their future professors outperform universities that do not, highlighting the importance of leadership and management for knowledge-intensive organizations. In particular, we confirm previous notions that recruiting knowledge workers

with leadership and management skills is of utmost importance to knowledge-intensive organizations (e.g., Dreyfus, 2008; Edgar, Gear, & O'Kane, 2015; Elkins & Keller, 2003).

Essay 3 examines current appointment preferences in higher education by analyzing scholars' implicit preferences in the evaluation of candidates for a full professorship. To simulate a hypothetical appointment procedure, we used adaptive choice-based conjoint analysis (Johnson & Orme, 2007). The results show that, on average, the three most important appointment criteria are the extent to which a candidate has published in top-tier journals, the total number of publications, and the sum of money acquired through research grants. Overall, scholars focus more on quantitative criteria than on qualitative criteria to evaluate the scholarly performance of candidates and they attach more importance to research performance than teaching performance. Employing a two-level segmentation analysis consisting of supervised and unsupervised learning (Deal, 2014), we identified three distinct patterns of appointment preferences, that is, groups of scholars with similar preferences. The first group of scholars has a strong preference for candidates with a high publication performance. For the second group of scholars, the sum of money acquired through research grants is the most important appointment criterion. And for the third group of scholars, it is most important that candidates have positive teaching evaluations. Thus, our findings support previous studies on professorial appointments (e.g., Fiedler & Welpe, 2008; Iver & Clark, 1998; Landrum & Clump, 2004; Pezzoni, Sterzi, & Lissoni, 2012), which show that appointment preferences are not homogenous. More specifically, we found differences in appointment preferences depending on country, scientific field, organizational characteristics (e.g., type of higher education institution), and individual differences (e.g., scholars' own research performance). Of these factors, the country in which scholars currently live, is the best predictor for their pattern of appointment preferences. Our findings make several important contributions to the extant literature on professorial appointments by analyzing scholars' implicit preferences for

performance criteria and by deepening our understanding of differences in appointment preferences. First, our study offers a more extensive overview of what influences professorial appointments because we consider a larger number of appointment criteria than prior studies. In addition, adaptive choice-based conjoint analysis mimics the process of complex decisions like professorial appointments, which allows researchers to measure scholars' implicit preferences for appointment criteria in a more realistic and valid way. We propose that adaptive choice-based conjoint analysis provides a promising new methodological approach to study recruiters' implicit preferences for selection criteria, not only in the context of professorial appointments but also with regard to personnel selection decisions in general. Second, by identifying distinct patterns of appointment preferences we shed new light on the question of whether there are systematic differences in scholars' appointment preferences. We broaden our understanding of differences in appointment preferences by considering various predictors of scholars' appointment preferences, including country, scientific field, as well as organizational and individual characteristics.

5.2 Implications for Practice

The findings of this thesis have a number of practical implications regarding human resource management practices of universities. More specifically, it offers valuable insights into performance measurement practices, recruiting, and personnel selection in the context of higher education institutions. First, our findings highlight the unintended, negative consequences of current performance measurement practices in academia. The negative consequences of the so-called "new managerialism" trend in higher education (Deem & Brehony, 2005; Deem, Hillyard, & Reed, 2007; Hood, 1991) clearly outweigh the positive consequences. Essay 1 demonstrates that scholars adapt their behavior to the current performance measurement practices, that is, they engage in gaming performance measurement.

Our findings show that gaming performance measurement is a form of deviant workplace behavior, which harms universities and their stakeholders. We discuss the psychological processes that underly gaming performance measurement and deviant workplace behavior, such as the interaction of situational variables and individual differences (e.g., Colbert et al., 2004; Martinko et al., 2002) or moral disengagement (e.g., Barsky, 2008; Niven & Healy, 2016). Understanding these psychological processes can help universities to better manage the unintended, negative consequences of their performance measurement practices. Second, the thesis contributes to the notion that scholarly performance is multidimensional (Aguinis, Shapiro, Antonacopoulou & Cummings, 2014; Aguinis, Suárez-González, Lannelongue, & Joo, 2012). Essay 1 indicates that scholars engage in gaming performance measurement when performance measurement practices are focused on measuring only specific aspects of scholarly performance (e.g., research at the expense of teaching). Thus, universities should take into account all aspects of scholarly performance in their performance measurement practices in order to avoid unintended, negative consequences. In addition, Essay 3 shows that members of appointment committees use a variety of performance criteria for evaluating candidates for a full professorship. Moreover, there are three distinct patterns of implicit appointment preferences: Whereas one group of scholars focuses on publication performance, other scholars focus more on teaching performance or the sum of money acquired through research grants. This finding suggests that universities are well advised to consider the multidimensionality of scholarly performance also in their personnel selection decisions. Third, Essay 3 provides universities with suggestions for improving their processes of professorial appointments. Considering the differences in appointment preferences among scholars, universities could ensure that appointment committees make more well-balanced selection decisions by enabling all committee members to take part in the decision process and express their opinions. Fourth, the findings of this thesis stress the importance of leadership and management skills of professors. On the one hand, Essay 2 provides first evidence that it is important for universities to include leadership and management criteria in their job advertisements for professorships in order to gain competitive advantage. On the other hand, Essay 3 shows that most scholars do not use the criterion 'management and leadership experience' when evaluating candidates for a full professorship. These findings suggest that, in order to foster leadership and management skills of professors, universities should attach more importance to these skills during appointment procedures.

5.3 Directions for Future Research

The findings of this thesis provide fruitful avenues for future research on human resource management at universities. First, as universities can be considered knowledgeintensive organizations (e.g., Glauber, Wollersheim, Sandner, & Welpe, 2015), it seems plausible that our findings regarding the positive and negative consequences of performance measurement practices in academia hold true for other knowledge-intensive contexts as well. In order to generalize our findings, future studies on gaming performance measurement should focus on other types of knowledge-intensive organizations such as research and development teams in private organizations. As the study relies on qualitative interviews with stakeholders, further research can extend our findings by employing objective data. This approach would allow researchers to draw causal conclusions between the use of certain performance measurement practices and scholars' work behavior and performance. Furthermore, future research needs to examine more closely the role of different organizational norms that are related to gaming performance measurement. Many universities publish official "codes of conduct" or "principles of good scientific practice", which oftentimes contradict their performance measurement practices to a certain extent. More research is needed to understand the interplay of these different organizational norms and how it affects scholars' behavior.

Future research should also acknowledge that universities themselves are subject to performance measurement, for example, through international rankings or competition for public funding (Auranen & Nieminen, 2010; Hicks, 2012; Melo, Sarrico, & Radnor, 2010; Rabovsky, 2014; van Thiel & Leeuw, 2002). In that sense, scientists are actually contributing to the overall performance of their university when they aim at fulfilling the performance criteria of their universities, for example, by focusing on research topics that are likely to be publishable in top-tier journals. However, gaming performance measurement may also take on more serious forms like scientific misconduct, have long-term negative consequences, and harm certain stakeholders of universities, such as students, whose quality of education is affected by scientists who focus on research and acquiring external funding at the expense of teaching.

Second, several questions regarding the relationship between the performance of universities and the demand for leadership and management skills in job advertisements still remain to be answered. Apart from generalizing our findings by extending the study to scientific fields other than business and economics and to countries other than Germany, future research would profit from a larger sample of organizations and job advertisements. A larger sample would allow the application of more advanced statistical analyses such as latent growth curve modeling (e.g., Duncan, Duncan, & Strycker, 2006) or cross-lagged panel analysis (cf. Van Iddekinge, Ferris, Perrewé, Perryman, Blass, & Heetderks, 2009). In addition, it would be possible to include further variables on the level of job advertisements, such as academic rank of the advertised professorship. Another important issue for future research is to determine a causal explanation for the intermediate processes between organizational performance and job advertisements. Longitudinal studies that obtain information on the pool of candidates for advertised professorships (e.g., leadership competencies), organizational performance, and potential mediating variables (e.g., leadership behavior and employees' intrinsic motivation) are needed to show a causal link between universities' performance and their recruiting practices. Furthermore, instead of using only publication performance to operationalize the organizational performance of universities, future research could take into account the multidimensionality of scientific performance. Although publication performance is a widely used indicator of scientific performance in research and practice (see, e.g., Auranen & Nieminen, 2010), other proxies for organizational performance such as grant income or position in rankings could be used as well.

Third, further research on appointment preferences could take the following directions. Although our survey was targeted at scholars from different countries and scientific fields, most respondents were from Germany or the U.S. and worked in the social sciences. It would be interesting to generalize our findings by extending our study to other countries and scientific fields. We took into account that scholarly performance is multidimensional by including a large number of different appointment criteria. Nevertheless, appointment committees may use additional appointment criteria, for example, academic awards (Lutter & Schröder, 2016; Sheehan & Haselhorst, 1999). To include a larger number of appointment criteria, future studies on appointment preferences could use adaptive choice-based conjoint analysis with partial-profile designs (Orme, 2014). Our findings suggest that most scholars have a discrepancy between their explicit appointment preferences and their implicit appointment preferences. Further research is needed to determine the cause of these discrepancies, such as social desirability (e.g., Arnold & Feldman, 1981) or a lack of self-insight (e.g., Nisbett & Wilson, 1977; Uhlmann, Leavitt, Menges, Koopman, Howe, & Johnson, 2012). In addition, we investigated scholars' implicit appointment preferences on an individual level. Considering that appointment decisions are not made by individual scholars but groups of scholars (i.e., committees), it would be valuable to study the decision-making process of appointment procedures in a group setting.

5.4 Concluding Remarks

This thesis provides new insights into human resource management practices in higher education institutions, focusing on performance measurement, recruiting, and personnel selection. Across three essays, the thesis examines gaming performance measurement as a consequence of current performance measurement practices in academia, it explores the relationship between the demand for leadership and management skills in job advertisements and the performance of universities, and it identifies scholars' implicit preferences for selection criteria in professorial appointments. After discussing the theoretical and practical implications of our findings, the thesis proposes avenues for future research that will further expand our understanding of the role of human resource management practices in higher education institutions.

5.5 References

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6 Appendix: References for the Empirical Papers

6.1 Reference for Chapter 2

Graf, L.*, Wendler, W. S.*, Stumpf-Wollersheim, J., & Welpe, I. M. (2019). Wanting more, getting less: Gaming performance measurement as a form of deviant workplace behavior. *Journal of Business Ethics*, *157*(3), 753–773. doi:10.1007/s10551-017-3688-y [*equal contribution]

6.2 Reference for Chapter 3

Graf, L., Stumpf-Wollersheim, J., & Welpe, I. M. (2022). *Recruiting knowledge workers to lead the field: Leadership skills in job advertisements of universities.* Working paper.

6.3 Reference for Chapter 4

Graf, L., Rimbeck, M., Stumpf-Wollersheim, J., & Welpe, I. M. (under review). Academic success is in the eye of the beholder: Understanding scholars' implicit appointment preferences through adaptive choice-based conjoint analysis. *Research Policy*.