New Public Management in Higher Education

Exploring the role of neo-classic vs. public value-oriented paradigms of leadership with senior executives across 18 European countries

by

Kristina S. Weißmüller

University of Hamburg

Helmut-Schmidt-Universität / University of the Federal Armed Forces, Hamburg

Hamburg, 24.12.2018

TABLE OF CONTENTS

LIST OF ABBREVIATIONS ..... **IV**
LIST OF FIGURES ..... **V**
LIST OF TABLES ..... **VI**
ABSTRACT ..... **VII**
1 INTRODUCTION **1**
2 THEORY **4**
2.1 DEFINITION OF KEY CONCEPTS & PERSPECTIVES 5
2.1.1 Institutions of Higher Education in the Knowledge Economy *5*
2.1.2 Leadership in Institutions of Higher Education *6*
2.2 PARADIGMS OF LEADERSHIP IN HE 9
2.3 NEW MANAGERIALISM IN HE: REFORMS AND CONSEQUENCES 11
2.4 THE DISCOURSE ON NPM IN HE: PARADIGM SHIFTS 13
2.4.1 Field of Conflict: Value conflict *15*
2.4.2 Field of Conflict: Politicization *19*
2.4.3 Field of Conflict: Policy reforms driven by austerity *21*
3 METHODS **24**
3.1 MULTI-NATIONAL SURVEY DATA (COCOPS) 24
3.1.1 COCOPS Survey Structure *25*
3.1.2 Survey Cluster Relationships *29*
3.2 STUDY VARIABLES 31
3.2.1 Initial Model *31*
3.2.2 Dependent Variables (DVs): Acceptability of NPM *35*
3.2.3 Independent Variables (IVs) *35*
3.2.4 Control variables (CVs) *39*
3.2.5 Context: Consequences of the financial crisis (potential MVs) *39*
3.2.6 Context: Politicization (potential MVs) *40*
4 FINDINGS **42**
4.1 DESCRIPTIVE ANALYSIS 42
4.1.1 Sample statistics and control variables *42*

4.1.2 Independent variables *45*

4.1.3 Dependent variables: Acceptability of NPM *49*

4.1.4 Financial crisis (MV) *51*

4.1.5 Politicization (MV) *56*

4.2 MAIN ANALYSIS 58

4.2.1 Correlation Analysis *58*

4.2.2 OLS-Regression Results *60*

5 DISCUSSION 65

5.1 GENERAL DISCUSSION 66

5.1.1 NPM leverages Value Conflicts in HE Leaders [micro] *67*

5.1.2 NPM escalates the Power of Political Stakeholders on HE [meso] *69*

5.1.3 NPM leverages unsustainable Policy Reforms in HE [macro] *72*

5.2 LIMITATIONS & FUTURE RESEARCH 76

5.3 CONCLUSION: REDEFINING LEADERSHIP IN AN AGE OF CREATIVE DESTRUCTION 80

6 REFERENCES 85

APPENDICES VIII

APPENDIX A.1: DETAILS OF SYSTEMATIC LITERATURE REVIEW VIII

APPENDIX A.2: EXCERPT OF THE ORIGINAL COCOPS QUESTIONNAIRE XI

APPENDIX A.3: DETAILS OF FACTOR ANALYSIS OF Q24 XXI

APPENDIX A.4: DETAILS OF FACTOR ANALYSIS OF Q8 XXII

APPENDIX A.5: CORRELATION TABLE XXIII

APPENDIX A.6: LIST OF MINISTRIES RESPONSIBLE FOR HE BY COUNTRY XXV

LIST OF ABBREVIATIONS

AIC ..... Average interitem covariance

AICor ..... Average interitem correlation

COCOPS..... Coordination for Cohesion in the Public Sector of the Future

CV(s)..... Control variable(s)

DV(s) ..... Dependent variable(s)

HE..... Higher education

Het..... Heteroscedasticity

IV(s)..... Independent variable(s)

KMO..... Kaiser-Meyer-Olkin (measure for sample adequacy)

Kurt. ..... Kurtosis

Max. ..... Maximum

Min..... Minimum

MV(s)..... Moderator variable(s)

NPM..... New public management

OLS..... Ordinary least squares (linear regression)

Opport. ..... Opportunities

PA ..... Public administration

PM..... Public management

PVO ..... Public value orientation

RQ..... Research question

Skew. ..... Skewness

VIF..... (Mean) variance inflation factor

LIST OF FIGURES

FIGURE 1: PUBLICATIONS ON LEADERSHIP PARADIGMS IN EUROPEAN HE 13

FIGURE 2: FREQUENCIES OF COUNTRIES STUDIED (2005 – 2018) 14

FIGURE 3: FULL COCOPS SURVEY STRUCTURE 27

FIGURE 4: SIMPLIFIED SURVEY STRUCTURE 29

FIGURE 5: COCOPS VARIABLE STRUCTURE BY SURVEY CLUSTERS 30

FIGURE 6: INITIAL MODEL 33

FIGURE 7: INDIVIDUAL PROFESSIONAL VALUE TRADE-OFF PREFERENCES (Q23) 47

FIGURE 8: INDIVIDUAL PROFESSIONAL MOTIVES (Q24) 48

FIGURE 9: IMPORTANCE OF REFORM TRENDS IN HE ORGANIZATIONS (Q17) 50

FIGURE 10: PUBLIC VALUE ORIENTATION IN POLICY REFORM (Q18) 50

FIGURE 11: STATE OF PA COMPARED TO 5 YEARS AGO (Q16) 51

FIGURE 12: HE PA PERFORMANCE OVER THE LAST 5 YEARS (Q19) 53

FIGURE 13: APPLICATION OF SPECIFIC CUTBACK MEASURES (Q21) 54

FIGURE 14: CONSEQUENCES OF THE FINANCIAL CRISIS (Q22) 56

FIGURE 15: REVISED EMPIRICAL MODEL 65

FIGURE 16: REVISED THEORETICAL MODEL 66

LIST OF TABLES

TABLE 1: OVERVIEW OF SELECTED STUDY VARIABLES BY SURVEY CLUSTER 32

TABLE 2: RESULTS OF FACTOR ANALYSIS FOR A TWO-FACTOR MODEL OF Q24..... 37

TABLE 3: DETAILS OF COUNTRY SUBSAMPLES 43

TABLE 4: INDIVIDUAL STATISTICS: SAMPLE DESCRIPTION..... 44

TABLE 5: INDIVIDUAL STATISTICS: MOTIVATION AND BEHAVIOR WITHIN ORGANIZATION 46

TABLE 6: COUNTRY-LEVEL STATISTICS: STATE OF HE PA 49

TABLE 7: STATE AND PERFORMANCE OF HE PA 52

TABLE 8: FINANCIAL CRISIS..... 55

TABLE 9: ORGANIZATION-LEVEL STATISTICS: INTERNAL DECISION PROCESSES 57

TABLE 10: RESULTS OF OLS REGRESSION ANALYSES..... 62

ABSTRACT

Institutions of Higher Education (HE) are subject to rapid and radical changes. Faced with rising socio-political demands, globalization and digitization of HE, public sector austerity, and conflicting strategic goals, HE leadership has become extremely challenging. In the wake of the fiscal crisis in 2008, top-level executive leaders in public HE are put under severe pressure to implement neo-classical cost-saving strategies that are alien to the traditional values of European academia. Consequently, HE institutions are moving away from traditional public value-oriented principles of collegial and value-oriented HE management (*Public Value Orientation*) toward a marketized, competition- and performance-oriented view on HE (*New Public Management*).

While the negative effects of this latent paradigm shift on academic staff is well researched, there is hardly any evidence on how top-level executives perceive and cope with this phenomenon. This study closes this research gap by investigating whether HE leaders in Europe to-date are mainly driven by NPM-related values, it explores how prevalent politicized NPM-related value trade-offs are in the operative processes of HE leadership, and it reveals the detrimental consequences of the paradigm shift for European HE. Using an explorative and iterative mixed-methods approach, this study, first, derives research questions based on a systematic review of the scientific discourse on HE leadership and NPM to, second, conduct exploratory quantitative analyses on data of a unique survey conducted in 21 European countries with N = 7,312 top-level public sector executives, n = 631 of which are actively involved in (higher) education.

Results show that the paradigm shift toward marketized HE has created substantial conflict between the traditional values, identities, and goals of HE leaders and institutions by enforcing hierarchy, politicization, and a dysfunctional pressure toward short-term oriented criteria of economic productivity. NPM escalates the power of political stakeholders on HE who demand the implementation of policy reforms that are essentially obstructive to collaborative and innovative research and teaching HE leaders struggle severely to meet those ever-growing and value-incongruent demands without alienating themselves and their organizations from their core mission and the traditional values of academia.

Keywords: Higher Education, Leadership, New Public Management, Public Value Orientation, Paradigm Shift

1 INTRODUCTION

Institutions of Higher Education (HE) are subject to rapid and radical changes. Being faced with rising demands – with high pressures to privatize and implement cost saving strategies in the face of HE digitization (Lichy 2016), globalization, and internationalization (Hüther & Krücken 2016) – and conflicting strategic goals (Hüther & Krücken 2018b) – especially in the face of public sector austerity in the wake of the financial crisis in 2010 to 2015 – has created a paradigm drift in HE leadership moving away from traditional public value oriented styles of management – i.e. the *Public Value Orientation* (PVO) paradigm – toward a marketized, economy driven view on HE as a strategic resource – i.e. the *New Public Management* (NPM) paradigm.

Lichy (2016) points out that the radical changes in HE have produced unprecedented challenges: each year, more people are able to follow some form of HE program than in any time of human history. Providing the capacity to accommodate this demand has created an urgent need for innovation in the business models of the HE sector, leading to strategic differentiation and to a dramatic shift in leadership styles throughout HE. Especially for public institutions – i.e. universities funded or supported with tax money – HE organizations find themselves in an era of creative destruction in which the fundamental paradigm of what is 'value' in HE has been challenged (see also Carvalho & Diogo 2018). With the rise of NPM, HE institutions are subject to dramatic reform trends in the spirit of neoliberal perceptions based on notions of procedural efficiency, quantifiable performance measures, and extensive control mechanisms of managerialism as well as growing politicization and internationalization. Consequently, leaders in HE are challenged to respond to rising costs, scarce resources, changing labor markets, and new technologies in a digitized international market for HE (Holzer & Lane 1977). Leadership in HE has become more challenging than ever and high-level executives in HE organizations struggle severely to meet these ever-growing demands without alienating their organizations from their core mission and the traditional values of academia (Broucker et al. 2018).

Despite its central relevance for HE, this struggle is severely understudied. Striving to close this research gap, the objective of this study is to investigate how senior leaders in HE cope with these conflicting and multi-facetted demands and to explore what types of strategies they typically (prefer to) follow in order to manage the typical

tension fields that emerge from this organizational complexity. In this perspective, special focus is put onto the prevalence of the paradigms that constitute the foundation of these leadership strategies – i.e. PVO vis-à-vis NPM – to explore the role and consequences of this value drift for HE.

Although HE organizations can be described as the classic eco-systems of ecologic organizational theory (see e.g. McKelvey & Aldrich 1983), their specific goals and their set of stakeholders form a unique and idiosyncratic context for strategic choice, which provides dissimilar boundaries for decision makers leading HE organizations compared to those executives engaged in classic private sector corporate organizations. Consequently, the idiosyncratic role of HE leadership as the management of a societal commodity and (potentially) common good (Bessant et al. 2015) is a central premise of the current study and will be discussed in greater detail in the theory section of this study.

Despite its fundamental relevance for the functional management of the academic landscape worldwide – especially in the current face of transition towards knowledge-based societies – leadership in HE is a severely understudied topic both from the perspective of educational, socio-economic, and public sector sciences. Since the empirical evidence within this research area is surprisingly scarce, the current study reports findings of an iterative exploratory approach to the research process: Instead of postulating a set of hypotheses a-priori, the methodological strategy of this study is to, first, present the findings of a systematic review of the full current discourse on HE leadership under the growing influence of NPM from whence three core research questions are derived, namely:

- *Are HE leaders in Europe mainly driven by NPM-related values and how prevalent are NPM-related value trade-offs in the operative processes of HE leadership in Europe?*
- *How strong is the political influence of external stakeholders on HE management on the top level of leadership and to what degree does political involvement result in the design of HE policy reforms?*
- *How do HE leaders evaluate the relevance of NPM-related reform trends in HE?*

Second, these three research questions are explored by analyzing a large quantitative survey dataset comprising responses by the full population of top-level executive leaders in European HE from 2012 to 2015. Specifically, this study presents quantitative results of an exploratory quantitative study conducted in 21 European countries. Based on a survey among N = 7,312 senior civil servants on the executive level and higher, it is the first study specifically investigating the leadership strategies, values, and context of senior bureaucrats in HE in the face of rising financial, organizational, and strategic demands on institutions of HE. As a result, this quantitative analysis reveals a novel multi-level model of relationships between HE leaders' micro-level individual character traits and motivations, meso-level organizational goal orientation, and the macro-level influence of political stakeholders and the political environment of HE in general. This model is a starting point enabling follow-up studies to deduce specific hypotheses on potential causal mechanisms to be tested and falsified in future research. As a result, the main contribution of this iterative and exploratory research process is setting a stage for future research by shedding light onto a severely understudies problem of high relevance for the future of HE in Europe and beyond.

Furthermore, the current study provides several theoretical advances for the study of HE organizations. Although this study investigates classic issues of strategic leadership, its explorative and mixed-methods approach reveals that paradigms of leadership cannot be arbitrarily transferred into the specific context of HE without creating significant conflict and tension fields. Specifically,

- it presents empirical evidence on the relation between conflicts of traditionally academic values and pressures of performance-based leadership styles in the wake of economic austerity,
- it provides novel quantitative results on the role of HE politicization, and
- it explores the dynamic effects of value paradigms on HE executives' paradigmatic management styles developed to balance these often conflicting and incongruent demands.

Based on a systematic literature review and on a unique survey conducted with the full population of PA top-level senior executives in HE in 18 European countries (n = 631 of which actively working in HE), this study conducts explorative quantitative research

into the antecedents and consequences of a gradual adaptation of NPM-strategies and values into the leadership of institutions in HE.

The research presented in this study received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The empirical evidence of this study is based on a secondary analysis of the *Coordination for Cohesion in the Public Sector of the Future* (*COCOPS) Executive Survey on Public Sector Reform in Europe* (Hammerschmid et al. 2013) data which was funded by the European Union's Seventh Framework Programme under grant agreement No. 766887 (Project *COCOPS*).[1] The quantitative analyses of this study were conducted with Stata/SE (version 15.1). There are no conflicts of interest.

2 THEORY

This section introduces the key concepts and perspectives used in the present explorative study. Specifically, the following sub-sections, first, discuss the role of HE institutions in the knowledge economy (2.1.1) to, second, characterize the idiosyncratic challenges of leadership in HE institutions under conditions of public sector austerity, scarce critical resources, and conflicting goals (2.1.2). Sub-section 2.2 introduces the idea of a fundamental paradigmatic duality in modern HE organizations namely the conflict between NPM and PVO. Sub-section 2.3 discusses the

[1] The COCOPS research consortium is: *Steven Van de Walle* (project coordinator), *Victor Bekkers, Dion Curry, Sebastian Jilke, Walter Kickert, Bram Steijn, Roxanne van Delft* (Erasmus University Rotterdam, Department of Public Administration, The Netherlands); *Gerhard Hammerschmid* (project coordinator), *Klaus Brösamle, Jobst Fiedler, Anca Oprisor, Vid Štimac, Kai Wegrich, Anja Görnitz* (Hertie School of Governance, Germany); *Oliver James* (University of Exeter, Department of Politics, United Kingdom); *Rhys Andrews, James Downe, Valeria Guarneros-Meza* (Cardiff University, Centre for Local and Regional Government Research at Cardiff Business School, United Kingdom); *Tiina Randma-Liiv, Wolfgang Drechsler, Rainer Kattel, Riin Kruusenberg, Veiko Lember, Ringa Raudla, Külli Sarapuu* (Tallinn University of Technology, Institute of Public Administration, Estonia); *Edoardo Ongaro, Francesca Ferre, Davide Galli, Francesco Longo, Greta Nasi* (Bocconi University, Centre for Research on Health and Social Care Management, Department of Institutional Analysis and Public Management, Italy); *Geert Bouckaert, Sorin Dan, Christopher Pollitt, Koen Verhoest* (Katholieke Universiteit Leuven, Public Management Institute, Belgium); *Per Lægreid, Tom Christensen, Lise Hellebø Rykkja* (University of Bergen, Department of Administration and Organization Theory, Norway); *Judith Clifton, Daniel Díaz-Fuentes* (University of Cantabria, Department of Economics, Spain); *Mihály Hogye, György Hajnal, György Jenei* (Corvinus University, Department of Public Policy and Management, Hungary); *Philippe Bezes, Patrick Le Lidec* (National Center for Scientific Research (CNRS), University Panthéon-Assas, Paris II, Center for Studies and Research on Administrative and Political Sciences (CERSA), France); *Gilles Jeannot* (LATTS, Ecole des Ponts Paris Tech, France).

consequences of NPM-informed policy reforms as a consequence of this value drift toward NPM. These paragraphs are the foundation for a systematic literature review on the current discourse on the shifting paradigms of HE leadership (2.4) from which three explicit research questions emerge that are explored in the empirical sections of this study (sections 3 and 4).

2.1 Definition of Key Concepts & Perspectives

2.1.1 Institutions of Higher Education in the Knowledge Economy

The current study investigates the prevalence and acceptability of NPM-related paradigms in high-level executive leaders' coping strategies to handle growing demands under austerity in *institutions of HE*. In this context, institutions of HE are defined as legitimized corporate actors who are at least partially tax-funded and whose main purpose is the provision of higher education often in the form of formalized degree programs, i.e. universities, universities of applied sciences, and post-secondary educational colleges as recognized and protected by national law. Depending on the specific legal status in different countries, this relatively broad definition incorporates public, semi-public, and private organizations (Brunson et al. 2015).

Socioeconomically, HE organizations are institutions that serve a specific societal purpose. The purpose of institutionalized HE is providing a tangible or intangible organizational context that facilitates the *creation, provision, and dissemination of scientific knowledge to the general public* (Marshall 1916; Bass 1999; Kogan 2000; David & Foray 2003; Barney 2011). In contrast to mere information, this *scientific knowledge* is a specific form of human capital that is anchored within individual actors and, collectively, constitutes the intellectual social capital of any given society (Grant 1996; Bordieu 1998: 161f). Scientific knowledge has always been an essential collective resource of any society (McArthur 2011; Gutounig 2015; Hüther & Krücken 2018a) but it is important to note that the e.g. the member states of the European Union are currently subject to dramatic changes toward a system dominated by technologies that require highly specific and rare scientific competencies, transforming these societies more and more to post-industrialized economies often referred to as *knowledge societies*:

> *„Our society is moving towards a knowledge society, in which Information and Communication Technology has a crucial place. It is argued that these societal changes also imply that curricula and pedagogy have to change. […] Teachers need to become teacher leaders who are able and willing to collaborate with other teachers in preparing themselves for 21st century teaching. It is acknowledged that the changes required from teachers cannot be singled out, but should be part of a systemic change effort in which also schools and policy is involved." (Voogt 2012: 17)*

The transition from societies mainly driven by industrial and service economies toward knowledge-based economies is accelerated by recent technological advances in the field of automatization, digitalization, and artificial intelligence and it constitutes the prospect of societal changes in the 21st century equally as disruptive and creative as the industrialization in the 19th century and the introduction of mass-production in the 20th century, respectively (David & Foray 2003; Jörrisen & Marotzki 2008; Hüther & Krücken 2016).

In the face of this development, the crucial role of effective leadership in those very organizations that provide and disseminate such knowledge is obvious because these institutions play a decisive role in the increasing capitalization process of knowledge as providers of the central critical strategic resource in the emerging knowledge economies (Etzkowitz et al. 2000; Delanty 2001; Olssen & Peters 2005). Yet, the current body of empirical scholarship on how HE leaders cope with these dramatic developments in HE and their consequences are relatively scarce. This research gap is especially remarkable since prior research as early as the 1990ies points out that the demands on HE leaders are growing dramatically on their personal level, especially regarding conflicting internal, external, and political interests in times of HE austerity (OECD 1996; Barney 2011; Rhein 2015).

2.1.2 Leadership in Institutions of Higher Education

Leadership is essential for organizational effectiveness in general (Valle 1999; Van Wart 2003) and even more so in the complex environment of HE institutions (House et al. 2004; Vogel & Masal 2014; Hüther & Krücken 2016). Etzioni (1965) broadly defines leadership as a form of power based on a person's individual qualities that allows him or her to elicit followers' voluntary compliance in a broad range of matters,

or – more precisely – it is the power "to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization of which they are members" (House et al. 2004: 15). In the context of higher education and university management, leadership is a latent competence grounded in the individual but with the leverage to visibly influence the behaviour of everyone involved in the social environment of a team, a department, or an organization; It is "a mysterious process […] that touches everyone's life" (Yukl 2002) and it is decisive for the style of management and procedural conduct of the organization as a whole.

Although this fascination with leadership has created an extensive body of scholarship, the effects and effectivity of different styles of leadership in their idiosyncratic *context* has long been understudied (Teelken 2012) and leadership research in institutions of HE is especially scarce, even though leading academia requires special capabilities and idiosyncratic strategies in many regards: In most countries, universities and colleges function differently than for-profit businesses. Prior research on public sector leadership clearly points out that in public organizations in general – in contrast to for-profit private sector organizations – leaders have to balance a much more complex configuration of potentially conflicting roles and institutional logics, multi-dimensional functions and strategic goals as well as a diverse set of actors, stakeholders, and governing bodies (Valle 1999; Torres 2011; Blaschke et al. 2014; Vogel & Masal 2014). In HE, leaders are faced with the complex task of both managing dependent staff and relatively independent academics, which hold rather broad autonomy within their associated departments while keeping in mind the macro-level orientation of their organization as a leading institution that drives the long-term development and implementation of politicized educational policy (Paradeise & Thoenig 2013).

Effective leadership is one of or the most essential aspects of university governance, holding "vital strategic, financial, organizational and motivational importance" (Collinson & Collinson 2009: 369). Raelin (1995) has pointed out that the essential challenge of leadership in institutions of HE lies in the *management of autonomy and meaning* within a unique system of collegiality on the micro- and meso-level while balancing this strive for institutional (and individual) autonomy within political interdependence on the macro-level system of federal or national (or even

international) educational policy (Smircich & Morgan 1982; Paradeise & Thoenig 2013).[2]

Leadership in HE encompasses all implicit and explicit behaviors of executive managers – i.e. employees on the highest levels of HE organizations – that design and help implement an organization's processes, procedures, and policies in such a way as to facilitate the implementation of this organization's essential goals in an effective and efficient way. For HE organizations, this goal is the creation and dissemination of knowledge by, first, creating a functional environment that creates new knowledge – i.e. scientific research – and, second, by creating functional learning and teaching environments to disseminate the current body of knowledge – i.e. by the means of lectures, structured taught courses (with or without the goal of awarding degrees), individual development, and practical transfer by industry partnership and collaboration. HE leaders predominantly manage publicly funded organizations. Consequently, these executives have to balance not only those two very different and, hence, demanding goals but they also have to balance the financial aspects related to providing both research and teaching at the highest level of quality with the political demand of frugality in the age of public sector austerity. Consequently, HE leadership is highly challenging and a very fascinating and important topic of research because it is managerial behavior in a unique balancing act between the different and conflicting socio-normative paradigms affecting HE institutions (Nieke & von Freytag-Loringhoven 2014; Lenzen 2015; Johansson 2016). Under the premise of this complexity, it is essential to understand which internal and external factors drive HE leaders' motivational factors and their *choice architectures*. Gibbs et al. (2008) as well as Bryman & Lilley (2009) explicitly point out that most theoretical frameworks on HE leadership generally underestimate the significance of contextual factors in HE, concluding that it was futile to develop strategic managerial advice without considering the specific context and paradigm under which HE leaders make their decisions.

[2] The perspective explored here poses a sharp contrast to the viewpoint of *new managerial leadership* in higher education, a lens widely adapted in the 1980s but with rather often disappointing results (Deem 2004; Bryman 2007; Blaschke et al. 2014).

Leadership is central for sustainable organizational development and for the successful implementation of organization change in order to adapt to a complex and dynamic organizational environment (Lewin 1938; Mintzberg 1989; Senge 1990; O'Toole 1995). In her qualitative case-based research, Wolverton (1998) explores the role of different leadership styles as *agency* for organization development in HE. She points out that HE executives' individual leadership styles are key to implementing systemic organizational change and, thus, HE innovation. Traditionally, leaders in HE are often *primus inter pares* (Carvalho & Diogo 2018). They function as multifaceted agents of change – acting both as charismatic champions, motivating colleagues, as well as transformational principals – and thus provide decisive nudges for their peers as well as their subordinate environment (Wolverton 1998). HE leaders are personified stimuli that address their environments' need for external motivation as *helpers*, *movers*, and *doers* (Wolverton 1998: 27). Using a qualitative case studies approach, Bolden and Petrov (2014) also find that HE executive leaders empower and steer their colleagues by – implicitly or explicitly – providing order and direction in a complex organizational environment by creating functional choice architectures (Gronn 2000; Gosling et al. 2009; Lumby 2013).

2.2 Paradigms of Leadership in HE

Growing complexity in the management of departments calls for leaders who can achieve ambidexterity in their leadership style with both the stakeholders within their departments and with those stakeholders located in the external environment – especially political actors and agencies. This need for ambidexterity creates increasingly tough challenges for top-level executives in HE organizations because these leadership styles often stand in diametric contrast do each other and are based on dissimilar paradigms (Collinson & Collinson 2009).

Paradigms are entire constellations of beliefs, values, and techniques that are shared by members of a given community (Kuhn 1970: 175). In Kuhn's (1970) classic definition, paradigms are transitional stages of scientific zeitgeist that are not primarily concerned with governing a specific subject matter but rather a group of professional practitioners or a community of scholars by providing a framework for narrative and thought: In this sense, "research [is] firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges

for a time as supplying the foundation for its further practice" (Kuhn 1970: 10). Consequently, paradigms can be regarded as the base of scientific – and also practical and societal – changes by providing the accelerating and stirring frame for direction in which individual theories and discoveries are made and interlinked in a path dependently that, eventually, constitutes individual behavior (Gow & Dufour 2000).

From a theoretical perspective on management, the idiosyncrasies of leadership in HE organizations can be explored through many lenses of paradigms. Prior studies predominantly applied *hybrid management theory* (Campbell 1957), *diversity of managerialism* (Mintzberg 1973), and Cohen and March's (1974) *Garbage Can* model (Bok 2003: 6; Hüther & Krücken 2018b). All of these theories have in common that they characterize (HE) management as a complex, often messy and unpredictable process of which leaders have no absolute control over and in which they have to balance conflicting goals and outcomes. Exploring idiosyncrasies of university management through tracking managers' daily work routines, Thody (1989) found that a specific characteristic of HE management is that it incorporates leadership in an organizational environment under *conflicting values*, *conflicting goals*, and *organizational complexity* (Thody 1989: 282-284). Unsurprisingly, more recent studies – e.g. by Bolden and Petrov (2014) – explicitly point out that hybrid types of leadership have a special relevance for HE organizations (Müller-Seitz 2012; Bolden & Petrov 2014). This hybridity is a result of senior executives' struggle to balance two fundamental paradigms of HE leadership within one single organization, namely NPM and PVO.

The idea of a fundamental and paradigmatic conflict does not only exist between the executive board of an HE organization and its external stakeholders but also between the internal members of the organization. Taking on a critical perspective, Marginson (1997) presents a conceptual essay on the role of leadership in HE organizations in their idiosyncratic and very demanding role as managers of subordinate individuals – i.e. academic researchers and lecturers – that strive to enjoy academic freedom to fulfill their profession and their societal role while at the same time creating institutional and managerial restrains that produce de-facto "regulated autonomy" (Marginson 1997: 359). By providing necessary order, Marginson (1997) argues, HE executive leaders

possess a drastically underestimated regulatory power on directing both the process of producing and disseminating scientific knowledge throughout society.

2.3 New Managerialism in HE: Reforms and Consequences

For the last thirty years, waves of managerial and administrative reforms swept over public HE sector (Hüther & Krücken 2016). The most prevalent is New Public Management (NPM), a paradigmatic program for governmental transformation initiated in the 1990s and captured by the concept of reinventing government through marketization (Hood 1991; Barzelay & Armajani 1992; Osborne & Gaebler 1992; Schedler & Proeller 2000; Dunn & Miller 2007: 345). NPM is not grounded on a singular fundamental theory but it is a concept rooted in neoliberalism, entrepreneurialism, and managerialism aimed to provide practical solutions to operational problems confronting public organizations in general and public sector HE in particular (Gow & Dufour 2000).

NPM is a conception of public sector governance that is in fundamental contrast to European traditions of administration by calling for an end to the principles of (Weberian) bureaucracy and Habermas' ideas of knowledge as human interest and that it should, hence, be a public good to society (Habermas 1975). NPM is an idea strongly rooted in neoliberalism, in which knowledge is a scarce resource that is supposed to be capitalized by individual (corporate) actors (Olssen & Peters 2005). NPM stirs competition between sectoral actors – e.g. different universities in the case of HE – to "build morale and encourage creativity" which in turn secures organizational survival (Osborne & Gaebler 1992: 80). The idea is that competition will motivate actors to leverage market forces and use economically rational market-based strategies of leadership in the delivery of HE that will lead to cost savings and increased efficiency of the (HE) system as a whole and that will, eventually, enable society to provide knowledge (and HE) as a semi-public good (Dunn & Miller 2007; Marginson 2007). Consequently, advocates of NPM argue that diminishing the influence of governmental actors on HE organization by transferring managerial power and responsibility – i.e. leadership authority – onto leaders within public HE organizations will allow organizations to maneuver more freely and lead to a more client- or customer- (i.e. citizen or student-) and resource-based view on management that will

help HE organizations reinvent themselves through professionalism in an age of austerity (i.e. within very limited resources).

The core idea of NPM is that by creating competition and scarcity – but also by granting more extensive freedom for managerial choice – public organizations will clarify their fundamental purposes and eliminate processes and functions that do not help accomplish their central goals (Dunn & Miller 2007). Furthermore, managerial reforms might "bring a breath of fresh air" (Shin & Jung 2013: 617) into academia which tends to be conservative regarding their culture, activities, and forms of organization. As a result, for the last three decades, the HE sector especially in Europe has experienced substantial pressure from the blurring of national and sectoral boundaries and has experienced the rise of economic and performance-based auditing reforms especially since these demands are novel to the traditional concepts of HE organization (Hüther & Krücken 2016, 2018a).

In the wake of NPM-related reforms, HE organizations increasing adapted principles of managerialism on the micro-level of leadership. *Managerialism* is characterized by a greater separation of academic work and management activities which comes with increased control and regulation of academic work by high-ranked HE leaders. With its grounding in NPM and neoliberalism, managerialism fosters the ethos of enterprise and emphasis the importance of performance – or: income generation – for HE organizations, leading to a shift in authority from academics to managers and, consequently, to a weakening of the professional status of academics, an increase in market orientation, and higher competition for scarce academic and financial resources within the HE sector (see Shepherd 2018 for an extensive overview).

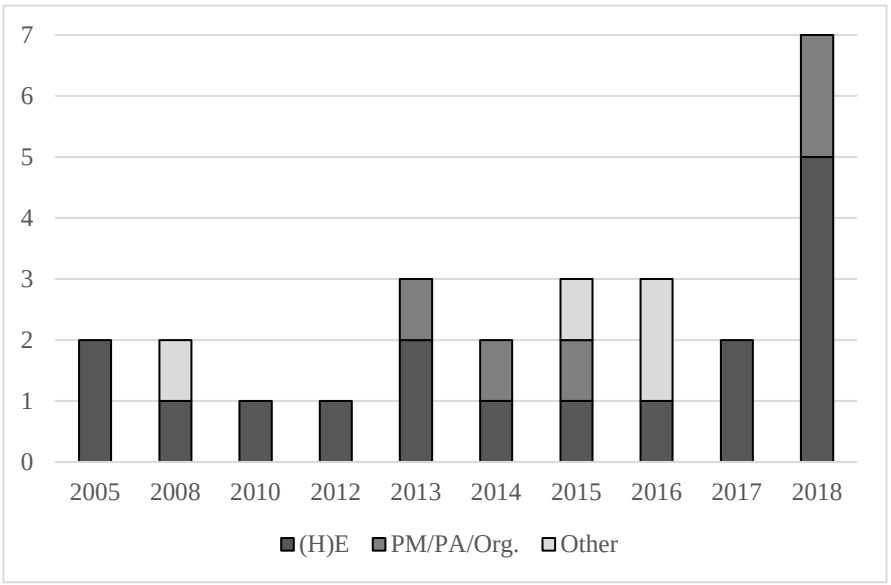
Neoliberalists conceive the world as a marketplace in which worldwide free markets of HE facilitate economic prosperity whilst offering choice to the consumer. Markets rather than government plans are seen as the answer to a "bloated, unresponsive and inefficient public [HE] sector" (Shepherd 2018). In this paradigm, hierarchical management is regarded as essential and beneficial to organizations. It is a discrete and generic function that is executed rationally and value neutral. Thus, principles of strategic management and leadership are perceived as universally applicable in the sense that the specific context, e.g. HE, does not matter. Furthermore, NPM-related ideas on HE management perceive private-sector methods as superior and postulate

that because managers must have the right to manage that these leaders should be separated from the workforce, i.e. researchers, lecturers, and staff, in order to execute power through hierarchy (Olssen & Peters 2005; Shepherd 2018).

2.4 The Discourse on NPM in HE: Paradigm Shifts

Despite its crucial relevance for the future of HE in Europe, the current scientific discourse on the paradigms of leadership and management in European HE institutions is relatively scarce. A systematic literature review reveals that only 26 relevant studies were published in scientific journals (N = 22), as book chapters in edited volumes (N = 3), or in the form of conference proceedings (N = 1) until now.[3] The database search queries included all dates of publication, yet, all relevant studies retrieved were published between 2005 and 2018 which illustrates that this topic has only recently gained scientific attention. Figure 1 shows the number of relevant publications per year and clustered by the scientific focus of the respective publication outlets.

Figure 1: Publications on leadership paradigms in European HE



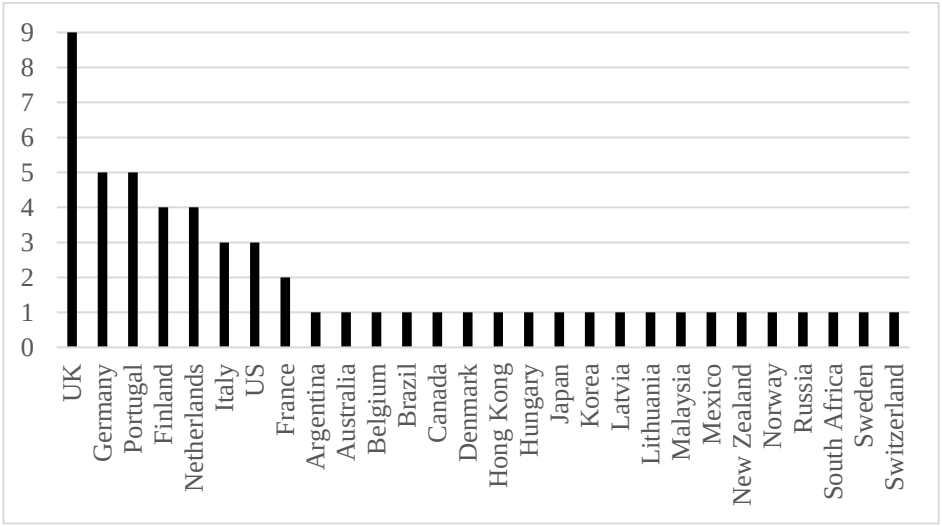
Notes: *(H)E*: publications on (higher) education; *PM/PA/Org.*: publications on public management, public administration, or organizational studies; *Other*: publications focusing on mixed research areas.

[3] In total, N = 213 individual studies were retrieved from the databases EBSCO, EconBiz, ERIC, JSTOR, Scopus, Science Direct & the Web of Science Core Collection (see Appendix A.1 for more detail on the search log, on the process of manuscript selection based on Moher et al.'s (2009) PRISMA procedure, as well as the main results of the review).

The discourse is foremost located in journals related to (higher) education[4] and more recently also journals dedicated to public administration and management[5]. Furthermore, Table A.1.3 in Appendix A.1 provides an extensive overview of the characteristics, the subjects and perspectives studied, and the main findings of the studies retrieved from the systematic literature review.

Most studies apply qualitative methods of research (N = 13) or are mostly conceptual or narrative in nature (N = 6). Only N = 3 studies are based on quantitative data collected by surveys or relay on mixed-method approaches (N = 4). Empirical studies predominantly focus on the UK (N = 9), Germany (N = 5), Portugal (N = 5), Finland (N =4), and the Netherlands (N = 4), while studies using data on other European countries are even scarcer (see Figure 2). This scarcity strongly calls for more empirical and especially quantitative research into HE leadership in Europe.

Figure 2: Frequencies of countries studied (2005 – 2018)



Note: The sum of frequencies of countries studied is larger than the absolute number of studies included in the literature review because a number of studies compare several countries.

[4] Namely: *Educational Philosophy and Theory*; *Environmental Education Research*; *European Journal of Higher Education*; *Higher Education*; *Higher Education Policy*; *Higher Education Research & Development*; *Journal of Education Policy*; *Journal of Educational Administration and History*; *Journal of Higher Education Policy and Management*; *Oxford Review of Education*; and *Studies in Higher Education*.

[5] Namely: *International Journal of Organizational Analysis*; *International Journal of Public Administration*; *Organization Studies*; *Organizational Studies*; and *Policy & Society*.

While the current discourse on NPM in HE does acknowledge that organizational change is necessary for innovation in the (public) HE sector – see, for instance, Carvalho and Diogo (2018) or Hüther and Krücken (2018a) – most authors are critical and conclude that the installation of neoliberal ideas in HE leadership and marketized processes in organizational HE management came with severe long-term costs or had resulted in unintended negative side-effects that threaten the core values of academia (Broucker et al. 2018). In summary, the discourse particularly identifies three main fields of conflict: *value conflicts*, *politicization*, and *short-term policy reforms driven by austerity*.

The following paragraphs provide a summarized overview of the arguments put forth by the current scientific discourse regarding these three aforementioned fields of conflict. In this way, this section underlines the need for more quantitative multi-level research into leadership in European HE and allows the identification of research gaps and research questions which will be addressed in the remaining sections of this study.[6]

2.4.1 Field of Conflict: Value conflict

First, NPM creates a tension field for HE leadership on the micro-level because neoliberalism opposes the traditional values of academia – i.e. collegiality and autonomy – and the idea of public value orientation – i.e. public welfare orientation – as a core principle for organizational leadership in HE (*value conflict*).

One of the first studies that pointed out the value incongruence between NPM and traditional forms of university leadership is Salter and Tapper's (2000) conceptual piece on the politics of governance in HE. Focusing on the idea of quality assurance, Salter and Tapper (2000) argue that the trend towards implementing NPM-related reforms in HE is fundamentally incongruent with the traditional values of academia because it constitutes a shift in the balance of power between the main actors of HE diverting from traditionally collegial collaborative decision-making towards hierarchical managerialism (Broucker et al. 2018) – and with severe consequences:

[6] The following sub-sections provide a shortened summary of the current discourse – instead of an extensive review – because the systematic literature review is not the core objective of this book. Yet, it is essential because it provides an important starting point for the exploratory quantitative analysis presented in the following sections of this study as well as directing the narrative frame for the Discussion section.

For example, Hüther and Krücken (2013) show that leaders in HE increasingly use NPM narratives in the German HE sector to constitute their organizational power through hierarchy in contrast to collegiality and reputation. NPM narratives are also used to simultaneously increase the managerial room for maneuver for high-level HE executives in Portugal and Finland while at the same time decreasing macro-level autonomy of the very same actors by strengthening the influence of governmental and political stakeholders (Carvalho & Diogo 2018). A comparative case-based study comparing the development of the national HE systems of Germany and Russia by Block et al. (2016) confirms this development as a trend in a number of European countries. Both countries in Block et al.'s (2016) study are found to be moving away from the traditional Humboldt model of a system of research universities toward a NPM-related, neoliberal, and competition-based system to provide marketable *skills* instead of *HE* in the Humboldtian perspective. The authors conclude that transformation results in substantial and fundamental value conflicts for all academic actors involved and especially for HE leaders.

From a holistic perspective of scholarship, exercising power through "systems of economy and control" (Marginson 1997: 367) represents a latent hierarchy that actually stands in conflict with traditional values of academic freedom but it is also very characteristic for the dilemma between managerial logics and core values of HE – a conflict that many HE executives face on a daily basis (Newman 1959; Foucault 1988; Gordon 1991; Deem & Brehony 2005). Hüther and Krücken (2018a) explicitly point out that academics – especially in the case of Germany – view formal accountability with skepticism because of its relation to red tape or the general (excessive) bureaucratization of working processes which is reported to be very demotivating for academic staff and comes with high and essentially preventable costs for supervision and monitoring while its benefits remained unclear.

Traditionally, governance models of universities – and other HE institutions – in Germany are characterized by the functional coexistence of strict macro-level state regulation to set organizational boundaries on the one side and academic freedom to interpret and design the operative meso-level processes within an organization on the other side. "In contrast, the NPM model strengthens competition both between and within [… HE…] institutions, strengthens managerial self-governance, weakens the principle of academic self-organization[,] and provides for a stronger external

guidance, instead of detailed state regulation." (Hüther & Krücken 2018a: 27). As a result, the German system is now evolving from a collaborative-holistic system to a competition-based system of research funding competitiveness and accounting pressure that prevents collaboration both within and between HE organizations. This means that even though universities are recognized as the central institution of the postindustrial knowledge-based society, the key effect of HE policy reforms in the spirit of NPM is that these essential organizations in fact become *less functional* because they are occupied with novel and from times redundant processes to measure and compare their productivity against each other on arbitrary benchmarks of external audits (e.g. by political actors but also by the accreditation system, see also Teelken 2012a).

Hüther and Krücken (2018a) explicitly point out that this transition is extremely demotivating for academic professionals. Taberner (2018) reports similar findings in her study on the marketization of the UK HE sector and its impact on academic staff and the nature of their work. Based on 12 semi-structured qualitative interviews with university researchers and lecturers, she points out that the conflict between NPM and PVO was very prevalent for her interviewees in daily practice and that it had a radical impact on academics who felt that more and more they could only exercise limited degrees of *technical control* over their work but are gradually losing *ideological control* and academic freedom. This value-based conflict caused anxiety and stress among the academic profession who felt a gradual instrumentalization conquering the traditional ideal of intellectualism which lead to a fragmentation of the academy and their professionalism, increased incidence of performativity, bullying, and workplace aggression, as well as overall intensification of so-called meaningless work to cope with red tape. A large-scale mixed-methods study conducted in the Netherlands, Sweden, and the UK by Teelken (2012a) as well as qualitative research from Portugal by Carvalho and Santiago (2010) find similar negative effects of installing a NPM-informed audit culture in HE in ten European universities on the academic staff: researchers and lecturers responded with coping mechanisms such as relying on *symbolic compliance* and professional pragmatism and they reported that they felt highly dissociated from the managerial measures imposed upon them, and were sometimes even fearful towards evaluation on any level of their organizations.

As Shore (2008) points out, in the NPM ideology academics are no longer constitutive members of their universities but they are regarded as employees, i.e. "an individualized proletarian workforce that must be subordinated to the organizational hierarchy of managers, that is people of whom the [u]niversity must demand excellence [… as a means to…] become a market leader in quality brands and the 'pursuit of [(inter-)organizational] excellence'" (Shore 2008: 289). This focus on haphazardly and externally set benchmarks of evaluation is absurd because the main goal of HE organizations is not to make profit for survival in a hostile and competitive organizational environment – like any arbitrary for-profit company producing any kind of consumer good – and especially if its goal is still the provision of a creative environment that allows the generation and dissemination of (interdisciplinary) knowledge. In a quantitative study conducted with N = 1,817 French academics working at universities, Chatelain-Ponroy et al. (2018) show that the NPM paradigm and its performance culture does not fit to the traditional academic values in France. Implementing NPM-based policy reforms alienated both academics and staff because it stands in fundamental contrast to their personal attitudes and values related with HE.

In summary, the scientific discourse unanimously points out that the NPM paradigm is incongruent with traditional values of university leadership and management in Europe and that its implementation can have severe negative effects on academics' commitment to their organization as a whole, to being part of academia, and of complying with the rules imposed by a performance-based auditing system in the spirit of NPM. However very little is known about how the people *implementing* these systems of control – i.e. HE leaders – are actually affected by this value incongruence. Do executive leaders in HE actually experience equivalent struggles and what is their motivation while implementing reform policies demanded by political actors? This leads to the first research question:

> *Research question 1 (RQ1): Are HE leaders in Europe mainly driven by NPM-related values and how prevalent are NPM-related value trade-offs in the operative processes of HE leadership in Europe?*

2.4.2 Field of Conflict: Politicization

A second field of conflict is that NPM-reasoning in the form of political narratives can be used by political actors with particular interests to legitimize and extend their – i.e. external stakeholders' – control over academia thus diminishing academic and managerial freedom in HE leadership (*politicization*).

Political narratives informed by the NPM paradigm – in contrast to the traditional narratives of PVO – are important because they reveal how some goals are emphasized by political actors while other goals in HE are gradually left aside. In a longitudinal case study of one large public university in Germany, Blaschke et al. (2014) use hierarchical cluster analyses to reveal that institutional logics installed by political actors gradually translate into micro-patterns of communication on almost every level of the HE organization. The authors show that the prior principle of collegial management was gradually replaced by governmentality and micro-managerial processes strongly influenced by political agendas set by external political stakeholders. Blaschke et al.'s (2014) results echo Enders and Westerheijden's (2014) findings: based on a single case qualitative study in the Netherlands, the authors reveal that NPM's focus on quality assurance in HE can be (ab)used by political actors to provide legitimacy through procedures and thereby create latent power structures that undermine academic freedom (see also Luhmann (1969) and Hüther & Krücken 2018a). Santiago and Carvalho (2015) as well as Lumino et al. (2017) report similar findings from Portugal and Italy, respectively.

Throughout Europe, studies find that the political discourse on the ultimate goal and value of HE has shifted dramatically. In a (relatively) early conceptual study, Ferlie et al. (2008) show how political narratives have been used to gradually transfer NPM from the public sector in general – i.e. public administration and governance – into the HE sector specifically and how policy networks and regimes create an ideology around quantifiable criteria of efficiency that gradually replaced traditional principles of HE leadership in universities throughout Europe (see Deem & Brehony (2005) for an exemplary case of the UK). Ferlie et al. (2008) argue that this process of politicization *destroyed academics' traditional monopoly* given to them by the state to exercise their core function: traditionally, the state agreed to protect the academic community from external – and especially political – influences as long as they implemented norms,

values, and practices preventing an abusive use of their knowledge. Now, Ferlie et al. (2008) argue, political actors such as ministries and agencies attempt to steer the HE system vertically by setting explicit performance goals and by hollowing out collegial principles of coordination and university management. Consequently, politically motivated and NPM-related reforms constitute a fundamental transformation of the functioning principles of HE.

Unsurprisingly, other researchers also find that political actors' growing influence results in a fundamental redesign of the HE systems in Europe – sometimes with paradoxical results. Conducting critical discourse analyses on seven consecutive policy plans in Denmark, Vingaard Johansen et al. (2017) show that the basic objectives of education have changed dramatically over the timespan of 34 years (1978 – 2012). The political narrative has moved from a pluralistic discourse emphasizing the role of HE in promoting democratic values of citizenship, equality, and PVO towards a strong emphasize on the economic benefits of HE. The political documents clearly reveal that Danish top-level governmental executives and political stakeholders perceived the state of their country's HE sector as a critical strategic resource in transforming Denmark into a knowledge society in an ultimately competitive and globalized world. The strong prevalence of the "(global) competition stand" (Vingaard Johansen et al. 2017: 271) shows how dramatically the reasoning of political actors has shifted from the traditional PVO paradigm toward NPM. As a consequence, HE leaders are increasingly pressured to implement leadership styles that foster and complement these political agendas in their HE organizations.

However, not all effects of the political pressure to implement NPM in HE are negative for leaders in HE: Conducting semi-structured qualitative interviews with $N = 47$ key actors (high-level executives) in HE in Portugal and Finland, Carvalho and Diogo (2018) show that leaders in both countries face similar pressure by their external political and public administrative stakeholders to implement NPM-related policies in their organizations. On the one hand, the interviewees similarly report that this pressure resulted in a decrease in professional autonomy, which parallels a decrease in both organizational and interventional autonomy. On the other hand, HE leaders in Portugal and Finland feel that *their own position is strengthened* because they had more freedom to manage human resources and finances, thus, increasing policy

autonomy on the meso-level of organizational leadership but that this partially increased discretion comes at the cost of higher dependency on governmental and political actors in many respects (Carvalho & Diogo 2018). Although prior research clearly points out that the influence of political stakeholders on processes of HE leadership is growing, most scientific studies are limited to the organizational (meso- and macro-) level of politicization of HE leadership (Olssen & Peters 2005; Ferlie et al. 2008; Blaschke et al. 2014; Enders & Westerheijden 2014; Santiago & Carvalho 2015; Lumino et al. 2017; Vingaard Johansen et al. 2017; Carvalho & Diogo 2018) and do not take into account micro and meso-level dynamics. Furthermore, most of the discourse focusses on a limited number of countries only (Denmark, Germany, Finland, Italy, the Netherlands, and Portugal) calling for more quantitative research with a broader international perspective. This leads to the second research question:

> *Research question 2 (RQ2): How strong is the political influence of external stakeholders on HE management on the top level of leadership and to what degree does political involvement result in the design of HE policy reforms?*

2.4.3 Field of Conflict: Policy reforms driven by austerity

A third field of conflict is that NPM-informed policies are often driven by the need to respond to a growing demand to realize cost-savings instead of being motivated by the wish for HE sector innovation. A fundamental characteristic of the NPM paradigm is that it encourages short term planning and managerial decision making based on considerations on cost-driven effectiveness instead of long-term efficiency – especially in the age of public sector austerity. Focusing on immediate and quantifiable performance indicators as a benchmark for HE success is alien and potentially harmful to the creative process of knowledge generation especially in interdisciplinary research and can, eventually, lead to dysfunctional policy reforms (*policy reforms driven by austerity*).

Knowledge capitalization as a consequence of neoliberal reform trends in HE has both economic and politico-philosophical effects on societies but it also creates very practical problems (Olssen & Peters 2005): In Italy, the NPM-related idea of focusing on performance assessment has had tremendous influence on the re-design of the HE

landscape and HE policies implement in Italy. In their case-study based analysis, Lumino et al. (2017) show that the overwhelming pressure to implement performance assessments and governmentality has resulted in HE leaders following micro-level coping mechanisms of *pseudo-compliance* and *depoliticization*. HE executives report lower rates of organizational commitment and motivation, and admitted that one coping strategy was the mere fabrication of performance results in a system increasingly bloated with red tape bureaucratic procedures.

A systematic review of policy reforms in eleven OECD countries by Broucker et al. (2015) provides further evidence corresponding with Lumino et al.'s (2017) findings worldwide: Although Broucker et al. (2015) show that NPM-related reforms are highly prevalent in basically all countries studied, they also point out that there are strong indications of pseudo-compliance worldwide because many countries implicitly or explicitly encourage the installation of mechanisms that counterbalance pure market orientation in HE, e.g. by facilitating meso-level collaboration, by installing invisible colleges that are managed anarchically, and by (secretly) allowing non-structured non-hierarchical ways of participation in university governance for societal benefit (Broucker et al. 2015). As a result of their struggle with public sector austerity and politicization in the spirit of NPM, European universities are simultaneously subject to (quasi-)isomorphism and growing differentiation as their creative and proactive way to navigate through the bureaucratic demands of performance-based systems of control imposed on them (Hüther & Krücken 2016). As a result, neoliberal reforms and NPM -related control mechanisms installed onto the academic system both drive and limit sustainability in universities because they create an ideology of competitiveness and short-term goal orientation that hinders national and international collaboration for HE coordination in teaching, learning, and research (Bessant et al. 2015). Vingaard Johansen et al. (2017) also point out that the political discourse on HE in Denmark has shifted from a traditional pluralistic idea of academia towards neoliberal reasoning that emphasizes notions of globalization and competitiveness in a knowledge society. This paradigm shift also directly influences the design of the policies implemented in Danish HE.

In summary, most studies show that policy reforms informed by the NPM paradigm have critical consequences for HE – especially regarding employee behavior and

retention. Furthermore, the actual effectiveness of NPM-reforms in HE regarding cost-savings and rationalization is debated not only in European HE systems. For instance, a quantitative study based on longitudinal data on institutional performance in US HE by Shin (2010) does not find a noticeable increase in performance in the states that adopted performance-based accountability systems in HE compared to those states that maintained the traditional PVO-related principles of HE leadership.

Furthermore, a number of studies reveals that the broad tendency to implement HE policies as a response to public sector austerity comes with a number of unintended side effects. For instance, a study of Shore (2008) shows that in the UK – a country in which the audit culture in HE is especially far developed and in which NPM has become the dominant paradigm of university leadership – the effective power and value shifts in HE have created negative societal consequences in reducing access to HE for lower social classes but also in decreasing motivation of HE professionals and leaders resulting in an overall decline of quality and professionalism in university management. In a large-scale quantitative study on 19 countries – seven of which are European – Shin and Jung (2013) show that HE marketization based on the NPM paradigm is significantly related with higher stress for HE professionals, which is a severe problem for gaining and retaining highly qualified employees in the systems. Shin and Jung's (2013) findings are supported by large-scale quantitative research on the Finnish university system by Kallio et al. (2016) who revealed that the overwhelming majority of the academic community in this country perceived the proliferation of performance-based evaluation systems in HE as a catalyst for changing the very ethos of academic life and work to the negative. Consequently, implementing the – often short-term oriented – policies of NPM has the potential to drastically decrease employees' motivation and commitment to their universities.

Considering the severe consequences of the current NPM-informed reform trends in HE for the individual members of HE organizations, it is surprising that there is hardly any empirical evidence on how key actors in charge of implementing those reform trends evaluate them. Focusing on the special role of top-level executives in HE to close this research gap, leads to research question 3:

> *Research question 3 (RQ3): How do HE leaders evaluate the relevance of NPM-related reform trends in HE?*

3 METHODS

The following section provides detailed information on the quantitative methodology of this study. Specifically, the first part of this section (3.1) presents details on the development and process of the COCOPS project and the context of which the data were raised. For transparency, this part includes explicit information on the survey structure, the original research consortium, the seven major topical clusters addressed in the full survey, and the hypothesized cluster relationships between these seven topics. In its second part, the current section describes the specific variables selected for the analysis in this study (3.2) to explore the research questions derived from the prior literature review (2.4), introducing the initial statistical model and describing in detail how the variables and covariates of this model were aggregated and how composite measures were validated, respectively.

3.1 Multi-national Survey Data (COCOPS)

The empirical evidence of this study is based on the *COCOPS Executive Survey on Public Sector Reform in Europe* (Hammerschmid et al. 2013). Funded by the *European Union's Seventh Framework Programme* under grant agreement No. 766887 (Project *COCOPS*), this survey created a unique open access quantitative dataset[7] on management styles, demands, and issues of the entire population of public sector top managers in ministries and agencies in 21 European countries (see the project report by Hammerschmid et al. (2016) for more detail).

The target population of this survey were leading managers in the top-three levels of European public organizations – i.e. positions comparable to those of secretary-general, director-general, and director – based on a joint sampling frame compiled by the project's national research teams in each of the 21 countries.

The *COCOPS* survey employed a standardized survey translated into the local language(s), which was administered anonymously. The survey was distributed electronically or in paper form depending on local preferences. The total response rate

[7] The *COCOPS* dataset is curated by the GESIS – Leibniz Institute for the Social Sciences and can be accessed free of restriction under the Creative Commons CC0 1.0 Universal Public Domain Dedication under Study Number ZA6599, version 1.0.3.

was 27.9%, which is relatively high given the type of population. Because parts of the questionnaire were voluntary, absolute response frequencies for individual items vary. For instance, the n = 4,495 responses were collected on politicization and n = 5,638 on managerial autonomy. The number of responses is lower for politicization because this part of the survey was voluntary for respondents if they found that they were unable to assess this matter, whereas this choice option was not available on the survey part on organizational autonomy – a topic that is relatively easy to assess by any individual member of an organization. The survey does not claim full coverage of *all* high-ranked executives in European PA but its comprehensive data can be regarded as a very good proxy for attitudes, policies, and the state of affairs in the years 2012 to 2015.

Furthermore, the data material is unique in its exclusive focus on executive leaders. One downside of this exclusivity is that – since some of the survey respondents are still in office holding powerful leadership positions in various public organizations – the data underlie very strict confidentiality requirements that prevent in-detail analyses regarding sample representativeness. More detailed information on the fieldwork in each country is documented in Hammerschmid et al. (2013). Hammerschmid et al.'s (2013) research report also documents the full questionnaire of their study on pages 53 to 70 in English translation.

3.1.1 COCOPS Survey Structure

The COCOPS survey data is very extensive and it provides quantitative data regarding public administration reforms and their impact on public organizations in Europe by exploring the perceptions, experiences, and opinions of the actors most deeply involved in the conception and implementation of these reforms. Specifically, the survey includes responses on explicit questionnaire items on *management and work practice* of the respective organizations, on the (perceived) relevance of *public sector reforms*, the impact of the *fiscal crisis*, as well as *leaders' attitudes*, *preferences*, and *personal information* (Hammerschmid et al. 2013). To this end, the survey questionnaire was developed and pre-tested in an iterative joined effort by a large international research team comprising 34 scientists associated with twelve European universities. The survey data were raised from May 2012 until April 2015 in 20 European countries (see Table 3 for further details on data collection) and is subdivided into several clusters of questionnaire items to provide rich detail on a

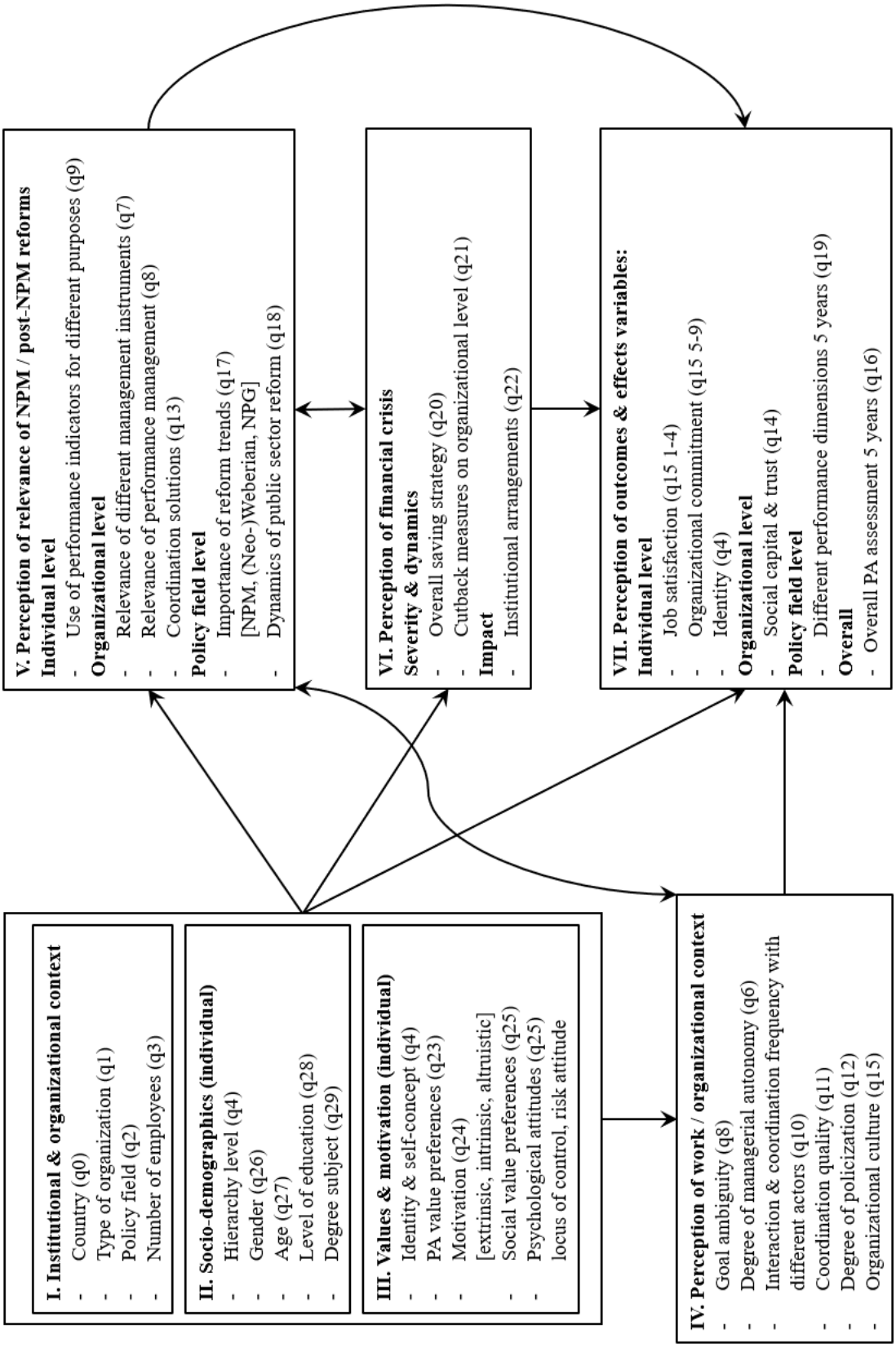
number of topics – both specific and more general. The survey comprises seven major clusters (see Figure 3), namely the

- *institutional / organizational context* (I), the
- *socio-demographics* of the individual respondents (II), his or her
- *values and motivations* in the sense of individuals' specific dispositions (III),
- individuals' perception of *work and the organizational context* (IV),
- individuals' perception of the *relevance of NPM-reforms* (V), the
- perception of the *financial crisis and austerity* (VI), and the
- perception of secondary effect variables (e.g. *politicization*) (VII).

In several countries, the national research teams added country-specific items but the current study uses only the main dataset based on the core questionnaire that was replicated in each of the partaking countries and which comprises 29 item-based questions (see Figure 3 for an overview of the COCOPS survey structure).

Specifically, cluster I includes the items *country*, the *type of organization*, the *policy area* the organization works in (for instance (higher) education), and the *number of employees*. Cluster II askes respondents to indicate the kind of *position s/he holds within the organization on the hierarchical level*, his or her *gender*, *age*, *level of education* and *degree*. Focusing on the micro-level, cluster III askes participants to *self-assess their role as public sector executives* and to indicate their *explicit attitudes towards work* and *towards their organization*. For instance, respondents were asked to indicate the degree of satisfaction they derived from work and whether they felt valued for their achievements on the job, among other items. Furthermore, factors related to individuals' *job-related motivation* were assessed in detail especially items regarding *the importance of various occupational characteristics* like interest in their work, extrinsic monetary incentives (high income), and their *locus of control*. Cluster III also comprises various items regarding participants' *innovativeness, trust in others*, *risk-savviness*, *public sector values* and *preferences when faced with value trade-offs* (NPM vs. PVO).

Figure 3: Full COCOPS survey structure



Note: Figure of survey clusters (with variable labels used in the original survey) including potential cluster relationships adapted with modifications from Hammerschmid et al. (2013).

Regarding management and work practices within respondents' specific organization (cluster IV), the survey explored the

- *degree of work autonomy* regarding typical work tasks (e.g. budget allocations, promoting staff, or strategic planning), the
- *management instruments used* (e.g. quality management systems), the
- *organizational goal clarity vis-à-vis ambiguity* (goals clearly stated, goals communicated to staff, number of goals, ease of controlling and measuring activities, the role of inputs, outputs, and processes, reward systems and clarity of sanctions for not achieving goals, politicians' use indicators for monitoring performance), the
- *use of performance indicators*, and the
- *frequency of interaction* with various external stakeholders (e.g. with politicians, administrative superiors at higher administrative levels, staff, subordinate agencies and bodies).

On the meso-level, the survey asked respondents to *characterize the culture of their organization* (cluster IV), for instance, regarding the degree to which open and honest communication was common among management and staff and to what degree constructive criticism was encouraged within their organization. Furthermore, cluster IV assessed various macro-level topics on *organization's collaboration within and across policy areas*, e.g. executive employees' view on selected statements regarding *politicization in HE public administration*, for instance whether

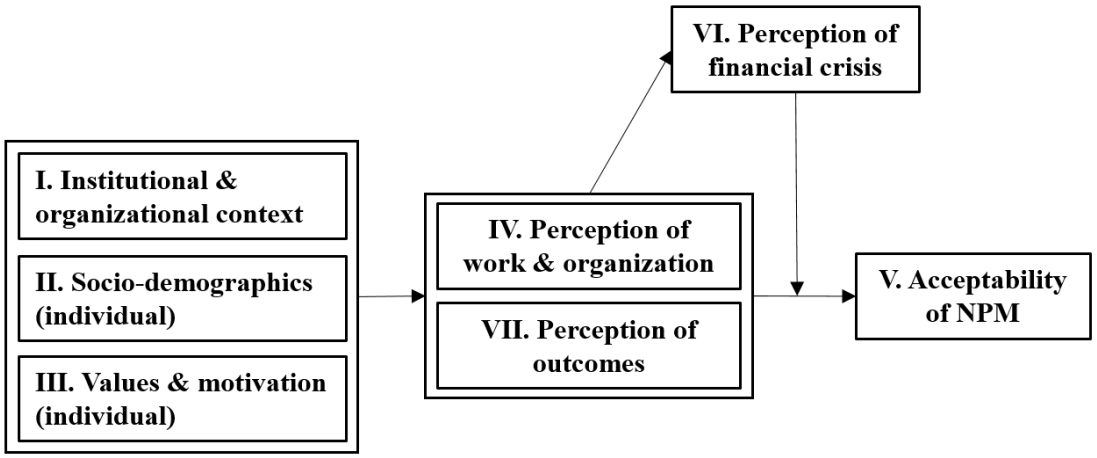
- (political) internal and external stakeholders respected the expertise and authority of senior executives, whether
- politicians regularly influenced senior-level appointments, whether
- they inferred with routine activities in those organizations,
- the degree to which internal organizational coordination was inferred by political actors and bodies, whether
- senior executives (in contrast to politicians) had factual authority to initiate reforms or new policies within their organizations, and whether
- removing issues and activities farther from politics – in respondents' individual opinion – would result in better policies.

As a central part of the survey, clusters V, VI, and VII examine issues *of public sector reform* and the consequences of the *fiscal crisis of 2008*. Respondents were asked to *assess the state* of organizations in their specific policy area and country compared with the situation 5 years ago. This issue is further elaborated by indicating the *relative importance of selected reform trends* in their own policy area, the *specific institutional design and dynamics of administration reforms conducted*, the *performance outcomes of public administration over the last 5 years on selected dimensions* (e.g. cost and efficiency, service quality, innovation, among other items), the *general approach to realize organizational savings* in response to the fiscal crisis, *specific cutback measures*, and the *effects of the fiscal crisis* (e.g. whether the power of the Ministry of Finance had increased, or whether decision making within the organization had become more centralized).

3.1.2 Survey Cluster Relationships

Based on an extensive literature review, the COCOPS research consortium derived a series of potential relationships between the various items incorporated in the survey clusters. Figure 4 provides an overview of these presumed relationships as well as the (summarized) contents of each of the seven clusters proposed by Hammerschmid et al. (2013).

Figure 4: Simplified survey structure

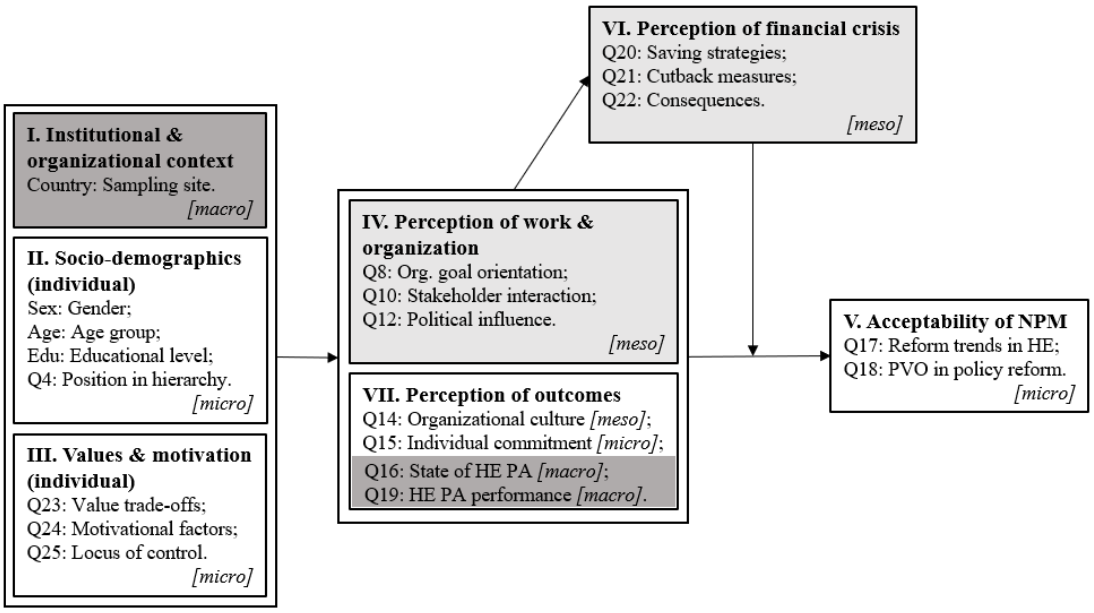


The COCOPS survey was designed in the assumption that micro-level characteristics of the individual executives have a direct or indirect effect on all aspects of PA leadership (see effects of combined clusters I, II, and III on the other clusters as

indicated by the arrows in Figure 4). This individual-centered perspective is typical for studies following the classic theory of administrative behavior as advocated by Herbert Simon (1945) who pointed out that any form of organizational behavior, strategic policy implementation, and institutional development was essentially nested in a complex and interactive network of individual choices and that it was based on behaviors of singular actors within the macro environment of their respective organization.

Consequently, these employees' individual characteristics are assumed to affect their perception of and attitudes on their immediate organizational environment and their job-related challenges (clusters IV and VII), eventually influencing their attitudes on the adequacy and the perception of the relevance of NPM-informed reforms in PA. The survey further assumes that the perceived severity and dynamics of financial austerity in the wake of the year 2008 financial and fiscal crisis (cluster VI) will be associate with both the evaluation of the state of respondents' employer organizations (cluster VII) and the acceptability of NPM as the underlying paradigm for leadership in HE in general (cluster V). This effect is assumed to be potentially accelerated by higher degrees of organizational politicization since political stakeholders can execute massive pressure on HE organizations and their executive leaders (cluster IV).

Figure 5: COCOPS variable structure by survey clusters



As a result, the COCOPS survey clusters comprise combinations of multi-level factors that are clustered rather on the basis of theoretical considerations and anecdotal narratives instead of being clearly differentiated by *macro*-level (country), *meso*-level (organization), and *micro*-level (individual) variables. Figure 5 provides an in-detail overview of COCOPS' underlying variable structure by survey clusters. Macro-level variables are displayed in dark grey shade, meso-level variables in light grey, and micro-level variables without shading.

3.2 Study variables

Based on the current state of research as presented in section 2, the current study investigates the multiple potential relationships between *HE austerity*, *increasing politicization*, and the *prevalence and acceptability of the NPM paradigm* in HE leadership and organizational decision processes. To explore the research questions postulated in the previous sections of this study, the present study focusses on specific key variables selected from the rich dataset of the COCOPS project. Table 1 provides an overview of the study variables selected for the current study by survey clusters (I to VII) and it shows into what type of study variable those questionnaire items were aggregated in the current study. Furthermore, the table reports the Cronbach's α for scale items as derived from the sample.

The following section explains how dependent (DVs), independent (IVs), and control variables (CVs) were measured. The full wording of each questionnaire item used in the current study is reported in Appendix A.2. Please note that while some measures are single items – e.g. "q28" (educational qualification) – a number of variables were created by aggregating multi-item measures that were previously validated in prior research. Aggregated measures are characterized by capital letters, for instance "Q19" which measures respondents' perception of HE sector performance today compared to the status quo five years ago.

3.2.1 Initial Model

The main goal of the current study is to explore the relationship between leaders' individual characteristics and attitudes and the perceived acceptability and prevalence

of the NPM paradigm in HE organizations in a challenging environment of politicization and austerity.

Paradigms are multifaceted socio-cognitive constructs deeply entrenched in organizations through the proxy of the individuals working at these organizations. Since all macro-level phenomena of organizational culture and organizational behavior are rooted within the individual employees, it is through individual actors' behaviors, values, and attitudes that organizations achieve their goals and are shaped towards being more embracing of the NPM- or PVO-paradigm in their processes and structures, respectively (Simon 1945; Schedler & Proeller 2000; Osborne 2010).

Table 1: Overview of selected study variables by survey cluster

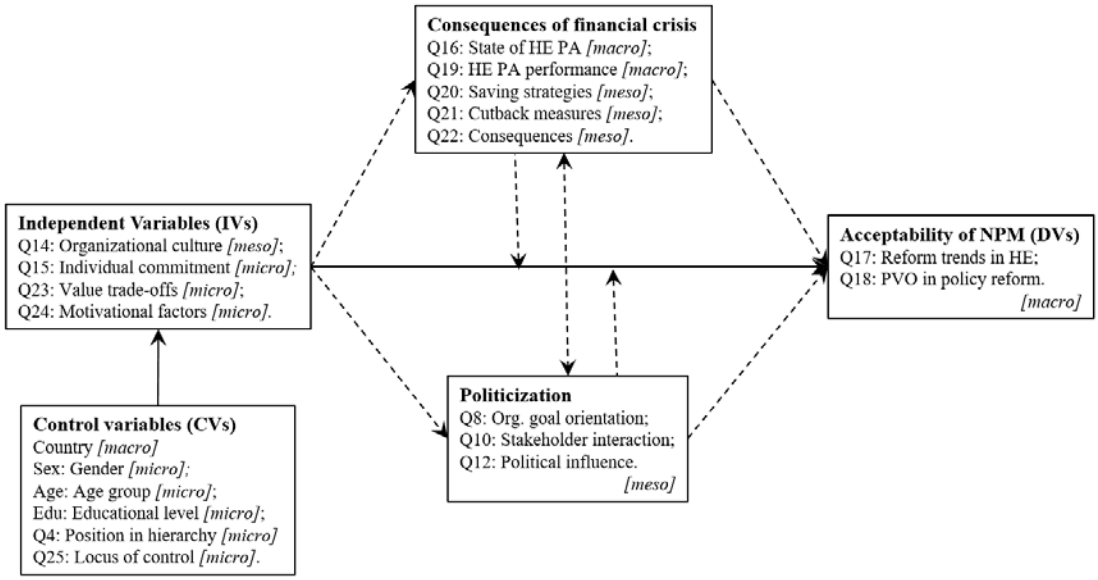
Survey cluster	Survey code	Variable label with defaults	Cronbach's α	Variable type
I	q2	Sample site		CV
II	q26	Gender, male (*n*)		CV
II	q27	Age groups (*n* in years)		CV
II	q28	Education level (*n*)		CV
II	q4	Position within organizational hierarchy		CV
III	Q23	Value trade-offs (PVO vs. NPM)	0.62	IV
III	Q24	Professional motivational factors	0.71	IV
III	Q25	Locus of control		CV
IV	Q8	Organizational goal orientation	0.74	MV
IV	Q10	Frequency of interaction with stakeholders		MV
IV	Q12	Political actors' influence on managerial decisions	0.48	MV
V	Q17	Relevance of specific reform trends in HE	0.78	DV
V	Q18	HE public value orientation in policy reform	0.75	DV
VI	Q20	Financial crisis: General saving strategies		MV
VI	Q21	Application of specific cutback measures		MV
VI	Q22	Consequences of the financial crisis		MV
VII	Q14	Organizational culture	0.95	IV
VII	Q15	Individual commitment	0.69	IV
VII	Q16	State of HE PA compared to 5 years ago		MV
VII	Q19	HE PA performance over the last 5 years	0.92	MV

Note: The table reports Cronbach's α (if applicable) as derived from the COCOPS dataset.

Consequently, the main DVs, IVs, and the potential moderators (MVs) accelerating the relationships between DVs and IVs of the present study are composite constructs nested within the individual actor, within the specific organizations those actors work for, and in macro-environmental factors such as the political climate and agendas prevalent to higher or lesser degree in their countries' HE sector.

Based on the literature review and the theoretical considerations presented in chapter 2, the initial model is hypothesized as displayed in Figure 6. The initial model of analysis includes three levels of sub-clustering – *country* (*[macro]*-level), *organization* (*[meso]*-level), and *individual* (*[micro]*-level) – to control for variance induced by the structure of the data.

Figure 6: Initial Model



Consequently, the initial statistical model for quantitative analysis is specified as follows (model I)[8]:

$$Acceptability\ of\ NPM\ [Reform\ trends\ (Q17); PVO\ in\ policy\ reform\ (Q18)] = [\beta_1 Organizational\ culture\ (Q14) + \beta_2 Individual\ Commitment\ (Q15) + \beta_3 Values(Q23) + \beta_4 Professional\ Motivation\ (Q24)] + \beta_x Individual + \varepsilon$$

Model I assumes a direct positive relationship between the acceptability of NPM, organizational culture (β_1), and individual values (β_3) and commitment and motives (β_2 and β_4) while controlling for individual differences (β_x). Furthermore, public sector austerity (β_{5i}) and HE politicization (β_{6i}) are hypothesized to potentially moderate this

[8] Implicitly, this modelling procedure assumes that country-specific differences are already incorporated within the response patters of the individual respondents. Consequently, the 18 study countries are not explicitly included as explicit cluster variables within the model by conducting multi-level analyses by country-level (β_y). Instead, OLS regressions with hetereoscedasticity-prove standard errors were estimated.

association – either as mediators, moderators, or in the form of interactions with each other (β_7) – thus leading to a second model (II) that includes interaction effects:

$$
\begin{aligned}
&Acceptability\ of\ NPM\ [Reform\ trends\ (Q17);\ PVO\ in\ policy\ reform\ (Q18)] = \\
&\quad [\beta_1 Organizational\ culture\ (Q14) + \beta_2 Individual\ Commitment\ (Q15) + \\
&\quad \beta_3 Values(Q23) + \beta_4 Professional\ Motivation\ (Q24)] + \\
&\quad \beta_{5i}[Financial\ crisis\ (Q16; Q19; Q20; Q21; Q22)] + \\
&\quad \beta_{6i}[Politicization\ (Q8; Q10; Q12)] + \beta_7[Financial\ crisis \times Politicization] + \\
&\quad \beta_x Individual + \varepsilon
\end{aligned}
$$

RQ1 is formulated to cover two specific topics of interest: First, "*are HE leaders in Europe mainly driven by NPM-related values*" and, second, "*how prevalent are NPM-related value trade-offs in the operative processes of HE leadership in Europe?*" The quantitative survey data responds specifically to the first topic of interest of RQ1 by measuring respondents' *individuals' value trade-offs* (Q23) and the *motivational factors* (Q24), which influence their leadership styles. Furthermore, the data provides explicit information relevant for investigating RQ1's second topic of interest regarding HE leaders' perception of the prevalence of specific NPM-related policies, i.e. specific *saving strategies* (Q20), *cutback measures* (Q21), and the *consequences of these cutback measures* (Q22).

The quantitative data is valuable in exploring **RQ2**, which asks "*how strong is the political influence of external stakeholders on HE management on the top level of leadership*" and "*to what degree does political involvement result in the design of HE policy reforms?*". Both topics can be investigated by, first, focusing on the descriptive results of the COCOPS survey data and by, second, investigating the relationship between *organizational goal orientation* (Q8), *external stakeholder interaction* (Q10) and *political influence* (Q12) on the acceptability of NPM (DVs: Q17 and Q18) in the multi-variate model [main model potential moderator effects].

RQ3 asks "*how do HE leaders evaluate the relevance of NPM-related reform trends in HE?*". The postulated model also responds specifically to RQ3 by testing the relationship between respondents' *individuals' value trade-offs* (Q23), the *motivational factors* (Q24) that drive respondents' leadership styles with the *acceptability of the NPM-related reform trends in HE* (Q17) and the *prevalence of PVO in HE policy reform* (Q18) [main model direct axial relation in Figure 6].

Furthermore, the quantitative model explores the dynamics of the aforementioned presumed associations between IVs and DVs by investigating the role of specific NPM-related policies [specific *saving strategies* (Q20), *cutback measures* (Q21), and the *consequences of these cutback measures* (Q22) and *organizational goal orientation* (Q8)] allowing to determine their perceived relevance for HE.

The next sections present an in-detail description of the measurement procedures of each of the variables used in the statistical models, including measures of construct reliability and factor construct validity if applicable.

3.2.2 Dependent Variables (DVs): Acceptability of NPM

Reform trends in HE *[macro]*. **Q17** asked respondents to rate how important 15 typical reform trends were in their policy area (i.e. HE). The individual Likert-type scale items ranged from 1 = "not at all [important]" to 7 = "to a large extent [important]" (see Appendix A.2 for full detail). As a composite measure based on geometrical mean scores, Q17 creates a robust and reliable scale (Cronbach's $\alpha = 0.78$, AIC = 0.58, KMO = 0.84; $M = 3.84$, $SD = 0.96$, min. = 1, max. = 7) that can be used as a singular variable.

PVO in policy reform *[macro]*. With eleven Likert-type scale items ranging from 1 to 10, construct **Q18** asked respondents to indicate how reform policies are – in their opinion – typically conducted in the HE sector. Although not originally intended as a scale, these eleven items form a robust construct (Cronbach's $\alpha = 0.75$, AIC = 1.25, KMO = 0.79; items 2, 3, and 6 reversed). Consequently, the items were geometrically sum-scored to form the IV Q18. Higher score values (range: 1 to 10) indicate a higher tendency to follow reforms that are more strongly related to the paradigm of PVO while score values below the scale median of 5.5 denote a higher tendency to implement reforms related to the NPM paradigm. The resulting variable is normally distributed across the pooled dataset (Shapiro-Wilk: W (559) = 0.994, $p = 0.036$), a prerequisite for conducting regression analysis.

3.2.3 Independent Variables (IVs)

Organizational culture *[meso]*. **Q14** asked survey participants to describe their institution's organizational culture based on nine seven-point Likert-type items

focusing on typical employee behavior. Items range from 1 = "fully disagree" to 7 = "fully agree" and are presented in Appendix A.2 in full detail. As a scale measure, Q14 is related to prior research by Nahapiet and Ghoshal's (1998) and Leana and Pil's (2006) dimensions of organizational social capital. Q14 creates a highly reliable construct that was aggregated by geometrical mean sum-scaring to a robust independent IV valid for regression analysis (Cronbach's $\alpha = 0.95$, AIC = 1.36, KMO = 0.95), $M = 4.92$, $SD = 1.24$, min. = 1, max. = 7; Shapiro-Wilk: W (523) = 0.992, $p = 0.004$).

Individual commitment *[micro]*. **Q15** measured respondents' attitudes toward work in general and while working at their organization specifically. This item focused on the factors that respondents regarded as most important for their personal motivation on nine different dimensions. These Likert-type items are based on Allen and Meyer's (1990) study on different forms of organizational commitment and range from 1 = "fully disagree" to 7 = "fully agree" (see Appendix A.2 for more detail). Q15 creates a reliable geometrically sum-scored, composite measure (Cronbach's $\alpha = 0.69$, AIC = 0.60, KMO = 0.76), M = 3.93, SD = 1.03, min. = 1, max. = 6.63). Q15 is normally distributed across the pooled dataset comprising all country samples selected for the present study (tested with Shapiro-Wilk: W (559) = 0.994, $p = 0.036$), hence allowing the variable to be used in regression analyses.

Value trade-offs *[micro]*. Question **Q23** asked respondents to perform work- and agency-related value trade-offs between values traditionally related to the PVO paradigm (left side of item range) and those values traditionally related to the NPM paradigm (right side of item range); item 4 reversed. Specifically, the measure asked: *"Public services often need to balance different priorities. Where would you place your own position?"*, thus putting special focus on respondents' individual position to reveal their personal value orientation. The six Likert-type items create a continuum ranging from 1 to 7. As a composite attitude-based measure, Q23 is adequately robust (Cronbach's $\alpha = 0.62$, AIC = 0.61; KMO = 0.59; $M = 3.27$, $SD = 0.91$, min. = 1, max. = 6.32).

Motivational factors *[micro]*. In **Q24**, respondents indicated how important nine specific value-related aspects were for the specific position they held, thus assessing individuals' professional value orientation (NPM vs. PVO) indirectly. The validity of

this assessment was tested with a confirmatory factor analysis (*varimax* rotated with Kaiser normalization (1958) for item correlation), which confirmed high internal construct validity. The items are reported in detail in Appendix A.2 and range from 1 = “not important at all” to 7 = “very important”.

Prior to factor analysis, Bartlett’s test for sphericity was used to test whether factor items were inter-correlated which is a prerequisite for factor analyses. Table 2 reports the results of the factor analysis (after rotation), the unique variances for each item and their respective Kaiser-Meyer-Olkin (KMO) measures of sample adequacy. A KMO mean value of KMO = 0.71 indicates high sample adequacy (Kaiser 1974), which was achieved for the majority of items.

Table 2: Results of factor analysis for a two-factor model of Q24

	Factor analysis			
Factor item	Factor 1	Factor 2	U	KMO
Interesting work	.18	**.36**	.84	.72
High income	**.58**	.06	.67	.69
Help other people	.14	**.53**	.70	.60
Job security	**.42**	.11	.81	.67
Room to make decisions	.26	**.46**	.72	.76
Opportunities for promotion	**.57**	.26	.61	.76
Useful for society	.04	**.65**	.57	.60
Flexible working hours	**.44**	.18	.78	.80
Status	**.53**	.15	.69	.80
Eigenvalue	1.42	1.18		
Bartlett Chi² (36)	786.94			
p	.000			
Cronbach’s α	.706			

Graphical analysis of the screeplot of eigenvalues reveals that a maximum of four factors could be extracted but that two factors were optimal (see Appendix A.3 for full detail). As expected from the analysis of the correlation matrix of the nine items, the derived factor model scored very high and the significant Chi²-testing result of Bartlett’s test (Chi² (36) = 786.94, $p < 0.000$) indicates that factor items are strongly interrelated and should load onto the same underlying factor(s), creating a robust factor model.

Item uniqueness (U) is a measure of the percentage of variance of the measure that is not explained by the common factors. Values of U = 0.6 are considered as high. In this variable, uniqueness values range from U = 0.57 to 0.84. Since items are all close to

or above this threshold, the uniqueness factors indicate that all items measured are actually relevant to explain the variance observed and that no item should be excluded from the factor model. Furthermore, all items are in a relatively stable and narrow range regarding their individual factor loadings onto their respective latent factors, which further substantiates the model's internal validity in measuring two distinct underlying constructs (i.e. factors). Because of the high inter-correlation (Appendix A.3) and the strong factor model fit, no item was excluded. The average interitem covariance is AIC = 0.327, the average interitem correlation AICor = 0.210. The results of the factor analysis reveal that the nine items significantly load onto two independent factors, which are highly discriminant, indicating high internal and external construct validity of the variable Q24 if subdivided into those two components (**Q24$_{NPM}$** and **Q24$_{PVO}$**).

The items *high income*, *job security*, opportunities for promotion, *flexible working hours*, and *status* all load onto factor 1, while the items *interesting work*, the *opportunity to help other people*, *room to make decisions* (i.e. managerial discretion), and *doing something useful for society* all load onto factor 2. All factor 1-related items are classic descriptions for extrinsic incentives of job-related motivation, while all factor 2-associated items are related to an intrinsic, attitude and value-driven form of motivation (Perry & Porter 1982; Vallerand 1997). Hence, it is valid to create a sub-variable named **Q24$_{NPM}$** by taking the geometric mean of items 2, 4, 6, 8, and 9 to describe the relevance of externally stimulated factors of work-related motivation for study respondents, while the geometric mean of items 1, 3, 5, and 7 is labelled **Q24$_{PVO}$** to create a sub-variable indicating the relevance of internally stimulated factors of work-related motivation. In accordance to the current state of research (Perry et al. 2010; Van de Walle et al. 2015; Ritz et al. 2016), Q24$_{NPM}$ is assumed to being strongly associated with the NPM paradigm, while Q24$_{PVO}$ is assumed to be strongly associated with the PVO-paradigm. The two resulting independent variables Q24$_{NPM}$ and Q24$_{PVO}$ are normally distributed across the pooled data of all country samples [tested with Shapiro-Wilk; Q24$_{NPM}$: W (529) = 0.990, p = 0.002; Q24$_{PVO}$: W (531) = 0.948, p = 0.000] and, hence, allow for conducting regression analyses.

3.2.4 Control variables (CVs)

Country *[macro]*. The variable **q2** contains binary indicators (1 = "applies" and 0 = "does not apply") for each country that was part of the sampling process. These data indicators are discriminatory in the sense that there is no overlap in the sub-sample populations and each response is nested exclusively within one single country. Q2 is used as an initial variable to exclude countries with small sample sizes insufficient for reliable quantitative analysis (Student 1908).

Socio-demographics and hierarchy *[micro]*. The current study uses a number of socio-demographic and work-related covariates to control for response variance induced on the level of the individual respondents by including respondents' *gender* (**q26**), *age group* (**q27**), and *highest educational qualification* (**q28**) in the multi-variate regression models as controls (see Appendix A.2 for more detail). Furthermore, respondents' *position within the hierarchical structure* of their organization was included in the models (**q4**).

Locus of control *[micro]*. **Q25** measured respondents' locus of control, i.e. the degree to which individuals attribute personal failure and success to their own behavior vis-à-vis environmental and situational factors that lie beyond their individual control. Q25 is based on the Rotter score as adapted by Carpenter and Seki (2006). The scale measure consists of eight seven-point Likert-type items ranging from 1 = "fully disagree" to 7 = "fully agree". The scale is aggregated by sum-scoring the geometric means of all eight items while taking into account that item five ("I avoid doing anything that might upset the status quo.") is reversed. For the current sample, this scale forms a sufficiently reliable measure (Cronbach's $\alpha = 0.58$, AIC = 0.29; KMO = 0.68). Variable Q25 is normally distributed across the pooled dataset [Shapiro-Wilk: $W(501) = 0.980$, $p = 0.000$] and can, thus, be used for regression analysis.

3.2.5 Context: Consequences of the financial crisis (potential MVs)

State of HE PA *[macro]*. **Q16** is a single item asking respondents to indicate the state of HE PA at the time of the survey (between years 2012 to 2015, respectively) compared with the perceived state of HE PA five years ago, i.e. in the high tides and/or aftermaths of the financial crisis. Q16 ranges from 1 = "worse" to 10 = "better" and is

normally distributed across the pooled sample (Shapiro-Wilk: W (543) = 0.979, p = 0.000), allowing for regression analyses.

HE PA performance *[macro]*. **Q19** measured respondents' perception of HE sector performance today compared with the status quo five years ago with 15 seven-point Likert-type items regarding a variety of HE policy areas. These items range from 1 = "deteriorated significantly" to 7 = "improved significantly", consequently, score values larger than the mathematical item median score of 3.5 indicate that respondents perceived that HE institutions' performance regarding the respective HE policy area improved over the last five years. Although originally not intended as a scale measure when developed by the COCOPS research consortium, these 15 items form a very robust and highly reliable construct variable that is normally distributed across pooled responses (Cronbach's α = 0.92, AIC = 0.79; KMO = 0.92; Shapiro-Wilk: W (496) = 0.981, p = 0.000).

Saving strategies *[meso]*. Item **Q20** asked survey participants to tick individual boxes (binary indicators) to indicate whether their organization implemented nine specific approaches to realize savings in response to the financial crisis. The individual items are reported in Appendix A.2.

Cutback measures *[meso]*. If respondents indicated that specific approaches had been realized in Q20, **Q21** asked for more details regarding the degree to which these up to nine specific cutback measures were implemented on a seven-point scale ranging from 1 = "not at all" to 7 = "to a large extent".

Consequences *[meso]*. Furthermore, **Q22** asked participants to report the perceived consequences of the financial crisis regarding an increase in political influence on their organization (six items in total, reported in detail in Appendix A.2, with items five and six reversed; seven-point Likert-type scale ranging from 1 = "strongly disagree" to 7 = "strongly agree").

3.2.6 Context: Politicization (potential MVs)

Organizational goal orientation *[meso]*. Strong goal orientation is an indicator for the de-facto prevalence of the NPM paradigm in respondents' respective HE organizations. The COCOPS survey comprises nine Likert-type items ranging from 1

= “strongly disagree” to 7 = “strongly agree” (item 5 reversed) on goal vs. client orientation (**Q8**). Pairwise correlation analysis revealed that these nine items are all significantly correlated with each other (all $p < 0.000$) and are, consequently, geometrically sum-scored to create the construct *goal orientation* (CV). The validity of this aggregation procedure was tested with a confirmatory factor analysis (*varimax* rotated with Kaiser normalization (1958) for item correlation), the outcome of which confirmed high internal construct validity. The Kaiser-Meyer-Olkin (KMO = 0.75) measure of sample adequacy indicates high sample adequacy (Kaiser 1974). Prior to factor analysis, Bartlett’s test for sphericity was conducted to test whether factor items were inter-correlated which is a prerequisite for factor analysis. As expected from the analysis of the correlation matrix of the nine items, of the factor loadings, and of the screeplot of eigenvalues (see Appendix A.4 for more detail), the derived factor model achieves a relatively high level of average interitem covariance (AIC = 0.62; Bartlett’s Chi^2 (36) = 1,348.60, $p < 0.000$) and high scale reliability (Cronbach’s $\alpha = 0.75$), indicating high external construct validity if the nine items are aggregated into one single variable (eigenvalue: factor 1 = 2.99; factors 2 to 9 ≤ 0.528). Q8 is quasi-normally distributed (Shapiro-Wilk: W (571) = 0.995, $p = 0.059$) which still allows for regression analysis but demanding caution in interpretation.

Stakeholder interaction *[meso]*. **Q10** asked respondents to indicate how frequently they typically interacted with a number of relevant internal and external political and administrative actors and institutions. The categorical values range from 1 = “never” to 6 = “daily” (items 1, and 3 to 6 internal stakeholder interactions; items 2, and 7 to 14 external stakeholder interactions). In the assumption that a relatively higher frequency with external actors might influence decision makers’ style of management in favor of the NPM paradigm, the items of Q10 were used to develop two indicators corrected for relative frequency and for the number of items in each indicator by using the sum-scored geometric means of the two constructs. From the relation of these two frequency constructs – i.e. “weighted external interaction frequency” divided by the “weighted internal interaction frequency” – the weighted percentage of external to internal interaction frequency is deduced, forming the variable $\mathbf{Q10_{rel}}$.

Political influence *[meso]*. In construct **Q12**, respondents were asked to rate the influence of political actors on managerial decision making in respondents’

organization regarding five dimensions (see Appendix A.2 full details on the individual items). Those Likert-type items range from 1 = "fully disagree" to 7 = "fully agree" and create a sufficiently reliable construct (Cronbach's α = 0.48, AIC = 0.55, KMO = 0.54), *M* = 3.50, *SD* = 0.98, min. = 1.32, max. = 5.93).

4 FINDINGS

The findings section is separated into two main sections. Section 4.1 presents the descriptive analysis of the dataset and sample statistics providing both country sample details and detailed reporting of individual variable item outcomes before aggregation for correlation analysis of the full measures. Section 4.2 reports the findings of the main analyses using correlation-based multivariate heteroscedasticity-robust regression modelling for hypotheses testing as well as post-hoc explorative analyses on interaction effects.

4.1 Descriptive Analysis

4.1.1 Sample statistics and control variables

The full dataset comprises responses by *N* = 7,312 top-level executives, *n* = 631 of which are actively involved in education.[9] Table 3 provides an overview of the data characteristics by country sub-samples regarding frequencies, and the period of data collection (GESIS 2015). The COCOPS survey includes data of in total 21 countries. For the present study, Belgium (*n* = 1), Italy (*n* = 9), and Poland (*n* = 2) were excluded from the quantitative analysis because those country samples were substantially too small for quantitative analysis (de Winter 2013).

Consequently, the reduced database consists of *n* = 619 responses of executives nested within 18 European countries (see Table 3). Table 4 presents the individual-level characteristics of the pooled sample (*N* = 619) comprising HE executives from all 18 countries. Collectively, the data were raised between May 2012 and April 2015. It is

[9] Please note that in some countries parts of the questionnaire were made voluntarily in order to increase response rates. Consequently, the frequencies of responses (*n*) vary between the different variables and are, hence, reported explicitly with each item.

important to note that personal questions regarding respondents' gender, age, and education were voluntary. Consequently, the percentages and frequencies (*n*) of the following descriptive statistics do not necessarily add up when compare to the full data set of *N* = 619 responses.

Table 3: Details of Country Subsamples

Country	**Data collection**	***N*** [a]	***n*** [b]
Austria	13.11.2012 – 07.12.2012	493	102
Belgium	05.06.2012 – 31.07.2012	65	1
Croatia	17.02.2014 – 28.03.2014	176	10
Denmark	18.11.2013 – 18.12.2013	147	14
Estonia	01.06.2012 – 16.07.2012	318	16
Finland	17.02.2014 – 09.03.2014	703	68
France	23.05.2012 – 22.06.2012	587	51
Germany	25.05.2012 – 29.06.2012	445	36
Hungary	08.06.2012 – 06.07.2012	250	12
Iceland	18.02.2014 – 10.03.2014	200	47
Ireland	25.09.2013 – 28.10.2013	375	31
Italy	01.06.2012 – 16.07.2012	172	9
Lithuania	13.05.2013 – 10.06.2013	432	17
The Netherlands	12.07.2012 – 01.11.2012	196	16
Norway	07.06.2012 – 15.10.2012	334	30
Poland	23.03.2015 – 30.04.2015	170	2
Portugal	15.11.2012 – 28.02.2013	296	29
Serbia	03.06.2013 – 15.08.2013	880	25
Spain	04.06.2012 – 15.10.2012	297	19
Sweden	04.11.2013 – 09.12.2013	523	73
United Kingdom	11.06.2012 – 27.07.2012	253	23
Total	23.05.2012 – 30.04.2015	7,312	631

Notes: [a] all policy areas; [b] education only. Countries with n < 10 responses (i.e. Belgium, Italy, and Poland) were excluded from the main analysis; survey item variable code: "country".

The pooled sample is relatively dominated by **male** respondents (q26) *n* = 337 (61.3%) who are predominantly in the **age range** (q27) of 46 to 65 (*n* = 431; 77.5%). This makes sense since the COCOPS project revolves around investigating (senior) executives' job-related opinions and behaviors and, in most countries, it is obligatory to undergo a long-term training process within the respective HE organization in order to be awarded or voted into an executive position. Consequently, only few respondents are 35 years old or younger (*n* = 20; 3,6%) since people in this age group might not yet formally qualify for the positions addressed by the COCOPS project and very few respondents are older than 65 (*n* = 3; 0.5%) because the age of 65 is the traditional age of retirement in most European countries' public sectors. 28.8% (*n* = 178) of

respondents work at the top **hierarchical level** of their organization, 37.8% (*n* = 234) at the second and 28.6% (*n* = 177) on the third-tier hierarchical level (q4).

Furthermore, the pooled sample consists of highly educated individuals. Of all respondents who chose to reply to the **educational survey** (q28), 31.4% (*n* = 170) hold a Ph.D. or equivalent, a further 56.8% (*n* = 307) received postgrad education at the level of a master's degree and the remaining 11.8% (*n* = 64) at least received graduate education on the level of a bachelor's degree. As expected, the pooled HE sample of COCOPS is not representative for the general population of Europe but it does represent a unique and complete survey of all current executive leaders in European public sector HE.

Table 4: Individual statistics: Sample description

Code & Variable	**Min.**	**Max.**	**% (*n*)**
q26 Gender (*N* = 550)**, male (*n*)**[a]			61.3% (337)
q27 Age groups (*N* = 556)**, (*n* in years)**[a]			
35 or less			3.6% (20)
36 – 45			18.5% (102)
46 – 55			41.7% (232)
56 – 65			35.8% (199)
66 or older			0.5% (3)
q28 Education level (*N* = 541)**, (*n*)**			
Graduate degree (BA level)			11.8% (64)
Postgraduate degree (MA level)			56.8% (307)
PhD/doctoral degree			31.4% (170)
q4 Position within organization (*N* = 589)			
Other			4.8% (30)
Third hierarchical level			28.6% (177)
Second hierarchical level			37.8% (234)
Top hierarchical level			28.8% (178)
Q25 Locus of control (*N* = 501)	**1.36**	**6.87**	**4.68 ± 0.76**
I believe that success depends on ability rather than luck	1	7	5.65 ± 1.32
I like taking responsibility for making decisions	1	7	5.77 ± 1.75
I make decisions and move on	1	7	5.91 ± 1.16
Being creative and thinking up new ideas is important to me	1	7	6.04 ± 1.10
I avoid doing anything that might upset the status quo	1	7	2.51 ± 1.51
Being successful is very important to me	1	7	5.13 ± 1.47
I like to take risks	1	7	4.51 ± 1.40
Believe that most people can be trusted	1	7	5.26 ± 1.43

Note: *N* = 619; items reported with proportions (%) and frequencies (*n*) or with means and standard deviations (*M* ± *SD*), respectively.

In contrast to typical anti-public stereotypes, the sample score low on risk avoidance and status-quo bias. They clearly perceive themselves as the main locus of control (**Q25**: *M* = 4.68; *SD* = 0.76), scoring especially high on the scale items that involve innovativeness, creativity, and responsibility in managerial decision making (see Table 4).

4.1.2 Independent variables

The sample respond that their organizations generally provided a positive and collegial work environment for their staff (**Q14**: *M* = 4.92; *SD* = 1.24) and characterize their organizations' cultures as open societies in the sense of Gebert (1991). The ratings on collegial trust and communicational honesty are especially high.

The sample report above-average individual motivation regarding their work (**Q15**: *M* = 3.93; *SD* = 1.03), gaining a high sense from satisfaction from their work especially since they feel valued for their performance as an employee; see Table 5. This finding corresponds with prior research by Shin & Jung (2013) who found that European professionals in HE hold above-average satisfaction levels compared worldwide because they enjoy particularly high social reputation from their position in HE. Interestingly, respondents do not agree that "things were better in the days when people stayed with one organization for most of their careers" (*M* = 2.46; *SD* = 1.58) which indicates that the classical long-term oriented career-based system of employment in the public sector is regarded as rather outdated and far less motivating than satisfying tasks at work.

Asked for their personal preference regarding job-related value tradeoffs (PVO- vs. NPM-related concepts), the sample respond with mixed results. Figure 7 presents violin plots for each value trade-off item of **Q23**. Violin plots are modifications of the classic box plot adding the estimated kernel density to the summary statistics typically displayed by box plots. The circles mark the median of the data and the interquartile range with spikes extending to the upper- and lower-adjacent values (Hintze & Nelson 1998). As a categorical seven-point scale, the scale median is set at point four. The descriptive analysis of each item (based on *M* and *SD*) reveals that – with the only exception of item four ("Following rules vs. achieving results") – the sample prefer values traditionally associated with the paradigm of PVO (Q23: *M* = 3.27; *SD* = 0.91).

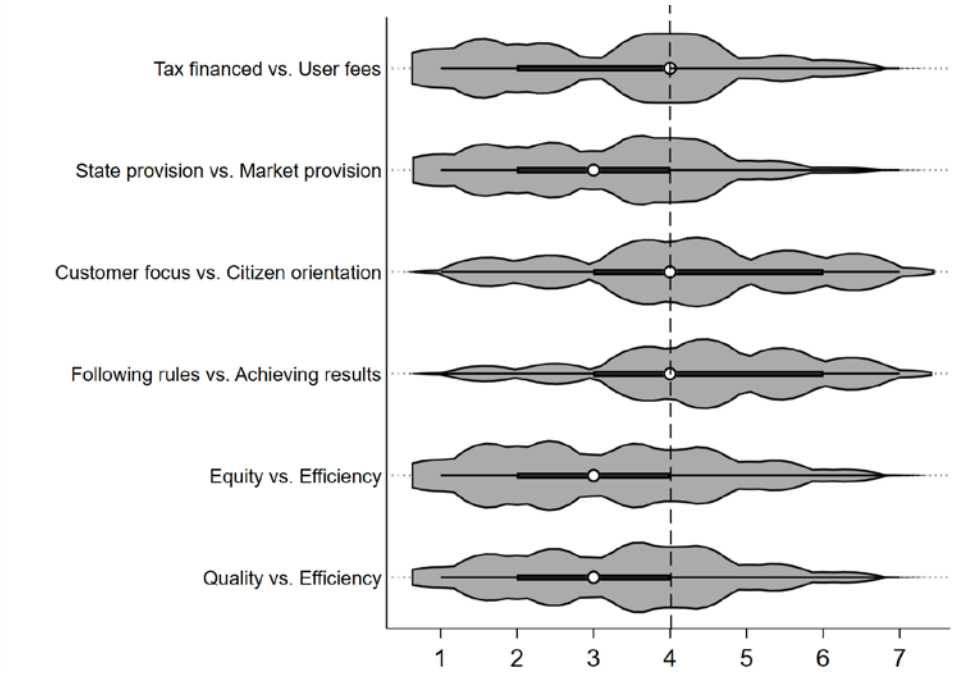
Table 5: Individual statistics: Motivation and behavior within organization

Code & Variable	Min.	Max.	M ± SD
Q14 Organizational culture (*N* = 560)	**1**	**7**	**4.92 ± 1.24**
Engage in open and honest communication with one another	1	7	5.21 ± 1.34
Share and accept constructive criticisms without making it personal	1	7	4.70 ± 1.37
Willingly share information with one another	1	7	5.11 ± 1.34
Have confidence in one another	1	7	4.99 ± 1.37
Have a high team spirit	1	7	4.95 ± 1.48
Are trustworthy	1	7	5.54 ± 1.27
Share the same ambitions and vision for the organization	1	7	4.91 ± 1.41
Enthusiastically pursue collective goals and mission	1	7	4.79 ± 1.45
View themselves as partners in charting the organization's direction	1	7	4.65 ± 1.56
Q15 Individual commitment (*N* = 559)	**1**	**6.63**	**3.93 ± 1.03**
I get a sense of satisfaction from my work	1	7	5.72 ± 1.31
I feel valued for the work I do	1	7	5.34 ± 1.51
I regularly feel overloaded or unable to cope	1	7	3.25 ± 1.88
I would recommend it as a good place to work	1	7	5.38 ± 1.51
I really feel as if this organization's problems are my own	1	7	4.31 ± 1.92
I would be very happy to spend the rest of my career with this organization	1	7	4.71 ± 1.88
It would be very hard for me to leave my organization right now, even if I wanted to	1	7	4.19 ± 2.00
I was taught to believe in the value of remaining loyal to one organization	1	7	4.31 ± 1.97
Things were better in the days when people stayed with one organization for most of their career	1	7	2.46 ± 1.58
Q23 Value trade-offs (PVO vs. NPM)	**1**	**6.32**	**3.27 ± 0.91**
Tax financed vs. User fees (*n* = 512)	1	7	3.24 ± 1.60
State provision vs. Market provision (*n* = 530)	1	7	3.14 ± 1.45
Customer focus vs. Citizen orientation (r) (*n* = 526)	1	7	4.13 ± 1.78
Following rules vs. Achieving results (*n* = 535)	1	7	4.30 ± 1.67
Equity vs. Efficiency (*n* = 532)	1	7	3.29 ± 1.61
Quality vs. Efficiency (*n* = 535)	1	7	3.43 ± 1.53
Q 24 Individual professional value orientation			
Interesting work (*n* = 540)	1	7	6.54 ± 0.76
High income (*n* = 539)	1	7	5.10 ± 1.12
Opportunities to help other people (*n* = 535)	1	7	5.25 ± 1.34
Workplace security (*n* = 539)	1	7	5.21 ± 1.38
Room to work independently and make decisions (*n* = 537)	1	7	6.05 ± 1.03
Good opportunities for advancement (*n* = 537)	1	7	5.34 ± 1.29
Doing something that is useful to society (*n* = 537)	1	7	6.10 ± 1.03
Working time flexibility (*n* = 536)	1	7	4.95 ± 1.67
Status (*n* = 533)	1	7	4.41 ± 1.55

Note: Items reported with geometric means and standard deviations (M ± SD); *r* = reversed item.

Survey respondents prefer HE institutions to be tax financed instead of being funded by user fees (*M* = 3.23; *SD* = 1.60); state provision over market provision (*M* = 3.14; *SD* = 1.45), citizen orientation over customer focus (*M* = 4.13; *SD* = 1.78), achieving results over following rules (*M* = 4.30; *SD* = 1.67); and both equity (*M* = 3.29; *SD* = 1.61) and quality over efficiency (*M* = 3.43; *SD* = 1.53).

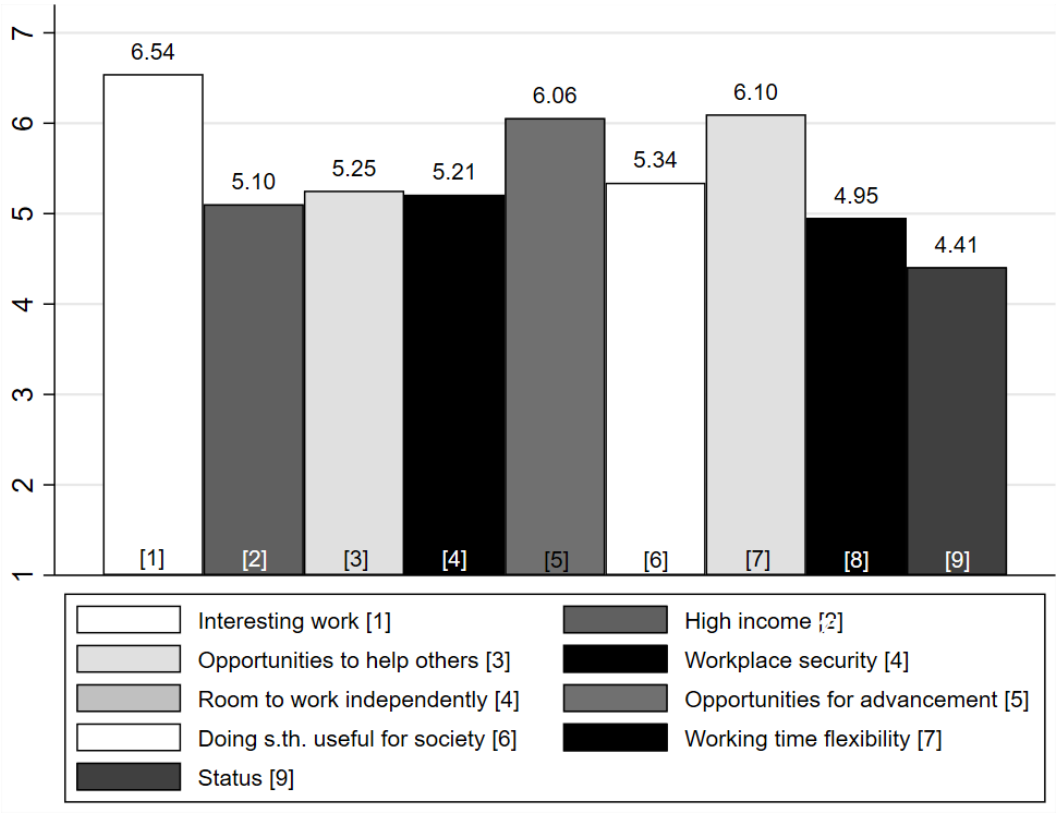
Figure 7: **Individual professional value trade-off preferences (Q23)**



Note: Violin plots of summary statistics; item four ("Customer focus vs. Citizen orientation") reversed. Shaded areas indicate kernel densities of responses; circles mark response medians; black bars indicate interquartile ranges of responses; dashed line indicates scale median.

This finding corresponds well with respondents' explicit expression of their professional motivational orientation (**Q24**) as displayed in Figure 8: The sample report that they value work-related factors that are typically related to the concept of intrinsic motivation as relatively more importantly than factors typically associated with the concept of external motivation. Specifically, high-level employees in HE put the highest importance on having *interesting work* (*M* = 6.54; *SD* = 0.76), *doing something useful for society* (*M* = 6.10; *SD* = 1.03) and having *room to work independently to use their managerial discretion* (*M* = 6.06; *SD* = 1.03), a concept closely related to the perception of being a trusted employee valued for his/her expertise (see also Q15).

Figure 8: **Individual professional motives (Q24)**



Note: Items related to intrinsic motivation in light shades; items related to extrinsic motivation in dark shades. Bars labelled with means (*M*).

While the intrinsic motivation of helping other *people* specifically is also important, it is not standing out from the equally above-average motivating extrinsic factors such as high income, workplace security, opportunities for professional advancement, and working hours flexibility, which all range around *M* = 4.95–5.34 (*SD* = 1.12–1.67) on a 7-point scale. It is important to acknowledge that the sample sharply differentiate between working pro-actively to improve society as a whole in comparison to helping individual people. Surprisingly, their professional impact on society is valued much more highly. In contrast, the extrinsic factor of individual status created by their professional position is the least important factor (*M* = 4.41; *SD* = 1.55).

In summary, the descriptive results of Q23 and Q24 provide a first response to **RQ1's first topic of interest** by revealing that top-level leaders in European HE are predominately driven by PVO-related factors of motivation and that they do not advocate the neoliberal values associated with the NPM paradigm on the micro-level.

4.1.3 Dependent variables: Acceptability of NPM

Figure 9 and Table 6 present the results of **Q17**, which asked respondents to indicate the importance of specific reform trends in HE organizations. In summary, respondents put slightly above-average importance onto these trends (*M* = 3.84; *SD* = 0.96) but the results are mixed: Q17 reveals that HE top-level executives especially point out that transparency and open government (*M* = 5.21; *SD* = 1.73) as well as focusing on outcomes and results (*M* = 5.32; *SD* = 1.50) were the most important reform trends currently faced by their sector.

Table 6: Country-level statistics: State of HE PA

Code & Variable	Min.	Max.	M ± SD
Q17 Importance of reform trends in HE PA (*N* = 508)	**1**	**7**	**3.84 ± 0.96**
Public sector downsizing	1	7	4.66 ± 2.03
Citizen participation methods/initiatives	1	7	3.83 ± 1.77
Creation of autonomous agencies or corporatization	1	7	3.30 ± 1.93
Contracting out	1	7	3.67 ± 1.93
Focusing on outcomes and results	1	7	5.32 ± 1.50
Extending state provision into new areas	1	7	3.32 ± 1.77
Treatment of service users as customers	1	7	4.69 ± 1.81
Collaboration among different public sector actors	1	7	5.17 ± 1.51
Internal bureaucracy reduction / cutting red tape	1	7	4.89 ± 1.79
Flexible employment	1	7	4.43 ± 1.85
Privatization	1	7	2.44 ± 1.61
Digital or e-government	1	7	5.09 ± 1.56
External partnerships and strategic alliances	1	7	4.61 ± 1.73
Mergers of government organizations	1	7	3.87 ± 1.90
Transparency and open government	1	7	5.21 ± 1.73
Q18 HE public value orientation in policy reform (*N* = 523)	**1.43**	**9.05**	**4.21 ± 1.05**
Top down / Bottom up	1	10	3.67 ± 2.52
Consistent / Inconsistent	1	10	5.74 ± 2.41
Comprehensive / Partial	1	10	5.70 ± 2.47
By politicians / By senior executives	1	10	4.56 ± 2.51
Crisis and incident driven / Planned	1	10	5.03 ± 2.47
Substantive / Symbolic	1	10	5.12 ± .248
Contested / Supported by unions	1	10	4.22 ± 2.16
Cost-cutting / Service improvement	1	10	4.11 ± 2.60
No / High public involvement	1	10	4.37 ± 2.35
Unsuccessful / Successful	1	10	5.35 ± 2.11
Too much / Not enough	1	10	5.37 ± 2.34

Note: Items reported with geometric means and standard deviations (M ± SD).

Figure 9: Importance of reform trends in HE organizations (Q17)

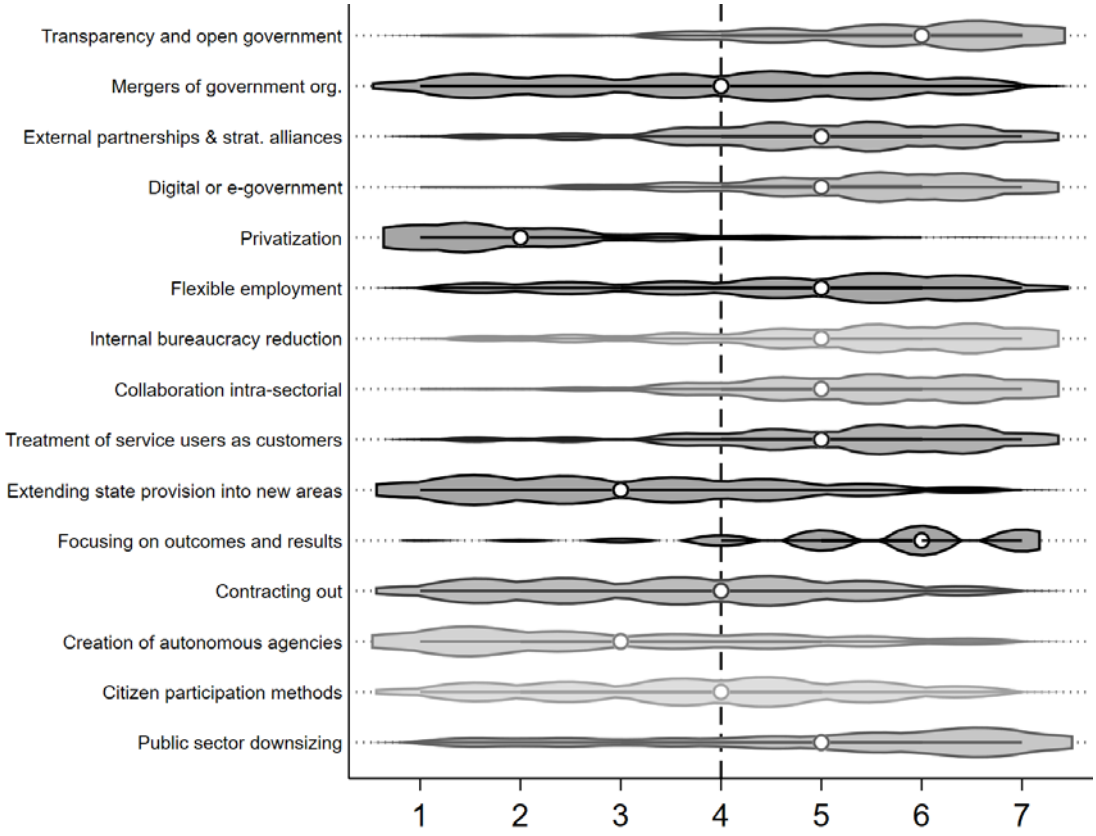
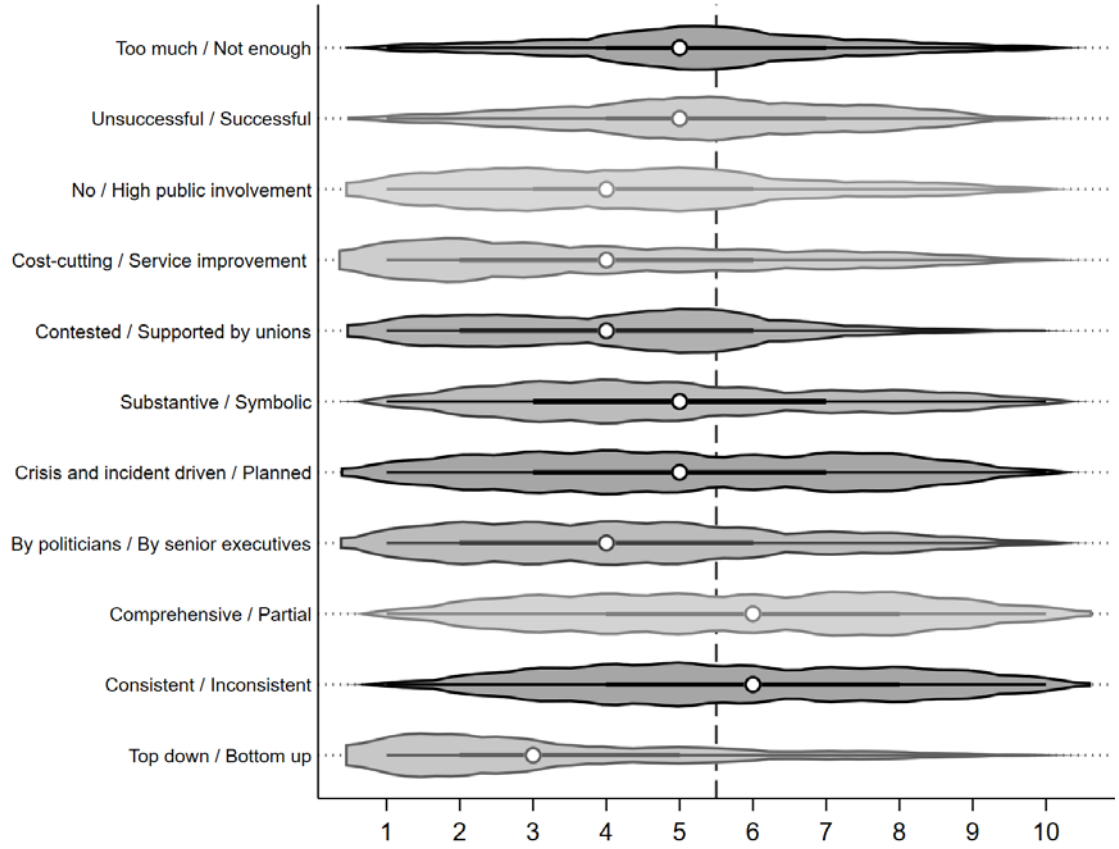


Figure 10: Public value orientation in policy reform (Q18)



Note: Violin plots of summary statistics; shaded areas indicate kernel densities of responses; circles mark response medians; bars indicate interquartile ranges; dashed lines indicate scale median.

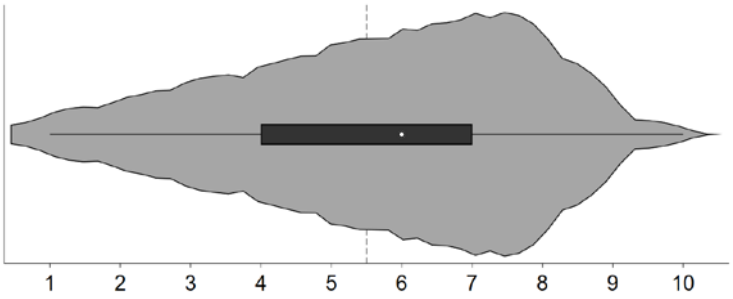
Similarly important was collaboration between different public sector organizations (*M* = 5.17; *SD* = 1.51), digitalization (*M* = 5.09; *SD* = 1.56), reduction of red-tape (*M* = 4.89; *SD* = 1.81), treating HE service users as customers (*M* = 4.69; *SD* = 1.81), downsizing (*M* = 4.66; *SD* = 2.03), engaging in external partnerships and strategic alliances (*M* = 4.61; *SD* = 1.73), and facilitating flexible employment systems (*M* = 4.43; *SD* = 1.85).

Q18 asked respondents to indicate to what degree they perceived policy reforms in HE organizations as influenced by either NPM-related values (left) or PVO-related values (right). The overall construct rating reveals a clear tendency toward the NPM paradigm (*M* = 4.21; *SD* = 1.05), further substantiated by the graphical analysis of response medians in the violin plots of individual items' summary statistics (see **Figure 10** and and **Table 6** for more detail).

4.1.4 Financial crisis (MV)

Respondents generally indicate that the state of PA has improved compare to its status 5 years ago (**Q16**: *M* = 5.69; *SD* = 2.18). The graphical analysis of responses reveals that an interpretation based on M and SD is misleading because it understates the strong tendency of responses frequencies toward higher levels of agreement (see violin plots with kernel densities in Figure 11).

Figure 11: State of PA compared to 5 years ago (Q16)



Note: Violin plot of Q16 summary statistics; shaded area indicates kernel density of responses; circle marks response median; black bars indicate interquartile ranges of responses; dashed line indicates scale median.

Surprisingly, respondents differentiate sharply between intra-sectoral alliances and extra-sectoral public service provision by the means of contracting out to the private for-profit sector (*M* = 3.67; *SD* = 1.93) or privatization (*M* = 2.44; *SD* = 1.61), which

are regarded as substantially less or least relevant, respectively. Furthermore, consolidation (*M* = 3.87; *SD* = 1.90) and fragmentation of public HE institutions (*M* = 3.30; *SD* = 1.93), the extension of HE services into new areas (*M* = 3.32; *SD* = 1.77), and elaborating clients' methods for intra-organizational participation (*M* = 3.83; *SD* = 1.77) are regarded as relatively less relevant.

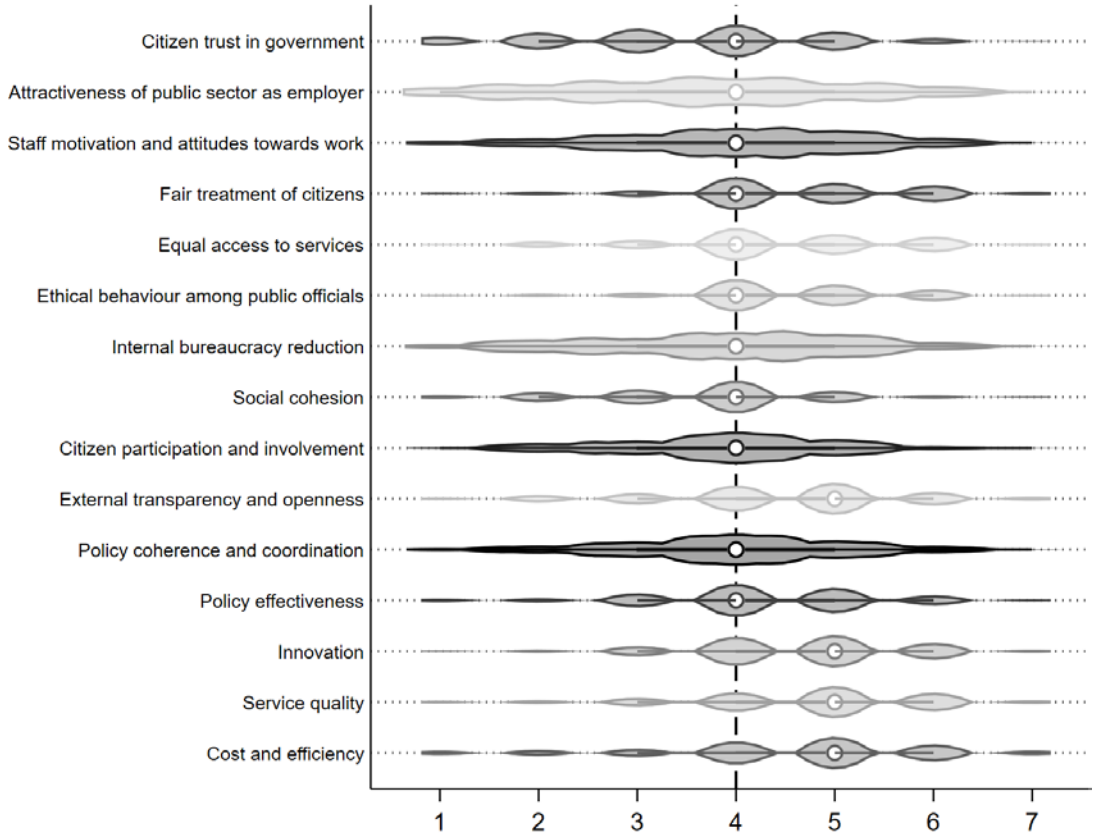
Respondents state that PA performance in the HE sector over the last five years was generally satisfactory (**Q19**: *M* = 3.95; *SD* = 0.89) in all major performance indicators (see Figure 12 and Table 7 for more detail). The sample perceive the bureaucratic organizations of HE as especially successful in implementing policies regarding service quality (*M* = 4.61; *SD* = 1.32), cost and efficiency (*M* = 4.48; *SD* = 1.42), innovation (*M* = 4.55; *SD* = 1.21), and fair treatment of citizens as clients (*M* = 4.53; *SD* = 1.24). It is important to note that response toward scale items "Attractiveness of the public sector as employer" (*M* = 3.66; *SD* = 1.53), "Staff motivation and attitudes toward work" (*M* = 3.96; *SD* = 1.36), and "Internal bureaucracy reduction / cutting red tape" (*M* = 3.84; *SD* = 1.41) are especially widely dispersed across the whole range of the scale (range: 1 to 7), indicating strong variations between agencies and countries to be explored further.

Table 7: State and performance of HE PA

Code & Variable	Min.	Max.	M ± SD
Q16 State of PA compared to 5 years ago (*N* = 543)	**1**	**10**	**5.69 ± 2.18**
Q19 HE PA performance over the last 5 years (*N* = 496)	**1**	**6.69**	**3.95 ± 0.89**
Cost and efficiency	1	7	4.48 ± 1.42
Service quality	1	7	4.61 ± 1.32
Innovation	1	7	4.55 ± 1.21
Policy effectiveness	1	7	4.20 ± 1.25
Policy coherence and coordination	1	7	3.92 ± 1.32
External transparency and openness	1	7	4.37 ± 1.34
Citizen participation and involvement	1	7	3.87 ± 1.28
Social cohesion	1	7	3.70 ± 1.25
Internal bureaucracy reduction / cutting red tape	1	7	3.84 ± 1.41
Ethical behavior among public officials	1	7	4.43 ± 1.17
Equal access to services	1	7	4.36 ± 1.27
Fair treatment of citizens	1	7	4.53 ± 1.24
Staff motivation and attitudes towards work	1	7	3.96 ± 1.36
Attractiveness of the public sector as employer	1	7	3.66 ± 1.53
Citizen trust in government	1	7	3.51 ± 1.36

Note: Items reported with geometric means and standard deviations (M ± SD).

Figure 12: HE PA performance over the last 5 years (Q19)



Note: Violin plots of summary statistics; shaded areas indicate kernel densities of responses; circles mark response medians; bars indicate interquartile ranges of responses; dashed line indicates scale median.

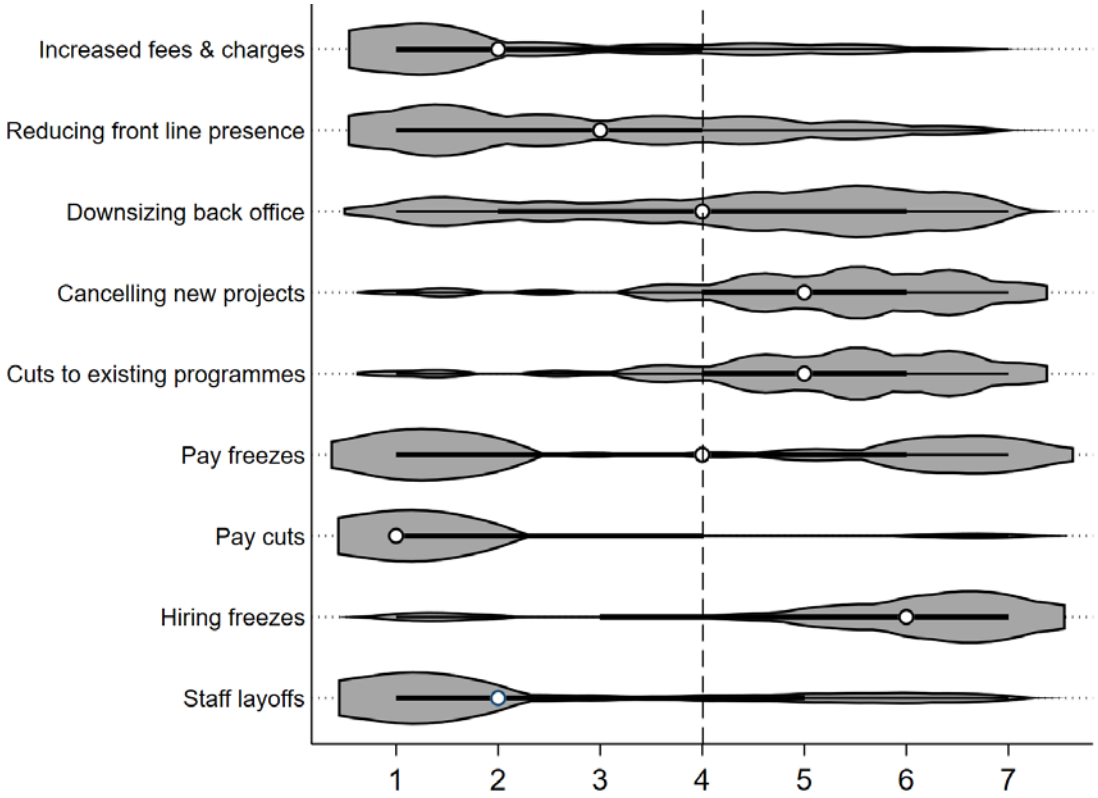
Table 8 presents organization-level statistics on how the respective institutions responded to the consequences of the financial crisis of 2008 and its aftermath pf increasing HE austerity. Only 13.3% of the sample report that their HE organization was not forced to respond to the financial crisis by implementing saving strategies (**Q20**). The majority of respondents (43.0%) report that the general approach to savings was targeted cuts in budget according to a set of specific priorities. A further 30.8% report that their organization followed proportional cutbacks across the board over all areas of activities, and 13.0% state that savings were realized by increasing productivity and efficiency within the organization.

In direct response to the austerity amplified by the financial crisis of 2008 and its aftermath, the sample respond that their organizations predominantly engaged in cutback measures that rather targeted the implementation of specific programs instead of employees or clients (see **Q21** in Table 8 and the violin plots in **Figure 13** for more detail). Cancelling or postponing new projects (M = 4.70; SD = 1.82), cutting budgets

of existing projects (*M* = 4.75; *SD* = 1.82), and downsizing back offices (*M* = 4.13; *SD* = 1.98). While hiring (*M* = 4.95; *SD* = 2.15) and pay freezes (*M* = 3.81; *SD* = 2.46) were also reported to be very and relatively common, respectively, pay cuts. (*M* = 2.55; *SD* = 2.21), staff layoffs (*M* = 2.84; *SD* = 2.17), and reducing street-level bureaucrats' presence (*M* = 3.04; *SD* = 1.82) was a very rare strategy. However, the relatively high *SD* in responses indicates high variance between agencies and countries.

As a consequence of the financial crisis, respondents point out that especially the power of the Ministry of Finance in their respective countries on their organization had increased (*M* = 5.61; *SD* = 1.47), that the style of decision making in their organization had become more centralized (*M* = 4.56; *SD* = 1.78), and that the unit dealing with budget planning within their respective HE organization had also gained power (*M* = 4.39; *SD* = 1.79).

Figure 13: Application of specific cutback measures (Q21)



Note: Violin plots of summary statistics; shaded areas indicate kernel densities of responses; circles mark response medians; black bars indicate interquartile ranges of responses; dashed line indicates scale median.

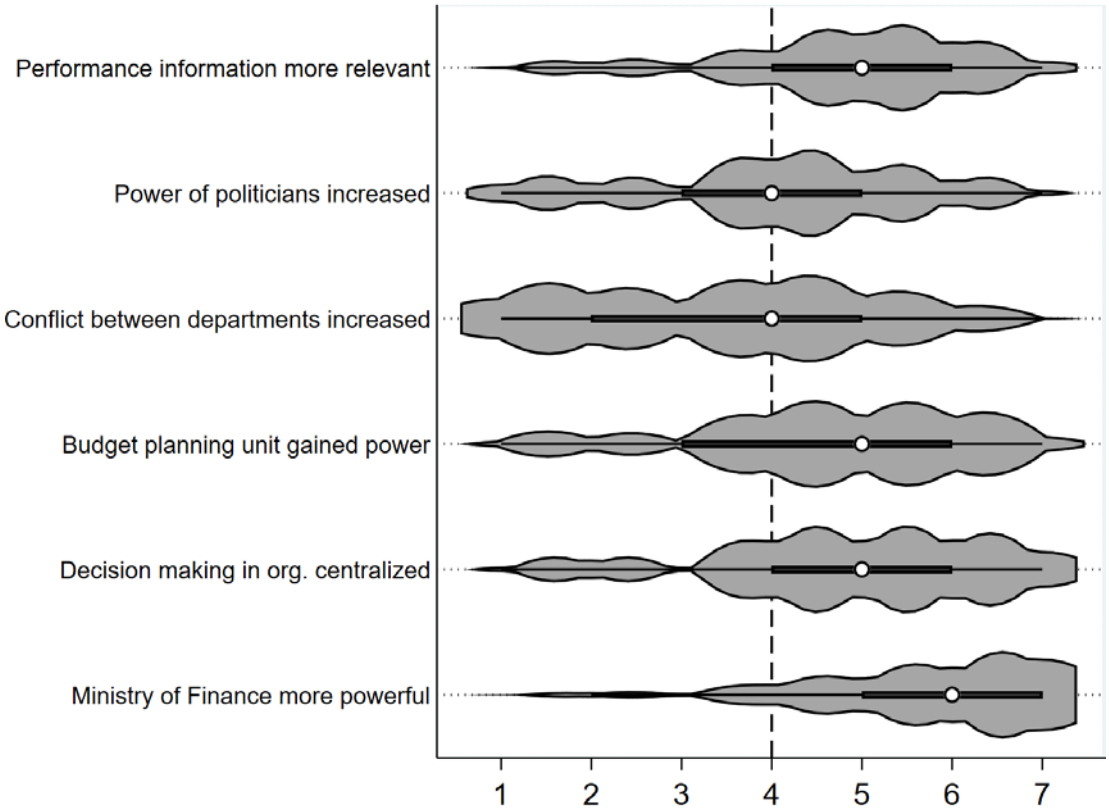
Table 8: Financial crisis

Code & Variable	*n*	Min.	Max.	
Q20 Financial crisis: General approach to savings				
Proportional cuts across-the-board over all areas	102	.	.	30.8%
Productivity and efficiency savings	72	.	.	13.0%
Targeted cuts according to priorities	240	.	.	43.0%
None / no approach required	74	.	.	13.3%
Q21 Application of specific cutback measures				
Staff layoffs	479	1	7	2.84 ± 2.17
Hiring freezes	485	1	7	4.95 ± 2.15
Pay cuts	475	1	7	2.55 ± 2.21
Pay freezes	482	1	7	3.81 ± 2.46
Cuts to existing programs	476	1	7	4.75 ± 1.82
Postponing or cancelling new programs	478	1	7	4.70 ± 1.84
Downsizing back offices	481	1	7	4.13 ± 1.98
Reducing front office presence	476	1	7	3.04 ± 1.82
Increased fees and user charges for users	471	1	7	2.43 ± 1.80
Q22 Consequences of the financial crisis				
The power of the Ministry of Finance has increased	469	1	7	5.61 ± 1.47
Decision making in my organization has become more centralized	467	1	7	4.56 ± 1.78
The unit dealing with budget planning within my organization has gained power	467	1	7	4.39 ± 1.79
The conflict between departments has increased	467	1	7	3.53 ± 1.73
The power of politicians (vs. non-elected public officials) in the decision-making process has increased	464	1	7	4.01 ± 1.77
The relevance of performance information has increased	464	1	7	4.60 ± 1.62

Note: Items are either reported with geometric means and standard deviations (M ± SD) or proportions (%) and frequencies (*n*).

Figure 14 presents the summary statistics of Q22 in more detail including kernel densities of responses and median values. Surprisingly, the sample report that this power shift did not increase internal conflict between the different departments of their HE organization (M = 3.53; SD = 1.73) which might be connected to respondents' perception that the power of political actors on their organization had not increased in general (M = 4.01; SD = 1.77) but only in respect to those actors and institutions that possess means to directly or indirectly exercise financial influence on their department. Consequently, the use of performance information in decision making has increased (M = 4.60; SD = 1.62), indicating a growing influence of the NPM paradigm in their organization.

Figure 14: Consequences of the financial crisis (Q22)



Note: Violin plots of summary statistics; shaded areas indicate kernel densities of responses; circles mark response medians; black bars indicate interquartile ranges of responses; dashed line indicates scale median.

In summary, the descriptive results of Q20, Q21, and Q22 answer **RQ1's second topic of interest** by revealing that NPM-related value trade-offs are very prevalent in the operative processes of HE leadership in Europe. Specifically, Q20 reveals a strong tendency to respond to growing public HE austerity by realizing targeted and proportional budget cuts mainly targeted at reducing the costs of specific programs and by postponing and cancelling new projects instead of engaging in process innovations (Q21). Top-level leaders in European HE emphasize that the power of external political stakeholders had increased and that power structures within HE organizations had become more hierarchical and centralized (Q22). These findings strongly underline the growing prevalence of the NPM paradigm.

4.1.5 Politicization (MV)

Respondents indicate that leadership practices in their organizations were slightly more oriented toward being focused on NPM-related goal criteria (**Q8**: $M = 3.72$; $SD = 0.98$); see Table 9. The sample report that they frequently interact with both internal

(n = 451) and external (n = 544) stakeholders with an external-to-internal ratio of 0.14 which means that respondents more frequently and more intensively interact with the external environment of the organization (**Q10** external: M = 4.17; SD = 0.85) compared with stakeholders from within its internal environment (Q10 internal: M = 2.50; SD = 0.75).

Table 9: Organization-level statistics: Internal decision processes

Code & Variable	*N*	Min.	Max.	M ± SD
Q8 Organizational goal orientation	**571**	**1.20**	**7**	**3.72 ± .98**
Q10 Frequency of interaction with stakeholders				
External	544	2.17	6	4.17 ± .85
Internal	451	1	4.62	2.50 ± .75
Relation external / internal		.14	.62	.33 ± .08
Q12 Political actors' influence on managerial decisions	**432**	**1.32**	**5.93**	**3.50 ± 0.98**
Politicians respect the technical expertise of the administration	544	1	7	4.22 ± 1.68
Politicians regularly influence senior-level appointments in my organization	529	1	7	3.92 ± 2.36
In my organization politicians interfere in routine activities	544	1	7	2.86 ± 1.90
The administration and not the political level is the initiator of reforms or new policies	530	1	7	3.98 ± 1.62
Removing issues and activities from the realms of politics allows for more farsighted policies	495	1	7	4.75 ± 1.76

Note: Items reported with geometric means and standard deviations (M ± SD).

The sample report that the processes of their managerial decision making were average-levels of influenced by political actors (**Q12**: M = 3.50; SD = 0.98), especially on the senior level of management and the appointment of those senior staff. Political actors are less often received to be influencing routine procedures and that those actors were perceived to being respectful to the technical expertise of the administrative staff of the HE organization, allowing the administration and not the political level to be the initiator of internal reforms or policy renewal within the organization. Curiously, the sample strongly indicate that removing issues and activities from the realms of politics allows the implementation of more foresighted policies (M = 4.75; SD = 1.76), indicating skepticism about the role of political influence on managerial decision making in the senior levels of HE organizations.

In summary, the descriptive results of Q8, Q10, and Q12 answer **RQ2's second topic of interest** by revealing that top-level leaders in European HE often interact with

external stakeholders (Q10), and that – as a consequence of policy reforms – external political stakeholders regularly interfered with the internal processes of decision making within HE organizations. As a result, organizational goal orientation had shifted slightly towards NPM-related criteria of achievement (Q8). HE leaders are rather skeptical regarding this political influence and they clearly indicate that a higher degree of politicization resulted in more shortsighted policies, a typical issue of NPM-informed leadership (Q12).

4.2 Main Analysis

4.2.1 Correlation Analysis

Table A.4.1 in Appendix A.4 presents the results of the pairwise correlation analysis (Spearman's ρ). Conducting correlation analyses is an important step prior to conducting exploratory regression analyses because it helps to reduce the numbers of variables to be used in the regression models by identifying multicollinear variables that might artificially inflate the model and thereby reduce its validity (Belsley et al. 1980).

It is important to note that the finely clustered structure of the data – by country level and by this study's focus on the educational sector only – results in a relatively fine grid of second-order country-level response clusters that reduce the explicatory power of any correlation-based statistical method of analysis. For instance, in order to detect causal relations in the prospect of small effect sizes (Cohen's $d \leq |0.3|$; *power* = 0.8; α = 0.05), conservative estimates indicate that that the necessary absolute sample size for reliable comparisons of means to detect survey-based causal mechanisms between two different subsamples amounts to at least n = 176 respondents per subsample (Ellis 2010), which has not been achieved in the current sample, simply because in most countries, the absolute population of top-level bureaucrats in HE is smaller than this number. Consequently, the current study seeks to present *correlational relations* rather than testing *causal mechanisms* to provide indications of how politicization, austerity, and additional factors relate to the acceptability of implementing NPM-related leadership principles in HE organizations.

Independent variables. First, it is important to test whether the (presumed) independent variables are actually independent because the higher the correlation between independent variables the greater the sampling error of the partials (Blalock 1963). In general, pairwise correlation analysis (see Table A.4.1 in Appendix A.4 for full detail) reveals a small but significant correlation between individuals' organizational commitment and the culture of the organization ($\rho_{dc} = 0.311$, $p = 0.000$) indicating that a more open and PVO-oriented organizational culture is associated with higher top-level employee commitment.[10] A rather PVO-oriented organizational culture also correlates with an organization's PVO-related goal orientation ($\rho_{ic} = 0.365$, $p = 0.000$) and the perceived quality of HE performance ($\rho_{mc} = 0.351$, $p = 0.000$). Higher employee commitment is positively related to a PVO-directed goal orientation within HE organizations ($\rho_{id} = 0.384$, $p = 0.000$) and also with individuals' assessment of the current state of HE performance ($\rho_{md} = 0.278$, $p = 0.000$). An organizations goal orientation toward the PVO-paradigm also correlates with the perception of HE performance ($\rho_{mi} = 0.379$, $p = 0.000$).

Furthermore, the analysis reveals a very mild positive correlation between $Q24_{NPM}$ and $Q24_{PVO}$ ($\rho_{gf} = 0.310$, $p = 0.000$). This is a plausible relation because these two variables originate from a general scale on motivation and this finding indicates that people who are more motivated in general will also score higher in either of these two variables. As expected, the analysis reveals a small but statistically significant correlation between respondents' age and their locus of control ($\rho_{oh} = 0.235$, $p = 0.000$) and a substantial significant correlation between two of the three IVs associated with the effects of the fiscal crisis of 2008 ($\rho_{ml} = 0.453$, $p = 0.000$). Furthermore, there are a number of very small but statistically significant correlations (5%-level) that are negligible (Blalock 1963). It is especially important to note that all presumed control variables are neither correlated with this study's DVs, IVs, or MVs. Consequently, the variables Q25 (*locus of control*), *age group*, *gender*, and *level within hierarchy* (q4) will be excluded from the regression model (Cohen et al. 2002).

[10] The current section uses the notation ρ_{xy} to indicate the correlation coefficient ρ of variables x and y in Table A.5.1 in Appendix A.5.

Dependent variables. Second, the correlation table (A.4.1) already reveals that some hypothesized predictors will be more likely to result in a regression model powerful enough to explain a large share of variance than other predictors: The DV *reform trends in HE* (Q17) is significantly – though moderately (range ρ_{xa} = 0.124 – 0.371; p = 0.000 – 0.017) – related to all variables except *political influence* (Q12: ρ_{ka} = 0.021, p = 0.680) and the likelihood of specific *saving strategies* being conducted (Q20: ρ_{na} = -0.047, p = 0.298). Q17 is most strongly correlated with respondents' *organizational commitment* (Q15: ρ_{da} = 0.295, p = 0.298), *organizational goal-orientation* (Q8: ρ_{ia} = 0.371, p = 0.298), and perceived *HE performance* (Q19: ρ_{ma} = 0.282, p = 0.298). In contrast, the DV *PVO in policy reform* (Q18) is not statistically correlated to the degree with which individual respondents' motivation is related to the NPM or PVO paradigm ($Q24_{NPM}$: ρ_{bf} = -0.017, p = 0.701; $Q24_{PVO}$: ρ_{bg} = 0.038, p = 0.407) and individuals' relative frequency of stakeholder interaction ($q10_{rel}$: ρ_{bj} = 0.083, p = 0.110). Intriguingly, Q18 is most strongly correlated with variables assumed to be MVs, namely *state of HE PA* (Q16: ρ_{bl} = 0.286, p = 0.000) and the perceived *HE PA performance* (Q19: ρ_{bm} = 0.271, p = 0.000).

Consequently, the revised statistical model (including potential interaction terms) for the main multivariate analysis is specified as:

$$
\begin{aligned}
&Acceptability\ of\ NPM\ [Reform\ trends\ (Q17); PVO\ in\ policy\ reform\ (Q18)] = \\
&\quad [\beta_1 Organizational\ culture\ (Q14) + \beta_2 Individual\ Commitment\ (Q15) + \\
&\quad \beta_3 Values(Q23) + \beta_4 Professional\ Motivation\ (Q24_{NPM};\ Q24_{PVO})] + \\
&\quad \beta_{5i}[Financial\ crisis\ (Q16; Q19; Q20)] + \beta_{6i}[Politicization\ (Q8; Q10; Q12)] + \\
&\quad \beta_7[Financial\ crisis \times Politicization] + \varepsilon
\end{aligned}
$$

4.2.2 OLS-Regression Results

Table 10 presents the results of OLS regression analyses on the DVs *reform trends* (Q17) and *PVO in policy reform* (Q18). The total number of responses for the multivariate analyses is reduced to *Obs*. = 201 because a number of questions of the survey were voluntarily and a number of respondents chose to not reply to at least one of the items tested in the statistical model (see formula above). For regression analysis, only complete responses were included in the estimation process.

Conducting Cameron and Trivedi's (1992) information matrix test shows that the data used to estimate Model I_{Q17} is slightly positively skewed (Het.: X^2 (77) = 107.55, p = 0.012; Skew.: X^2 (11) = 22.12, p = 0.023; Kurt.: X^2 (1) = 0.38, p = 0.539; in total IM-Test: X^2 (89) = 130.05, p = 0.003) while in Model I_{Q18} (Het.: X^2 (77) = 50.38, p = 0.992; Skew.: X^2 (11) = 7.93, p = 0.719; Kurt.: X^2 (1) = 1.10, p = 0.295; in total IM-Test: X^2 (89) = 59.41, p = 0.993), heteroscedasticity, skewness, and asymmetric kurtosis were not an issue (White 1980). Positively skewed data indicates that responses are slightly right-tailed in comparison to a continuous random normal distribution (Groeneveld & Meeden 1984). Heteroscedasticity indicates that some variables used in Model I_{Q17} are characterized by a different form of statistical dispersion compared to the remainder of variables. In OLS regression, heteroscedasticity does not bias the estimates but its presence results in a relative underestimation of the model variance and covariance (Engle 1982). Consequently, the models in Table 10 were estimated with scaled variance matrices and are reported with heteroscedasticity-proof standard errors.

The models are well specified (Model I_{Q17}: F (12) = 7.16, p = 0.000; Model I_{Q18}: F (12) = 3.83, p = 0.000) and both explain a substantial and significant amount of variance (Model I_{Q17}: R^2 = 0.248; Model I_{Q18}: R^2 = 0.170). Both models are stable with relatively high effect sizes (Model I_{Q17}: η^2 = 0.248; Model I_{Q18}: η^2 = 0.170) and very low mean VIFs (Model I_{Q17}: VIF range = 1.06 – 1.52; mean VIF = 1.23; Model I_{Q18}: VIF range = 1.08 – 1.49; mean VIF = 1.23) given the relatively high degrees of freedom – i.e. number of variables (df = 12) – within the models (Kirk 1996; Ellis 2010; Kelley & Preacher 2012). In both models, all VIF factors are smaller than 10 and he VIF means are not considerably larger than 1. Hence, multicollinearity is not a confounding issue in the two direct effects models (Chatterjee & Hadi 1986).

Relevance of NPM-related reform trends (Q17). Model I_{Q17} reveals that leaders' perception on the relevance of NPM-related reform trends in HE (Q17) is significantly and positively associated with both individual [micro] and organizational factors [meso], namely with leaders' individual commitment to their organization (Q15: b = 0.18, p = 0.005), their tendency to prefer NPM-related values over PVO-related values (Q23: b = 0.24, p = 0.000), and their perception of an organizational goal orientation that is directed toward the NPM paradigm (Q8: b = 0.31, p = 0.000); see Table 10 for full estimate details.

Table 10: Results of OLS regression analyses

	Q17: Reforms in HE								Q18: PVO in policy reform							
	Model I_{Q17}				Model II_{Q17}				Model I_{Q18}				Model II_{Q18}			
	Coef.	*SE*	*t*	*p*	*Coef.*	*SE*	*t*	*p*	*Coef.*	*SE*	*t*	*p*	*Coef.*	*SE*	*t*	*p*
Q14: Organizational culture	-.05	.06	-.78	.439	-.06	.06	-.91	.366	.11	.07	1.57	.118	.09	.07	1.20	.232
Q15: Individual commitment	**.18**	**.06**	**2.82**	**.005**	**.18**	**.06**	**2.93**	**.004**	-.05	.07	-.61	.541	-.04	.07	-.48	.632
Q23: Value trade-offs	**.24**	**.07**	**3.56**	**.000**	**.25**	**.07**	**3.80**	**.000**	**.18**	**.08**	**2.33**	**.021**	.12	.08	1.46	.147
$Q24_{NPM}$	.04	.06	.54	.592	.03	.06	.42	.672	-.09	.07	-1.26	.211	-.08	.08	-1.05	.296
$Q24_{PVO}$	.06	.08	.72	.472	.06	.08	.79	.433	-.05	.11	-.50	.616	-.08	.10	-.80	.422
Q16: State of HE PA	-.02	.03	-.69	.490	-.25	.15	-1.66	.098	.07	.04	1.89	.061	-.16	.23	-.71	.478
Q19: HE PA performance	.07	.07	.98	.330	-.00	.33	-.00	.998	.09	.10	.86	.390	.06	.53	.59	.554
Q20: Saving strategies	-.09	.06	-1.36	.176	-.74	.38	-1.94	.054	.11	.07	1.53	.127	.68	.47	1.45	.149
Q8: Org. goal orientation	**.31**	**.09**	**3.55**	**.000**	.56	.32	1.72	.086	**.21**	**.09**	**2.17**	**.031**	.44	.45	.98	.329
$Q10_{rel}$: Stakeholder interaction	.30	.93	.32	.747	**-11.79**	**4.24**	**-2.78**	**.006**	1.02	1.16	.88	.381	2.16	4.71	.46	.647
Q12: Political influence	-.02	.06	-.25	.800	-.04	.06	-.62	.536	.04	.07	.48	.630	.05	.08	.58	.563
Q8 × Q16					.01	.03	.26	.792					.02	.04	.38	.706
Q8 × Q19					-.07	.07	-.94	.347					-.09	.10	-.90	.367
Q8 × Q20					-.02	.07	-.26	.792					.02	.09	.24	.810
$Q16 \times Q10_{rel}$					.59	.42	1.40	.164					.54	.54	.99	.325
$Q19 \times Q10_{rel}$					1.01	.95	1.07	.286					.08	1.16	.07	.944
$Q20 \times Q10_{rel}$					**2.24**	**.94**	**2.38**	**.018**					-1.89	.99	-1.91	.058
Constant	.96	.74	1.29	.197	**4.07**	**1.70**	**2.40**	**.018**	**1.76**	**.88**	**1.99**	**.048**	1.05	2.30	.46	.647
Obs.				201				201				205				205
df				12				18				12				18
F (df)				**7.16*** **				**5.56*** **				**3.83*** **				**3.36*** **
η^2				.248				.301				.170				.198
VIF				1.23				24.35				1.23				23.23
R^2				.248				.301				.170				.198

Notes: Mean variance inflation factors (VIF). η^2*:* effect sizes. *Het*.-robust *SEs.* Statistically significant relations (5-% level) in bold print.

Neither leaders' perception of their organizations' cultures (Q14: b = -0.05, p = 0.439) nor respondents' personal tendency toward the NPM paradigm ($Q24_{NPM}$: b = 0.04, p = 0.592) and toward the PVO-paradigm ($Q24_{PVO}$: b = 0.06, p = 0.472) have any relevance in explaining the models' variance. This is surprising, because, apparently, individuals' value orientation is irrelevant for their perspective on the relevance of NPM-related reform trends in HE (Q17). These findings directly respond to **RG3** that asks "*how do HE leaders evaluate the relevance of NPM-related reform trends in HE?*" because they reveal that leaders' evaluation of the relevance of NPM-related reform trends is directly related to their *implicit* individual tendency to prefer NPM-related values when leaders are forced to trade-off NPM- versus PVO-related values against each other in a *professional context* – but not if leaders are asked on their preferences in general, i.e. personally and private value preferences – and their perception of their organizations' goals, especially if leaders are highly committed to said organizations.

Contrary to expectations, meso-level variables related to the consequences of the financial crisis are not significantly related to HE executives' perception of NPM-reform relevance (Q16: b = -0.02, p = 0.490; Q19: b = 0.07, p = 0.330; Q20: b = -0.09, p = 0.176). Regarding politicization, only variable Q8 is significantly associated with the IV Q17 but not with a relatively higher frequency of interactions with political stakeholders ($Q10_{rel}$: b = 0.30, p = 0.747) or the degree of direct political influence (Q12: b = -0.02, p = 0.800). These findings respond to **RQ2's first topic of interest** by revealing that although respondents explicitly report that the influence of political actors on their organization is growing, the model shows that the degree to which political involvement actually results in a higher or lower perceived relevance of NPM-reform is statistically non-significant and hence that the political influence of external stakeholders does hardly influence HE leadership.

In Table 10, Model II_{Q17} reports the results of exploratory post-hoc analyses on potential interaction and moderation effects of MVs related to consequences of the financial crisis (Q16, Q19, and Q20) and MVs related to politicization (Q8 and $Q10_{rel}$) on the relationship of the IVs and the DV (Q17). The model does not reveal any significant interaction effects. Furthermore, the explanatory value of a model with interaction effects is substantially inflated (Model II_{Q17}: F (18) = 5.56, p = 0.000; mean

VIF = 24.35), mainly driven by $Q10_{rel}$. Due to variance inflation, the significant association between Q17 and Q8 disappears in Model II_{Q17} while the significant results of Q15 and Q23 on Q17 remain stable. Hence, this post-hoc analysis provides no additional evidence for moderation or mediation effects.

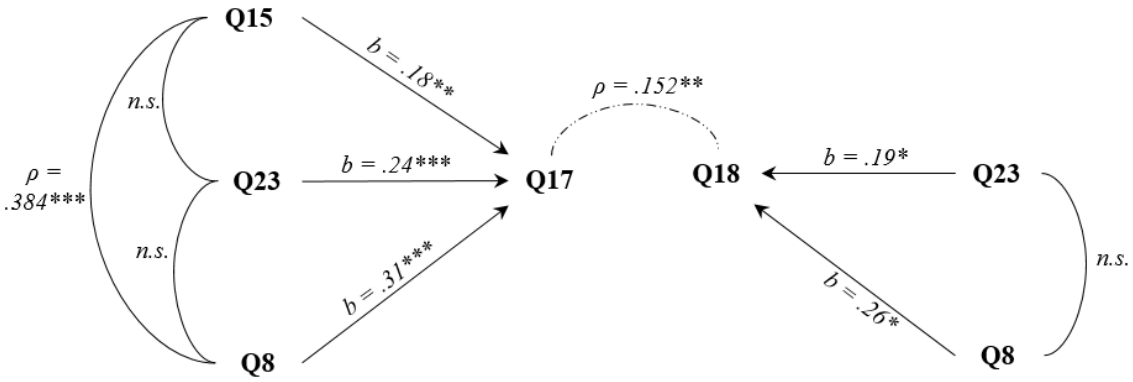
PVO in policy reform (Q18). Model I_{Q18} in Table 10 provides the main effects regression results on the prevalence of the PVO paradigm in HE policy reform (Q18). Higher values in Q18 indicate a stronger tendency toward the PVO paradigm. Model I_{Q18} reveals that only two variables are significantly related to Q18, namely respondents' individual value tradeoff (Q23: $b = 0.18$, $p = 0.021$) and their perception of an organizational orientation that is strongly driven by explicit goals (Q8: $b = 0.21$, $p = 0.031$). The model is well specified (I_{Q18}: F (12) = 3.83, $p = 0.000$) and robust (I_{Q18}: mean VIF = 1.23; VIF range = 1.08 – 1.49), explaining a significant amount of variance (I_{Q18}: $R^2 = 0.170$). Q16, respondent's assessment of the state of HE PA in general, has a marginally significant effect (Q16: $b = 0.07$, $p = 0.061$) but the effect size is very small. All other IVs and potential MVs are not significantly related to Q18 (see Table 10 for full detail).

Adding interaction terms to explore the presumed moderation or mediation effects of the MVs in Model II_{Q18} does not lead to a stable model (similarly to Model II_{Q17}). Introducing interaction terms substantially inflates variances across IVs and MVs to an unacceptable extend (mean VIF = 23.23; VIF range = 1.18 – 50.14) and decreases the overall model fit (II_{Q18}: F (18) = 3.36; $p = 0.000$). Consequently, the model does not reveal additional evidence for substantial moderation or mediation effects besides the direct main effects.

Similarly to the findings regarding the DV Q17, the results of the regression analysis on Q18 answer to **RQ2** and **RQ3** by showing that the degree of political involvement does neither directly nor indirectly influence the degree to which the traditional PVO paradigm is recognized in HE policy reforms (**RQ2's second topic of interest**). Curiously for Q18, the multivariate analysis on Q18 reveals that leaders with high organizational commitment and those with a higher tendency to trade-off PVO- for NPM-related values in a professional context are actually more likely to report the prevalence of the PVO paradigm – and its relevance – in HE policy reforms

Figure 15 displays the revised empirical model incorporating the findings derived from the regression analyses.

Figure 15: Revised empirical model



Notes: Arrows denote statistically significant associations with *b* values; lines without arrowheads display Spearman's correlation coefficients ρ. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

In summary, both the acceptability of NPM-related policy reforms in HE (Q17) and the prevalence of PVO in policy reform (Q18) are significantly correlated indicators of the degree to which HE leaders accept the prevalence of the NPM paradigm in their organizations. Both DVs are substantially related with the micro-level IV of respondents' individual value trade-offs on the job (Q23) and the meso-level IV perceived organizational goal orientation (Q8) while individuals' organizational commitment (Q15) is only significantly related with Q17 but not with Q18.

5 DISCUSSION

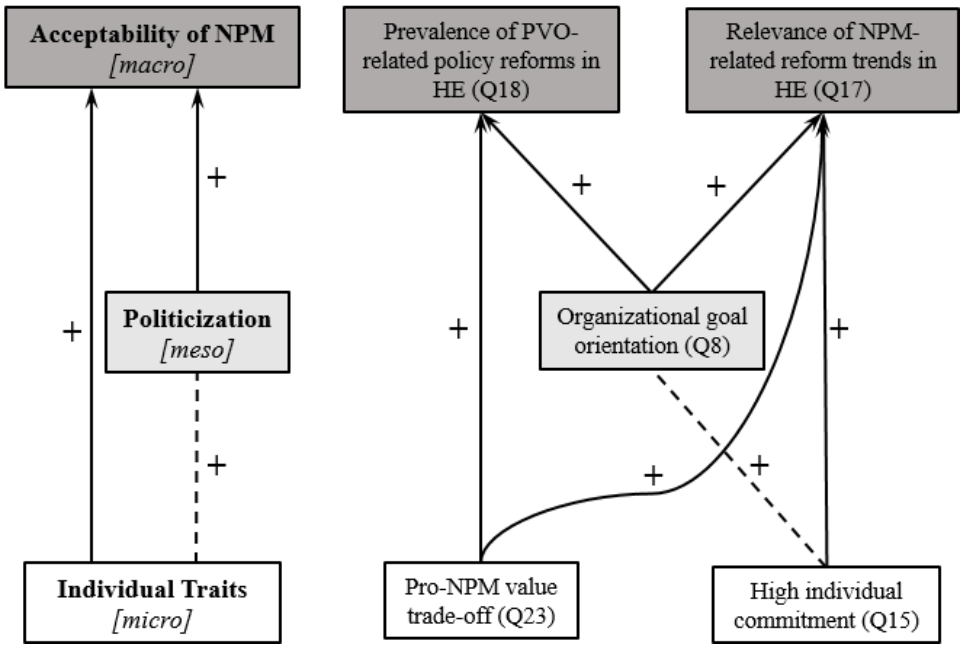
In the following section, the empirical results of section 4 are discussed in the context of the research questions previously derived from the current scientific discourse. The discussion section is split into three parts. It, first, discusses the findings (5.1) based on the multivariate steps of analysis in the previous section (4.2.2) within the narrative frame of the three research questions, deriving a multi-level empirical model relevant for theory and practice. Second, section 5.2 considers the limitations of the current study, opening up avenues for future research. Third, the discussion section concludes with an outlook onto the emergent changes to the HE landscape (5.3), providing

critical thoughts on the changing role of value(s) of HE in an age of creative destruction.

5.1 General Discussion

Figure 16 presents a revised model combining the empirical findings of the current study. The left side of this figure displays the global (and potentially causal) mechanisms of the interrelated associations revealed by the descriptive and multivariate steps of analysis. The right side of the figure presents maps the statistically robust multi-level relationships between the specific variables investigated.

Figure 16: Revised theoretical model



Like a tree, the narrative of the following subsections of this discussion follow this figure from its micro-level roots – nested within the individual leader – upwards crossing the stem of effects of meso-level organizational goal orientation and politicization, to conclude at its leaves with the generalized, macro-level prevalence and acceptability of NPM in European HE. Full arrow lines indicate statistically significant relationships as revealed by regression analysis while dashed lines mark additional, substantial correlations.

5.1.1 NPM leverages Value Conflicts in HE Leaders [micro]

Based on the current state of the scientific discourse, **RQ1** asked whether HE leaders in Europe were mainly driven by NPM-related values and how prevalent NPM-related value trade-offs were in the operative processes supervised by these HE leaders in Europe. The quantitative results clearly reveal that HE leaders experience strong – and potentially implicit – value conflicts and that HE leaders are not singularly motivated by the values typically associated with the NPM paradigm: The descriptive results show that, on the one hand, top-level executives in European HE are predominately driven by PVO-related factors of motivation and that they do not arbitrarily advocate the neoliberal values associated with the NPM paradigm on the micro-level of organizational leadership implementation. On the other hand, the sample report that – when asked explicitly – NPM-related value trade-offs were very prevalent in these very same operative processes of HE and the sample report that these values were very relevant for fulfilling the role of a leader in HE effectively. These seemingly contradictory statements show that leaders in European HE are subjected to a fundamental and paradoxical value conflict created by the political installation of the NPM paradigm as a benchmark for NPM governance. This value conflict is present on both the micro and the macro level of HE leadership activities and creates tensions on both levels:

First, HE leaders are personally pressured to implement and advocate neo-classical values that are incongruent with their own personal value orientation, resulting in person-organization misfit (Adkins et al. 1994; Kristof 1996). This is problematic because deficits in value-related person-organization and person-job fit are correlated with lower public service motivation (Gould-Williams et al. 2013), lower levels of motivation, commitment, and satisfaction (Van Loon et al. 2015), higher turnover intentions (Giaugue et al. 2011), higher stress through increased burdens of cognitive and emotional coping mechanisms (Burke & Reitzes 1991; Liu et al. 2014), higher absenteeism (Jensen et al. 2017) and the phenomenon of resigned satisfaction (Giauque et al. 2015). The authors cited above all emphasize that the negative consequences are even stronger for such public sector employees that are highly value-oriented and motivated to serve the public interest – such as the HE leaders in the current sample (Schott & Ritz 2017).

Second, HE leaders also report that they worked in organizations that they perceive to being increasingly oriented and designed towards achieving goals postulated by the NPM paradigm in contrast to the traditional goals of academia. These quantitative results are in line with and complement prior findings of singular country studies applying qualitative methods in Portugal (Carvalho & Santiago 2010) and Germany (Hüther & Krücken 2018a). Specifically, top-level leaders in European HE emphasize that the power structures within HE organizations had actually become more hierarchical and centralized. This finding substantiates prior conceptual and case-based qualitative research by Olssen and Peters (2005), Broucker et al. (2015), Block et al. (2016), Kallio et al (2016), Hüther and Krücken (2016; 2018a), Lumino et al. (2017) with multi-country multi-site quantitative evidence.

The psychological costs of this incongruence in values and practices between HE leaders and their organizations can have detrimental consequences because it represents a breach in the psychological contract between HE leaders and their employing institutions resulting in HE leaders that engage in adverse coping strategies to counteract feelings of being powerless and ineffective (Rousseau & Parks 1993; Schott & Ritz 2017). This perceived loss of power and control is a consequence of the increased dissemination of the NPM paradigm in all areas of HE governance because NPM systematically transforms the fundamental goals of a traditional Humboldtian university by eradicating its baseline principles (Lorenz 2012): In the traditional paradigm, universities' core task is to provide a host structure for mostly autonomous individual researchers and lecturers to create an interactive network of local communities of individual agents who are mostly managed as disciplinary silos (Paradeise & Thoenig 2013). Consequently, HE leaders' traditional task was to create and govern organizations that were inherently value-driven institutions (Cha & Edmondson 2006) recognizing that value congruence is valuable in itself because it results in favorable signals of institutional reputation that attracts highly qualified, committed, and able members into the HE organization to help it realize its strategic goals (Arthur et al. 2006; Edwards & Cable 2009).

Yet, the paradigm of NPM suggests that a strict regime should be installed onto the individual members of the organization in order to ensure the meeting of quantifiable performance indicators as a measure of academic quality (Hüther & Krücken 2013).

This strict regime stands in contrast to the traditional European idea of academic collegiality and might hence alienate current and future members of the organization – i.e. researchers, lecturers, and staff – and thereby complicate human resource management and effective leadership. Eventually, the widespread prevalence of NPM-related leadership styles is likely to result in a substantial deterioration of the very core strategic resource of any HE organization, i.e. the motivation and commitment of its individual members (Lumino et al. 2017). Consequently, under the dominance of the NPM paradigm, person-organization value congruence cannot be achieved and striving to achieve excellence in leadership is rendered futile, creating a meso-level paradox (Hoffman et al. 2011). With the extensive quantitative results of the COCOPS dataset, the empirical results of the current study also add substantially to prior evidence by Gow and Dufour (2000), Dunleavy et al. (2005), Hood and Peters (2004), as well as Shin (2010) that indicated that NPM is actually a paradoxical paradigm in itself.

5.1.2 NPM escalates the Power of Political Stakeholders on HE [meso]

The aforementioned paradox is the result of micro- and meso-level incongruence between the traditional values of academia and the NPM paradigm. But the growing prevalence of NPM-related policy reforms also changes the power structures of the HE landscape on the macro level of leadership. Under the premise of growing integration of NPM-informed reform trends in HE, **RQ2's first topic of interest** concerned the degree to which external political stakeholders exerted influence on top-level leaders in HE and the degree to which these stakeholders designed HE policy reforms. In-line with prior research (Deem & Brehony 2005; Ferlie et al. 2008; Santiago & Carvalho 2015; Broucker et al. 2018), top-level leaders in European HE point out that the power of external political stakeholders is growing steadily and that power structures within HE organizations have become more hierarchical and centralized compared to pre-NPM reforms.

The descriptive results respond to **RQ2's second topic of interest** by revealing that top-level leaders in European HE often interact with external stakeholders, and that – as a consequence of politically informed policy reforms – external political stakeholders regularly interfere with the internal processes of decision making within HE organizations. Consequently, organizational goal orientation has shifted towards

NPM-related criteria of performance and quality evaluation. But what are the consequences of this politically imposed paradigm shift? In the data explored in the current study, HE leaders regard this political influence as critical and they clearly indicate that a higher degree of politicization resulted in more shortsighted policies and their skepticism resonates with prior research raising questions about the dark sides of NPM-informed HE politicization (Olssen & Peters 2005; Bessant et al. 2015; Lumino et al. 2017). Well-meaning political actors tend to pressure HE leaders toward implementing neoliberal policies because they believe that such managerial reforms arbitrarily contribute to the efficiency of university management and to the quality of teaching and research. This is problematic in a double sense, not only because it threatens the principle of academic freedom safeguarded by institutional independence, but also because empirical research does not support this claim (e.g., Gow and Dufour 2000; Hood and Peters 2004; Dunleavy et al. 2005). For instance, Shin's (2010) study on institutional performance in US HE shows that formalized measures of performance-based accountability do not lead to higher HE performance. Some scholars argue that NPM-motivated reforms forced upon the HE sector by political stakeholders often severely neglect the additional costs resulting from administrative change, e.g. renewal of administrative processes, marketing, hiring new staff and solving "problems caused by poor decisions" (Waitere et al. 2011; Shin & Jung 2013:617).

One of the most important and most often neglected consequences is the phenomenon of *pseudo-compliance* which is also captured by the quantitative results of the current study: Although respondents explicitly report that the influence of political actors on their organization is growing, the multivariate results shows that the degree to which political involvement actually relates to a higher or lower perceived relevance of NPM-reform is statistically non-significant. Prior results of Anderson's (2008) study based on qualitative interviews with 30 academic professionals in Australian universities show that HE professionals use various forms of resistance to managerialism imposed on them because managerialism stands in conflict with traditional academic culture and values. With her close-up study, Anderson (2008) reveals that academics generally reject the newly-dominant managerial culture introduced by the NPM paradigm by taking on opposing discursive positions but also by everyday micro-level tactics of pseudo-compliance with the managerial structures imposed onto their work

environment. As “clever people, [… academics seem especially] skilled in rebellion and innovation” (Anderson 2008: 267) who routinely subvert the managerial practices enforced by NPM-related reforms with stoic and most often latent but very effective acts of resistance and non-compliance (Lorenz 2012). Although changes in institutional power structures and logics translate automatically into the micro-patterns of universities’ communication culture, prior research shows that – despite lip-service committing to the productivity standards imposes by the NPM-paradigm – strategic issues of research and teaching that lie at the heart of universities remain largely autonomous despite increasing managerial regulation (Blaschke et al. 2014).

The multivariate model of the current study shows that the degree of political involvement does neither directly nor indirectly influence the degree to which leaders in HE evaluate HE policy reforms that deviate from the traditional PVO-related paradigm. This indicates that quasi-compliance is an issue with NPM-reforms in HE organizations, which effectively still follow a chaotic garbage-can model of strategy development (Cohen 1972; Hüther & Krücken 2018a).

A second major consequence of the power structures shifting towards empowering political and external agents is that it creates HE systems that are both stagnant and passivated by, first, creating barriers to innovation and by, second, disempower HE leaders: Firstly, prior research by Bergland (2018) explicitly points out that NPM-related reforms in HE resulted in organizational structures that are incompatible to the collaborative generation of scientific knowledge. Bergland (2018) argues that the intensification of pressure to specialize into increasingly narrow disciplinary niches is hostile to the practices necessary for interdisciplinary cooperation in research. This is a paradoxical macro-level downside of the prevalence of NPM-related reforms in European HE because at the same time HE organizations are increasingly encouraged to differentiate themselves from other organizations by providing innovative cutting-edge scientific research that is most likely the product of the synergetic collaboration between scientific disciplines. Secondly, the comprehensive introduction of NPM-related policy reforms has the potential to fundamentally diminish the power of leaders in HE even though decision processes do become more centralized and hierarchical. A large number of quantitative and qualitative studies show that the academic world rightfully recognized and cherished leaders as highly effective if they *fostered collegiality and collaboration* (Fernandez 2008; Gibbs et al. 2008; Bryman & Lilley

2009; Collinson & Collinson 2009; de Boer & Goedegebuure 2009; Kleihauer et al. 2013; Gonaim 2016) by explicitly *involving and empowering their subordinates* (Fernandez 2008; Gibbs et al. 2008; Bryman & Lilley 2009; Collinson & Collinson 2009; de Boer & Goedegebuure 2009; Cardno 2013; Gonaim 2016), *inspiring* (Gibbs et al. 2008; Keith & Buckley 2011; Kleihauer et al. 2013) and *protecting* the other members of their HE organizations on all hierarchical levels (Fernandez 2008; Bryman & Lilley 2009; Collinson & Collinson 2009; Vilkinas 2014). Paradoxically, NPM in HE decreases the likelihood of HE leaders fulfilling these roles because it demands hierarchical power structures that create pressures of accountability and competition that result in the members of the organization being less receptive for leaders' influence and strategies.

Both mayor findings regarding politicization are extremely important for HE leadership in practice because they are quantitative evidence that pseudo-compliance with the principles of NPM are not only present in the relationship between HE leaders and subordinates on the micro and meso level but also in the relationship between HE leaders in their role of *de facto* subordinates to political external stakeholders exercising their power on the meso and macro level of HE governance.

5.1.3 NPM leverages unsustainable Policy Reforms in HE [macro]

RQ3 focusses on HE leaders' perception, i.e. evaluation, of the general relevance and prevalence of the NPM paradigm in current reform trends executed in European HE, in short: the perceived acceptability of the NPM paradigm in contemporary HE. The results of the multivariate analysis on **RQ3** are intriguing because they reveal that even though HE leaders are personally motivated by PVO-related values, this personal value orientation becomes insignificant for predicting leaders' stated perceived relevance of NPM-informed policies for HE reform.

The sample report a strong pressure to respond to growing HE austerity by realizing budget cuts especially by reducing the costs of specific programs and by postponing and cancelling new projects instead of engaging in process innovations. This is problematic because openness to innovation is one of the critical success factors of HE leadership effectiveness (Kleihauer et al. 2013; Vilkinas 2014). This dilemma is both emotionally challenging – by increasing stress levels, dissatisfaction, and

organizational dissociation – and demotivating as it is in contrast to the traditional values advocated by academia (see 5.1.1). Furthermore, this value incongruence is likely to alienate staff and thus erode the most critical resource of any HE organization in the long run. Prior research by Penney and Spector (2005) found that these negative consequences of NPM reforms are accelerated if people additionally hold negative affectivity to their work environment. This is a likely situation with the sample of the current study because HE leaders of Europe witness their professional environment as changing before their eyes into a system unaligned with their individual values and believes as academics. As a consequence, individuals are especially more likely to engage in counterproductive work behavior, incivility, institutional deviance, and organizational rule breaking (Penney & Spector 2005; Cha & Edmondson 2006).

Consequently, the results of the multivariate analysis could be interpreted as the manifestation of a symptomatic coping mechanism called *professional identity dissociation*. Leaders dissociate their individual value preferences and attitudes in favor of taking on a *professional identity* in their work-related context which is a typical psychological response in behavioral dilemmas (Jacoby & Kelley 1992; Meyer & Hammerschmid 2006; Dolan & Sharot 2012). This second – professional – identity is characterized by having a much higher tendency to preferring the NPM paradigm over the PVO paradigm and it is this second, professional persona's value trade-offs that reliably predict respondents' evaluation of the relevance of NPM. This is a novel and important finding because it strongly indicates how top-level executive leaders in HE dissociate their individual – potentially learned academic – identity that is in favor of PVO from another, NPM-informed professional identity of the manager-leader in charge of implementing policies that are unsustainable and undesirable in the PVO paradigm (Salancik & Pfeffer 1978; Kraimer 1997). In-line with prior conceptual research by Meyer and Hammerschmid (2006), the multi-variate findings suggest that this identity is an attitudinal coping mechanism that is potentially socially constructed by the incongruently aligned institutional context and its logics. Being ideologically and identically separated from their academic staff, HE leaders report that respecting PVO is especially relevant for the efficiency of HE policy reforms even though they simultaneously report that NPM-related characteristics are essential for achieving effectivity in HE leadership – especially if leaders are highly committed to their organizations.

The multivariate analysis also reveals that leaders with high organizational commitment and those with a higher tendency to trade-off PVO- for NPM-related values in a professional context are actually more likely to report the prevalence of the PVO paradigm – and its relevance – in HE policy reforms. This finding seems puzzling – or even hypocrite – at first because high organizational and role commitment is typically regarded as a critical success factor for leadership effectiveness in HE (Gibbs et al. 2008; Bryman & Lilley 2009; Collinson & Collinson 2009; Keith & Buckley 2011; Cardno 2013; Kleihauer et al. 2013; Gonaim 2016) but it is likely that respondents who are highly committed or who tend to implicitly recognize that their personal and professional values are incongruent might feel an implicit urge to counterbalance this psychological struggle by overcompensating in their response behavior (Cha & Edmondson 2006) – a classic issue of a *social desirability bias* (Fisher 1993; Hsee et al. 2008) in role conflicts (Latack 1981). There are at least two reasons why HE leaders could (implicitly) regard answering in a pro-NPM way as something socially undesirable: The first is a pro-social and rational motive of *organizational sustainability* and the second is a de-facto *lack of real authority*.

Organizational sustainability. The first reason is related to their identity as superiors that feel obliged to care about their staff and who have learned that this is the default of appropriate behavior in academia in a socially constructive and path dependent way (Salancik & Pfeffer 1978; Kraimer 1997). In the traditional PVO-informed academia, this behavior makes sense for both emotional pro-social motives but also for economically rational motivations grounded in considerations on how to successfully retain their academic subordinates who are the critical resource of the organization they govern: Prior studies show that in many countries that adopted private sector corporation styles of management and leadership into their HE systems this change often results in severe personal disadvantages for the individuals working in these systems eventually driving out the most able candidates and employees (Anderson 2008). In contrast, HE managerialism informed by the neo-classical paradigm is designed to reduce public resources by replacing public service by private or quasi-market provision in an organizational environment of market-based competition disregarding the importance of latent colleges for HE excellence (Shin & Jung 2013; Hattke et al. 2016). This results in higher workloads and declining job security for HE professionals on the micro level as they are forced to pursue efficiency and budget cuts

to fulfill performance-based measures of accountability systems as well as increased competition within and between countries' HE systems on the macro level (Shin & Jung 2013). In a globalized and inhomogeneous HE landscape, the combined effect of increased red tape, organizational competition, and individual-level value incongruence might in fact result in less commitment of the most highly qualified academic staff to their current alma mater and might actually encourage researchers and lecturers to relocate. Consequently and paradoxically, NPM policies might actually consume the strategic resource of HE organizations much more quickly and in a less sustainable way than policies that take into account PVO.

These unintended side effects of NPM policy reforms are especially challenging for HE leaders because they are trapped in the middle (see results discussed in 5.1.2) and charged with implementing those unsustainable reforms against better knowledge. The psychological costs of this dilemma are high and help explain the multivariate findings of the current study further: Put under the internal and especially external pressure to implement NPM-related reforms anyway, HE leaders might feel torn between their responsibility toward the wellbeing and satisfaction of their staff and the demands put upon themselves personally and strategically. Consequently, it is *socially undesirable* to opt for the value incongruent option of advocating pro-NPM reforms, even though the political macro-environment, the organizational meso-situation, and HE leaders' personal economic micro-evaluation might demand it.

Authority. The second reason is that responding pro-PVO provides psychological relief in the prospect of failure in this complex and conflicting network of demands. HE leaders are in a tricky situation when actually striving to implement (potentially necessary) NPM-informed policy reforms to make their organization fit for survival in a globalized knowledge economy because – despite their formal position – they might actually lack *real authority* to implement actual change: In many European countries, HE organizations are organized as professor-oriented systems, in which academics with high autonomy and prestige are deeply involved in decision making with a focus on internal accounting mechanisms. In contrast, in market-based systems of academia – i.e. the Anglo-American tradition of HE provision – leaders in HE possess less autonomy because they are held accountable towards external stakeholders and political actors to a much higher degree (Shin & Jung 2013). At the same time, HE

leaders in some countries (e.g. Germany) often do not possess the *functional* authority to execute their hierarchical power granted by their position. Based on an in-depth analysis of the German HE sector, Hüther and Krücken (2013) argue that this absence of real power at the department level (leaders and deans) was one of the main barriers of *pure* implementation of NPM in Germany. Hüther and Krücken (2013) point out that the power of leaders is based on their abilities and willingness to sanction their subordinates by providing or withholding rewards and penalties. Yet, leaders socialized in the traditional Humboldtian concept of HE organization might be implicitly or explicitly unwilling to execute these sanction mechanisms and might thus be unable to implement NPM-related chances – a classic dilemma. Extensive research in cognitive psychology shows that people generally avoid blame and try to compensate the emotional and cognitive burden of such dilemmas by dissociation of their personal character from the situation, creating a professional role they take on as a protective mechanism (Weaver 1986; Schwartz & Sulitzeanu-Kenan 2004; Hood 2014; Bisgaard 2015).

Consequently, the lack of de-facto authority, person-organization and person-environment value incongruence, and increased pressure to implement unsustainable policy reforms are the main factors of the seemingly unsolvable dilemma of HE leadership in the age of NPM.

5.2 Limitations & Future Research

The empirical evidence of this study is based on the analysis of covariances between micro-, meso-, and macro-level variables. While those covariances can be used to test and falsify the initial model that presumed several direct and indirect effects between its IVs and its DVs (namely, the perceived acceptability of NPM in HE leadership), these covariances are not fit to test causal mechanisms. Consequently, the revised empirical model can only present a limited claim that there *is* a relationship – a statistical association – between the IVs and DVs – which is again moderated by contextual factors such as the financial crisis and growing politicization of HE organizations – but the model is unable to disentangle the direction of this effect in the sense of clearly differentiating cause and effect. Future studies with using an experimental setup with randomly distributed stimuli will be able to target this research gap by.

Since the data were raised with a singular, one-time survey – in contrast to conducting a long-term or panel study – it is very likely that at least parts of the IVs are actually influenced by the DVs and by the contextual variables by processes of latent behavioral reinforcing loops to some degree. For instance, it is possible that the de-facto prevalence of certain NPO-related reform trends in certain HE organizations (Q17) may already have fed back latently into these organizations' HR processes because the implementation of NPM-related policies sends direct and indirect signals for future candidates for employment. Extensive prior research on the attraction effects of person-organization fit (e.g. Adkins et al. 1994; Verquer et al. 2003; Arthur et al. 2006; Hoffman & Woehr 2006; Sekiguchi & Huber 2011) suggests that it is possible that the signal that an HE organization pushes forward NPM-informed policy reforms and strategies will appeal especially strongly to candidates that implicitly or explicitly prefer the NPM over the PVO paradigm. This self-selection effect is accompanied by the homophily bias in personnel selection because HR managers tend to unconsciously prefer future candidates that are similar to themselves personally but also comparatively more similar to the existent workforce (Hitt & Barr 1989; McPherson et al. 2001; Kets & Sandroni 2014). Consequently, NPM-supporters will be both more likely to apply for and be granted a position in those organizations and will relatively dominate the pool of potential future employees (Ritz & Waldner 2011). Gradually, the NPM reforms might have resulted in a value *and* culture shift in HE organizations that is actually so prevalent that it is not clear whether HE leaders' pro-NPM or pro-PVO attitudes are independent from their experiences at work or whether these experiences are informed by their (assumptions) on their organizational cultures or the politicized environment of their organizations. Singular survey studies are only one minute in time and cannot definitely disentangle cause and effect. Future research conducting follow-up studies could help solve this hen-and-egg problem by, firstly, replicating the COCOPS survey with the population of HE high-level executives exclusively and, secondly, by conducting survey experiments (e.g. with vignettes) to investigate specific relationships between leaders' individual traits, organizational politicization, and the acceptability of NPM in HE.

Furthermore, it is important to note that the COCOPS survey does not explicitly differentiate between respondents working in the policy area of education in general and HE. This is an important caveat for the generalizability and reliability of the results

the present study. Its results should not be arbitrarily transferred but it is possible that leaders in HE hold different preferences toward the application of NPM-related management styles compared with leaders who work in organizations exclusively charged with managing the provision of education on the primary and secondary levels. The sample comprises both executive members of university councils, presidents of universities, but also public servants in several administrative bodies. Unfortunately, the data does not provide explicit information to characterize respondents' position further for reasons of privacy. However, the participants of the COCOPS survey are very likely to be the very same public servants that are actually involved in policy making and implementation on all levels of education because they may, for instance, work in the Ministry of Education in their respective countries.

16 out of the in-total 18 European countries studied in the present study do not explicitly differentiate their administrative ministerial systems into such public organizations that are exclusively in charge with exclusively managing HE in contrast to managing education in general.[11] These two exceptions are Denmark and France both of which comprise public organizations explicitly in charge of HE combined with the departments of research and innovation, respectively. Consequently, the high-level executives who make up the sample of the current study are most likely involved in making strategic decisions in issues regarding policy implementations on matters related to *both* general and HE. Hence, the study results are not exclusive to HE. This institutional overlap in high-level executives' tasks – in the form of being active in both education in general and HE particularly – implies two things: On the one hand, the study cannot claim biunique specificity on the topic of HE but only education in general which is a caveat for the generalizability of the findings. On the other hand, this institutional overlap strongly underlines the scientific and practical relevance of the findings of this study because it indicates that the high prevalence of the NPM paradigm in policy making is present on *all levels of educational* policy making, strongly emphasizing that the value paradigm founding the principle of educational policy making has shifted throughout Europe. Consequently, it is fair to assume that

[11] This information was retrieved from each country's official governmental homepages as of 30th November 2018. See Appendix A.6 for more detail.

the empirical results of this study still provide substantial evidence for the managerial practices in the specific policy area of *higher* education as well.

Another limitation is that the survey mainly contains single-item Likert-type survey questions instead of multi-item scale measures that were validated a-priori. The COCOPS research consortium argues that this limitation is due to research pragmatism in two ways. First, the authors aptly argue that using full scale measures for attitude items would have resulted in a survey far too lengthy for the busy target population of the survey which would have resulted in a dramatic decrease in response rates (Hammerschmid et al. 2013). This is a fair argument because senior executives are extremely busy and completing the survey in its current form already took respondents approximately 30 minutes. Second, the authors argue that the COCOPS study is the first of its kind which means that validated scales particularly targeted at public sector – and especially HE – leaders. Consequently, there simply were no specific measures available and the elite sample of the COCOPS project did not allow for extensive a-priori scale development with this specific target sample because it would consume the already tine total target population to a considerable degree, which would lead to considerable confounding. Although using single-item measures on attitudinal and preferential quantitative research imposes substantial limits on the reliability of findings, it was the only feasible approach for the COCOPS project. Using single-item attitude measures is problematic because such items or quasi-scales are more likely to being misinterpreted by the respondents and might, hence, be distorted much easier than multi-item validated scales. To inhibit this risk, scholars replicating the questionnaire in future research might want to use validated multi-item measures on topics such as individuals' risk propensity (item seven of q25) and their trust in others (item eight of q25) by employing – for instance – Madden et al.'s (2009) *Probability Discounting Questionnaire* or Yamagishi and Yamagishi's (1994) six-item Likert-type *General Trust Scale*.

Lastly, the COCOPS study follows a long tradition of studies on administrative elites (Aberbach et al. 1981; Enticott et al. 2008). Administrative elites are members of an organization that have exclusive knowledge about said organizations (Hammerschmid et al. 2013). They can share this knowledge with higher reliability and accuracy then the regular members of said organizations to exercise power and leverage

organizational change. This aloof position has substantial downsides for conducting research on these specific individuals. Elite survey data can be substantially biased by *source bias* because senior HE executives might have an implicit or explicit bias towards reporting favorable outcomes with a greater likelihood than unfavorable outcomes. Consequently, their perception – and, hence, survey response – might not necessarily be representative for the state of their organization as a whole (Frazier & Swiss 2008; Hammerschmid et al. 2013). On the other hand, HE leaders are the actors that are most central to stirring the strategic wheel in their organization and it is fair to assume that there is no reason to respond in a socially desirable way in an anonymous survey such as the one conducted by COCOPS.

5.3 Conclusion: Redefining Leadership in an Age of Creative Destruction

The current study adds substantially to the current body of scientific knowledge by providing novel evidence that the NPM-related value conflict experienced by HE leaders is not a country-level but a *fundamental multi-level problem of the HE sector in Europe* – and potentially beyond. Distilled in an innovative mixed-methods way from the large COCOPS dataset and from prior research on the effects of NPM on HE leadership, its results provide strong empirical evidence for the prevalence of a fundamental value and paradigm conflict in the European HE sector. In a HE landscape that is forced to embrace the neoclassical paradigm of hierarchical leadership in a marketized and competitive environment, HE leaders are pressured by external political stakeholders to implement short-term oriented policy reforms that are both alien to the traditional values of academia and hostile for sustainable and interdisciplinary collaboration, creating fundamental value and goal conflicts. Shaking the very essence of academic life, NPM is the epitaph of an age of creative destruction for the traditional system of collegial leadership in HE institutions. The results of the current studies show that the role of leaders in HE is fundamentally redefined at this very moment and although studies as early as Holzer and Lane's (1977) symposium on productivity in HE anticipated this transformation, the issue is still unresolved and manifests in HE leaders' struggle in balancing these conflicting demands.

The HE landscape is changing into a marketized, interconnected, digitized environment of competing public and for-profit actors who gradually and pragmatically transition from PVO toward NPM-informed concepts of leadership and

incentivized neoliberalism. Some of the individual and corporate actors of HE loudly and enthusiastically advocate this value transition while others silently and fatalistically try to cope with this metamorphosis. With societies' transformation into a globalized knowledge economy, it is essential for policy makers, practitioners, and scholars to acknowledge these changes and struggles and to respond to them by developing practical means and innovative ideas for value- and goal-congruent reforms.

Universities and other educational organizations of HE will become the central institutions of postindustrial societies because they create societies' most central (public) good – scientific knowledge (Bell 1973; Conceição et al. 1998; Marginson 2007) – and although the paradigm of NPM has changed institutional logics of HE on a global scale, HE leadership in practice is not powerless in redefining the predominant command of NPM's seemingly coercive productivity orientation into something more sustainable (Meyer & Hammerschmid 2006).

Acknowledging the fiscal crisis of 2008, the academic world was forced to heed to an amplified call to realize NPM's principles of politicized managerialism eroding value-based legitimacy in HE. Since the year 2010, the scientific discourse has gained considerable momentum in researching the positive and especially the negative effects of doing so but it has not solved the seemingly unamendable conflict between NPM's simplistic demand for *productivity* and *public value* in HE (Meyer & Hammerschmid 2006; Winter 2009). Since HE leaders cannot turn back time, the key to solving the issue of value- and goal-incongruence between the traditional ideas of academia and the neoclassical paradigm forced unto the HE sector lies in the original core principle of NPM itself: In the practice of NPM, productivity means getting more done for the same amount of (monetary) resources or getting the same for fewer (monetary) resources (Holzer & Lane 1977). The – still – unresolved question of HE leadership is *more of what* and the *same of what*?

The answer to this problem is reminding oneself that, in its core idea, NPM relates to both *outputs* and *outcomes*. Outputs are goods and services that an organization makes available for use by the individuals associated with it. Outcomes are the benefits, effects, and impacts of outputs on recipients: for instance, *teaching is an output*, while *learning is an outcome* (Holzer & Lane 1977). Obviously, outputs and outcomes are

related to each other, yet they are fundamentally different and in practice several decades in the spirit of NPM resulted in a severe neglect of the *outcome* dimension in HE policy and leadership practice. Coping mechanisms, pragmatism, and a too narrow focus on red tape, performativity odds, and number crunching has resulted in a too narrow and too politicized discourse on what productivity in HE actually means. The clue to this riddle is in remembering the origins of NPM as a *principle aimed toward improving* public sector organizations in a way to enable them to achievement *their* goals and not only to increase arbitrary quantifiable outcomes for management. Interpreted in a holistic way NPM does not have to be lived in fundamental contrast to the traditional values of HE but for too long stakeholders and He leaders held a too narrow focus on cost saving strategies and global competition when pressured to implement NPM-related policy reforms.

HE Leaders have not forgotten about this broader perspective (Carvalho & Santiago 2010) but struggle with putting it into practice of university leadership because the paradigmatic conflict between the NPM and the PVO paradigm results in a paradox: On the one hand, large providers of public HE become more isomorph and homogeneous regarding their meso-level organizational structure (Hüther & Krücken 2016). This result echoes prior research findings by Paradeise and Thoenig (2013) who tested the degree to which (economic) quality standards of excellence required by external stakeholders (labor markets and political actors) resulted in extreme pressures on university leadership. On the other hand, the European educational sector itself becomes more heterogenic in order to create clusters of HE providers (networks of organizations) that are more differentiated from their (purposed) competitors on the global market for HE, leading to more diverse clustering on the macro-level than ever before. One way to break this circle is through the use of technology, especially the digitization of HE media for teaching, learning, and research by using open educational resources (OER), open access repositories for collaboration, and transparent procedures to integrate as many stakeholders as possible and build reputation both for altruistic and pro-social reasons but also for the self-interest of HE organizations (Sclater 2010) because in

> *"[t]his time of great change, of shifting paradigms, provides the context in which universities have to consider the changing nature of the academic*

> *research enterprise itself. It is important that they take responsibility and not to only extrapolate the past but instead […] analyze the full range of opportunities of the future"* (Ehlers & Schneckenberg 2010: 5).

Here, we might find an upside in diverting from the classic Humboldt model of a research university because the external pressure to differentiate might create more diversity, more openness, and more procedural rejuvenation. Specifically, Paradeise and Thoenig (2013) point out that it is these struggles between *reputation*-based (NPM) and *excellence*-based (PVO) coping strategies create different topologies of universities that might fundamentally change the landscape of European HE toward more innovative and responsive institutions.

However, there is a downside to this dark horse as well. Managerial reforms in HE strongly influence academic life (Shin & Jung 2013), especially regarding work conditions in HE: HE marketization can have a devastating effect on HE employees' motivation across all levels of the organization, deteriorating intrinsic motivation and increasing stress levels (Shin & Jung 2013). Effectively, market-oriented managerial reforms in HE have caused academics' autonomy to shrink, which is fatal but it is exactly these areas of independent professional activity of which organizational attachment and satisfaction is created (Shin & Jung 2013). If leaders want to counteract these negative effects, one way is to engage in leadership as the *management of meaning* to save and translate the traditional values of academia into an environment sculptured by NPM. Consequently, HE leaders should amend this value schism by asking *what is public value in HE*, and *whose public good* are they curating?

The answer to these questions will be highly country- and culture-specific and with commercialization having taken root in HE, the disintegration of the ancient ivory tower of academia is irreversible. HE leaders, policy makers, and HE scholars will have to develop new ideas, new structures, and new roles within this conflicting environment. Otherwise the trend toward commodifying the HE sector by reducing the faculty to the status of dependent employees and by commercializing the outcomes of their work – not for the public interest but in order to internalize profits – will ultimately and irreversibly make HE serve the interest of the corporate world only and not the civil society as a whole (Bok 2003: 5 et seq.).

HE leaders might not be able to stop this trend completely, but they *are* able to stir it into a certain more fitting, more sustainable, more value-congruent direction. HE leaders hold unique positions of the HE system – both pivot figures at the intersection of the micro- and meso-level as well as the meso- and macro-level – and this fulcrum is inherently powerful. HE leaders must once again learn to use their own legitimacy and strategic leverage. Through symbolic and charismatic leadership, HE leaders have the power to create psychological frames and order within an overwhelming, contradictious and conflictual dynamic organizational environment (Smircich & Morgan 1982). In this position, HE leaders provide essential motivational service to their subordinates by realizing affective congruence between conflicting institutional challenges. By doing so, they automatically serve their organizations as well because they enhance their organizations' legitimacy (Newcombe & Ashkanasy 2002; Edwards & Cable 2009) and thus diminish the power of external, political, and agenda-driven stakeholders. HE leaders have not forgotten about the essential significance of public values for science, knowledge, and teaching in a free society, because as Habermas and Blazek (1987: 3) put it:

> *"[a]n institution remains functional only so long as it vitally embodies its inherent idea. Should its spirit evaporate, an institution will petrify into something merely mechanical, like a soulless organism reduced to dead matter. Not even the university can continue to form a whole once the unifying bond of its corporative consciousness dissolves."*

By retrieving their own strength by, waking up from the current paradigm-induced paralysis, HE leaders will redefine the idea of the university in the face of NPM and – hence – path their organizations' way towards sustainable legitimacy and value-congruent survival in the age of creative destruction.

6 REFERENCES

Aberbach, J. D., Putnam, R. D., and Rockman, B. (1981). *Bureaucrats and Politicians in Western Democracies*. Harvard University Press: Cambridge (MA).

Adkins, C. L., Russel, C. J., and Werbel, J. D. (1994). Judgments of fit in the selection process: The role of work value congruence. *Personnel Psychology*, 47(3):605–623.

Allen, N. J. and Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63(1):1–18.

Anderson, G. (2008). Mapping academic resistance in the managerial university. *Organization*, 15(2):251–270.

Arthur, W., Bell, S. T., Villado, A. J., and Doverspike, D. (2006). The use of person-organization fit in employment decision making: An assessment of its criterion-related validity. *Journal of Applied Psychology*, 91(4):786–801.

Barney, J. B. (2011). *Gaining and Sustaining Competitive Advantage. International Edition*. Pearson, Boston.

Barzelay, M. and Armajani, B. J. (1992). *Breaking through bureaucracy: A new vision for managing in government*. University of California Press: Oxford (UK).

Bass, R. (1999). The scholarship of teaching: What's the problem? *Inventio: Creative Thinking about Teaching and Learning*, 1(1):1-10.

Bell, D. (1973). *The Coming of Post-Industrial Society: A Venture in Social Forecasting*. Basic Book: New York (NY).

Belsley, D. A., Kuh, E., and Welsch, R. E. (1980). *Regression Diagnostics: Identifying Influential Data and Sources of Collinearity*. Wiley: New York (NY).

Bergland, B. (2018). The incompatibility of neoliberal university structures and interdisciplinary knowledge: A feminist slow scholarship critique. *Educational Philosophy and Theory*, 50(11):1031–1036.

Bessant, S. E. F., Robinson, Z. P., and Ormerod, R. M. (2015). Neoliberalism, new public management and the sustainable development agenda of higher

education: History, contradictions and synergies. *Environmental Education Research*, 21(3):417–432.

Bisgaard, M. (2015). Bias will find a way: Economic perceptions, attributions of blame, and partisan-motivated reasoning during crisis. *The Journal of Politics*, 77(3):849–860.

Blalock, H. M. (1963). Correlated independent variables: The problem of multicollinearity. *Social Forces*, 42(2):233–237.

Blaschke, S., Frost, J., and Hattke, F. (2014). Toward a micro foundation of leadership, governance, and management in universities. *Higher Education*, 68:711–732.

Block, M., Khvatova, T., and Lichy, J. (2016). A critical view on the transformational effects of new business models in higher education: A comparison of Germany and Russia. In: Daly, P., Reid, K., Buckley, P., and Doyle, E., editors, *Innovative Business Education Design for 21st Century Learning*, 131–143. Springer: Cham.

Bok, D. (2003). *Universities in the Marketplace: The Commercialization of Higher Education*. Princeton University Press: Princeton (NJ).

Bolden, R. and Petrov, G. (2014). Hybrid configurations of leadership in higher education employer engagement. *Journal of Higher Education Policy and Management*, 36(4):408–417.

Bordieu, P. (1998). *Practical Reason: On the Theory of Action*. Stanford University Press: Stanford (CA).

Broucker, B., Wit, K. D., and Leisyte, L. (2015). An evaluation of new public management in higher education: Same rationale, different implementation. *EAIR 37th Annual Forum in Krems, Austria*, 1–33.

Broucker, B., Wit, K. D., and Verhoeven, J. C. (2018). Higher education for public value: Taking the debate beyond new public management. *Higher Education Research & Development*, 37(2):227–240.

Brunson, S. D., Couch, R., and Matthews, G. J. (2015). Education Reform and Cross-sector Financing: A practice-based approach. In: Bryson, J. M., Crosby, B. C., and Bloomberg, L. *Creating Public Value in Practice. Advancing the Common*

Good in a multi-sector, shared-power, no-one-wholly-in-charge world. Taylor & Francis Group: Boca Raton, 129–144.

Bryman, A. (2007). Effective leadership in higher education: A literature review. *Studies in Higher Education*, 32(6):693–710.

Bryman, A. and Lilley, S. (2009). Leadership researchers on leadership in higher education. *Leadership*, 5(3):331–346.

Burke, P. J. and Reitzes, D. C. (1991). An identity theory approach to commitment. *Social Psychology Quarterly*, 54(3):239–251.

Cameron, A. C. and Trivedi, P. K. (1992). The information matrix test: Its components and implied alternative hypotheses. http://cameron.econ.ucdavis.edu/research/imtest_impliedalternatives_revision1992.pdf (retrieved: 30th Nov. 2018).

Campbell, R. F. (1957). *Administrative Behaviour in Education*. Harper & Row: New York.

Cardno, C. (2013). Images of academic leadership in large New Zealand polytechnics. *Journal of Higher Education Policy and Management*, 35(2):124–135.

Carpenter, J. P. and Seki, E. (2006). Competitive work environments and social preferences: Field experimental evidence from a Japanese fishing community. *Contributions in Economic Analysis & Policy*, 5(2):1–23.

Carvalho, T. and Diogo, S. (2018). Exploring the relationship between institutional and professional autonomy: A comparative study between Portugal and Finland. *Journal of Higher Education Policy and Management*, 40(1):18–33.

Carvalho, T. and Santiago, R. (2010). Still academics after all. *Higher Education Policy*, 23(3):397–411.

Cha, S. E. and Edmondson, A. C. (2006). When values backfire: Leadership, attribution, and disenchantment in a values-driven organization. *The Leadership Quarterly*, 17(1):57–78.

Chatelain-Ponroy, S., Mignot-Gérard, S., Musselin, C., and Sponem, S. (2018). Is commitment to performance-based management compatible with commitment to university publicness? Academics' values in French universities. *Organization Studies*, 39(10):1377–1401.

Chatterjee, S. and Hadi, A. S. (1986). Influential observations, high leverage points, and outliers in linear regression. *Statistical Science*, 1(3):379–393.

COCOPS (2012). *COCOPS Dataset Codebook. Executive Survey on Public Sector Reform in Europe – Views and experiences from senior executives*. http://www.cocops.eu/wp-content/uploads/2013/06/Survey-Codebook.pdf (retrieved 21st Nov. 2018).

Cohen, M. D. and March, J. G. (1974). *Leadership and Ambiguity: the American College President*. The Harvard Business School Press: Boston (MA).

Cohen, M. D., March, J. G., and Olsen, J. P. (1972). A garbage can model of organizational choice. *Administrative Science Quarterly*, 17(1):1–25.

Collinson, D. and Collinson, M. (2009). Blended leadership: Employee perspectives on effective leadership in the UK further education sector. *Leadership*, 5(3):365–380.

Conceição, P., Heitor, M. V., and Oliveira, P. (1998). Expectations for the university in the knowledge-based economy. *Technological Forecasting and Social Change*, 58:203–214.

David, P. A. and Foray, D. (2003). Economic fundamentals of the knowledge society. *Policy Futures in Education*, 1 (1):20–49.

de Boer, H. and Goedegebuure, L. (2009). The changing nature of the academic deanship. *Leadership*, 5(3):347–364.

de Winter, J. (2013). Using the Student's t-test with extremely small sample sizes. *Practical Assessment, Research & Evaluation*, 18(10):1–12.

Deem, R. (2004). The knowledge worker, the manager-academic and the contemporary UK university: New and old forms of public management? *Financial Accountability and Management*, 20(2):107–128.

Deem, R. and Brehony, K. J. (2005). Management as ideology: The case of 'new managerialism' in higher education. *Oxford Review of Education*, 31(2):217–235.

Delanty, G. (2001). The university in the knowledge society. *Organization*, 8 (2):149–153.

Dolan, R. and Sharot, T. (2012). *Neuroscience of Preference and Choice – Cognitive and Neural Mechanisms*. Academic Press, London.

Dunleavy, P., Margetts, H., Bastow, S., and Tinkler, J. (2005). New public management is dead – long live digital-era governance. *Journal of Public Administration Research and Theory*, 16(3):467–494.

Dunn, W. N. and Miller, D. Y. (2007). A critique of the new public management and the neo-weberian state: Advancing a critical theory of administrative reform. *Public Organization Review*, 7(4):345–358.

Edwards, J. R. and Cable, D. M. (2009). The value of value congruence. *Journal of Applied Psychology*, 94(3):654–677.

Ehlers, U.-D. and Schneckenberg, D. (2010). *Changing Cultures in Higher Education*. Springer: Berlin & Heidelberg.

Ellis, P. D. (2010). *The Essential Guide to Effect Sizes. Statistical Power, Meta-Analysis, and the Interpretation of Research Results*. Cambridge University Press: Cambridge.

Enders, J. and Westerheijden, D. F. (2014). The Dutch way of new public management. *Policy and Society*, 33(3):189–198.

Engle, R. F. (1982). Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation. *Econometrica*, 50(4):987–1007.

Enticott, G., Boyne, G. A., and Walker, R. M. (2008). The use of multiple informants in public administration research: Data aggregation using organizational echelons. *Journal of Public Administration Research and Theory*, 19(2):229–253.

Etzioni, A. (1965). Dual leadership in complex organizations. *American Sociological Review*, 30(5):688–698.

Etzkowitz, H., Webster, A., Gebhardt, C., and Cantisano Terra, B. R. (2000). The future of the university and the university of the future: Evolution of ivory tower to entrepreneurial paradigm. *Research Policy*, 29:313–330.

Ferlie, E., Musselin, C., and Andresani, G. (2008). The steering of higher education systems: A public management perspective. *Higher Education*, 56(3):325–348.

Fernandez, S. (2008). Examining the effects of leadership behavior on employee perceptions of performance and job satisfaction. *Public Performance & Management Review*, 32(2):175–205.

Fisher, R. J. (1993). Social desirability bias and the validity of indirect questioning. *Journal of Consumer Research*, 20(2):303–315.

Foucault, M. (1988). *Politics, philosophy, culture: Interviews and other writings, 1977-1984*. Routledge: New York (NY).

Frazier, M. A. and Swiss, J. E. (2008). Contrasting views of results-based management tools from different organizational levels. *International Public Management Journal*, 11(2):214–234.

Gebert, D. (1991). Die Mühsal der offenen und die Attraktivität der geschlossenen Gesellschaft. *Zeitschrift für Personalforschung / German Journal of Research in Human Resource Management*, 5(3):201–217.

Giauque, D., Biget, S. A., and Varone, F. (2015). HRM practices sustaining PSM: When values congruency matters. *International Journal of Public Sector Performance Management*, 2(3):202.

Giauque, D., Ritz, A., Varone, F., and Anderfuhren-Biget, S. (2011). Resigned but satisfied: The negative impact of public service motivation and red tape on work satisfaction. *Public Administration*, 90(1):175–193.

Gibbs, G., Knapper, C., and Piccinin, S. (2008). Disciplinary and contextually appropriate approaches to leadership of teaching in research-intensive academic departments in higher education. *Higher Education Quarterly*, 62(4):416–436.

Gonaim, F. (2016). A department chair: A life guard without a life jacket. *Higher Education Policy*, 29(2):272–286.

Gordon, C. (1991). Governmental rationality: An introduction. In: Burchell, G., Gordon, C., and Miller, P., editors, *The Foucault effect: Studies in governmentality*, 1–51, University of Chicago Press: Chicago (IL).

Gosling, J., Bolden, R., and Petrov, G. (2009). Distributed leadership in higher education: What does it accomplish? *Leadership*, 5(3):299–310.

Gould-Williams, J. S., Mostafa, A. M. S., and Bottomley, P. (2013). Public service motivation and employee outcomes in the Egyptian public sector: Testing the mediating effect of person-organization fit. *Journal of Public Administration Research and Theory*, 25(2):597–622.

Gow, J. I. and Dufour, C. (2000). Is the New Public Management a paradigm? Does it matter? *International Review of Administrative Sciences*, 66(4):573–597.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17 (Winter Special Issue):109–122.

Groeneveld, R. A. and Meeden, G. (1984). Measuring skewness and kurtosis. *The Statistician*, 33(4):391–399.

Gronn, P. (2000). Distributed properties: A new architecture for leadership. *Educational Management Administration & Leadership*, 28(3):317–338.

Gutounig, R. (2015). *Wissen in digitalen Netzwerken. Potenziale Neuer Medien für Wissensprozesse*. Springer Fachmedien: Wiesbaden.

Habermas, J. (1975). Moral development and ego identity. *Telos*, 1975(24):41–55.

Habermas, J. and Blazek, J. R. (1987). The idea of the university: Learning processes. *New German Critique*, 41 (Spring – Summer):3–22.

Hammerschmid, G. (2015). Dokumentation auf Studienebene für Studie ZA6599 COCOPS Executive Survey on Public Sector Reform in Europe – Views and Experiences from Senior Executives (reduzierte Version). doi:10.4232/1.12475.

Hammerschmid, G., Oprisor, A., and Štimac, V. (2013). COCOPS executive survey on public sector reform in Europe – research report. https://repub.eur.nl/pub/40935/COCOPS%20report%203.pdf (retrieved 22nd Nov. 2018).

Hammerschmid, G., Van de Walle, S., Andrews, R., and Bezes, P. (2016). *Public Administration Reforms in Europe: The View from the Top*. Edward Elgar Publishing: Cheltenham.

Hattke, F., Vogel, R., and Woiwode, H. (2016). When professional and organizational logics collide: Balancing invisible and visible colleges in institutional

complexity. In: Frost, Jetta, Hattke, F., and Reihlen, M., editors, *Multi-Level Governance in Universities*, 235–256. Springer: Cham.

Hintze, J. L. and Nelson, R. D. (1998). Violin plots: A box plot-density trace synergism. *The American Statistician*, 52(2):181–84.

Hitt, M. A. and Barr, S. H. (1989). Managerial selection decision models: Examination of configural cue processing. *Journal of Applied Psychology*, 74(1):53–61.

Hoffman, B. J., Bynum, B. H., Piccolo, R. F., and Sutton, A. W. (2011). Person-organization value congruence: How transformational leaders influence work group effectiveness. *Academy of Management Journal*, 54(4):779–796.

Hoffman, B. J. and Woehr, D. J. (2006). A quantitative review of the relationship between person-organization fit and behavioral outcomes. *Journal of Vocational Behavior*, 68(3):389–399.

Holzer, M. and Lane, F. S. (1977). Productivity in higher education: An introduction. *Public Productivity Review*, 2(5):4.

Hood, C. (1991). A public management for all seasons? *Public Administration*, 69:3–19.

Hood, C. (2014). Accountability and blame-avoidance. In: Bovens, M., Goodin, R. E., and Schillemans, T., editors, *The Oxford Handbook of Public Accountability*, 603–616, Oxford University Press: Oxford.

Hood, C. and Peters, G. (2004). The middle aging of new public management: Into the age of paradox? *Journal of Public Administration Research and Theory*, 14(3):267–282.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., and Gupta, V. (2004). *Culture, Leadership, and Organizations: The Globe Study of 62 Societies*. Sage Publications, Thousand Oaks (CA).

Hsee, C. K., Hastie, R., and Chen, J. (2008). Hedonomics: Bridging decision research with happiness research. *Psychological Science*, 3(3):224–243.

Hüther, O. and Krücken, G. (2013). Hierarchy and power: A conceptual analysis with particular reference to new public management reforms in German universities. *European Journal of Higher Education*, 3(4):307–323.

Hüther, O. and Krücken, G. (2016). Nested organizational fields: Isomorphism and differentiation among European universities. In: Popp Berman, E., and Paradeise, C. editors, *The University Under Pressure*, 53–83. Emerald: Bingley.

Hüther, O. and Krücken, G. (2018). Recent reforms in the German higher education system. In: Hüther, O. and Krücken, G., editors, *Higher Education in Germany – Recent Developments in an International Perspective*, 9–37. Springer: Cham.

Hüther, O. and Krücken, G. (2018a). German higher education institutions as organizations. In: Hüther, O. and Krücken, G., editors, *Higher Education in Germany: Recent Developments in an International Perspective*, 133–176. Springer: Cham.

Jacoby, L. L. and Kelley, C. M. (1992). A process-dissociation framework for investigating unconscious influences: Freudian slips, projective tests, subliminal perception, and signal detection theory. *Current Directions in Psychological Science*, 1(6):174–179.

Jensen, U. T., Andersen, L. B., and Holten, A.-L. (2017). Explaining a dark side: Public service motivation, presenteeism, and absenteeism. *Review of Public Personnel Administration*, 1–24.

Johansson, L.-G. (2016). *Philosophy of Science for Scientists*. Springer International Publishing: Cham.

Jörissen, B. and Marotzki, W. (2008). Neue Bildungskulturen im "Web 2.0": Artikulation, Partizipation, Syndikation. In: von Gross, F., Morotzki, W., and Sander, U., editors, *Internet – Bildung – Gemeinschaft*, 211–235, VS Verlag für Sozialwissenschaften: Wiesbaden.

Kaiser, H. F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika*, 23:187–200.

Kaiser, H. F. (1974). An index of factor simplicity. *Psychometrika*, 39(1):31–36.

Kallio, K.-M., Kallio, T. J., Tienari, J., and Hyvonen, T. (2016). Ethos at stake: Performance management and academic work in universities. *Human Relations*, 69(3):685–709.

Keith, S. J. and Buckley, P. F. (2011). Leadership experiences and characteristics of chairs of academic departments of psychiatry. *Academic Psychiatry*, 35(2):118–121.

Kelley, K. and Preacher, K. J. (2012). On effect size. *Psychological Methods*, 17(2):137–152.

Kets, W. and Sandroni, A. (2014). A belief-based theory of homophily. https://www.aeaweb.org/conference/2015/retrieve.php?pdfid=1180 (retrieved: 30th Nov. 2018).

Kirk, R. E. (1996). Practical significance: A concept whose time has come. *Educational and Psychological Measurement*, 56(5):746–759.

Kleihauer, S., Stephens, C., Hart, W., and Stripling, C. (2013). How six women deans of agriculture have attained their leadership role: A qualitative study. *Journal of Agricultural Education*, 54(2):15–28.

Kogan, M. (2000). Higher Education Communities and Academic Identity. *Higher Education Quarterly*, 54(3):207–216.

Kraimer, M. L. (1997). Organizational goals and values: A socialization model. *Human Resource Management Review*, 7(4):425–447.

Kristof, A. L. (1996). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49(1):1–49.

Kuhn, T. S. (1970). *The Structure of Scientific Revolutions*. University of Chicago Press: Chicago (IL).

Latack, J. C. (1981). Person/role conflict: Holland's model extended to role-stress research, stress management, and career development. *Academy of Management Review*, 6(1):89–103.

Leana, C. R. and Pil, F. K. (2006). Social capital and organizational performance: Evidence from urban public schools. *Organization Science*, 17(3):353–366.

Lenzen, D. (2015). *Eine Hochschule der Welt. Plädoyer für ein Welthochschulsystem*. Springer Fachmedien: Wiesbaden.

Lewin, K. (1938). *The Conceptual Representation and the Measurement of Psychological Forces*. Duke University Press: Durham (NC).

Lichy, J. (2016). Introduction. In: Daly, P., Reid, K., Buckley, P., and Doyle, E., editors, *Innovative Business Education Design for 21st Century Learning*, 71–73. Springer: Cham.

Liu, B. and Perry, J. L. (2014). The psychological mechanisms of public service motivation. *Review of Public Personnel Administration*, 36(1):4–30.

Lorenz, C. (2012). If you're so smart, why are you under surveillance? Universities, neoliberalism, and new public management. *Critical Inquiry*, 38(3):599–629.

Luhmann, N. (1969). *Legitimation durch Verfahren*. Suhrkamp Verlag: Berlin.

Lumby, J. (2013). Distributed leadership: The uses and abuses of power. *Educational Management Administration & Leadership*, 41(5):581–597.

Lumino, R., Gambardella, D., and Grimaldi, E. (2017). The evaluation turn in the higher education system: Lessons from Italy. *Journal of Educational Administration and History*, 49(2):87–107.

Madden, G. J., Petry, N. M., and Johnson, P. S. (2009). Pathological gamblers discount probabilistic rewards less steeply than matched controls. *Experimental and Clinical Psychopharmacology*, 17(5):283–290.

Marginson, S. (1997). How free is academic freedom *Higher Education Research & Development*, 16(3):359–369.

Marginson, S. (2007). The public/private divide in higher education: A global revision. *Higher Education*, 53(3):307–333.

Marshall, A. (1916). *Principles of Economics*. Macmillan: London.

McArthur, J. (2011). Reconsidering the social and economic purposes of higher education. *Higher Education Research & Development*, 30(6):737–749.

McKelvey, B. and Aldrich, H. (1983). Population, natural selection, and applied organizational science. *Administrative Science Quarterly*, 28:101–128.

McPherson, M., Smith-Lovin, L., and Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1):415–444.

Meyer, R. E. and Hammerschmid, G. (2006). Changing institutional logics and executive identities. *American Behavioral Scientist*, 49(7):1000–1014.

Mintzberg, H. (1973). *The Nature of Managerial Work*. Harper & Row: New York (NY).

Mintzberg, H. (1989). *Mintzberg on Management: Inside our strange world of organizations*. Free Press: New York (NY).

Moher, D. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine*, 151(4):264.

Müller-Seitz, G. (2012). Leadership in interorganizational networks: A literature review and suggestions for future research. *International Journal of Management Reviews*, 14:428–443.

Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *The Academy of Management Review*, 23(2):242–266.

Newcombe, M. J. and Ashkanasy, N. M. (2002). The role of affect and affective congruence in perceptions of leaders: An experimental study. *The Leadership Quarterly*, 13(5):601–614.

Newman, J. H. (1959). *The idea of a university*. Image Books: New York (NY).

Nieke, W. and von Freytag-Loringhoven, K. (2014). Bildung durch Wissenschaft. Skizze einer universitären Wissenschaftsdidaktik im Rahmen des Projektes „KOSMOS – Konstruktion und Organisation eines Studiums in offenen Systemen“ für eine Vision des Lebenslangen Lernens (LLL) auf universitärem Niveau am Bildungsstandort Rostock. https://www.uni-rostock.de/fileadmin/uni-rostock/UniHome/Weiterbildung/KOSMOS/Kosmos_Dokumente/Nieke_Freytag_Bildung_durch_Wissenschaft.pdf (retrieved: 27th Nov. 2018).

OECD (1996). *The knowledge-based economy*, OECD General Distribution. http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=OCDE/GD%2896%29102&docLanguage=En (retrieved: 28th Nov. 2018).

Olssen, M. and Peters, M. A. (2005). Neoliberalism, higher education and the knowledge economy: From the free market to knowledge capitalism. *Journal of Education Policy*, 20(3):313–345.

Osborne, D. and Gaebler, T. (1992). *Reinventing Government: How the entrepreneurial spirit is transforming the public sector*. Plume.

Osborne, S. P. (2010). *The New Public Governance? Emerging Perspectives on the Theory and Practice of Public Governance*. Routledge: London.

O'Toole, J. (1995). *Leading Change: overcoming the ideology of comfort and the tyranny of custom*. Jossey-Bass: San Francisco (CA).

Paradeise, C. and Thoenig, J.-C. (2013). Academic institutions in search of quality: Local orders and global standards. *Organization Studies*, 34(2):189–218.

Penney, L. M. and Spector, P. E. (2005). Job stress, incivility, and counterproductive work behavior (CWB): the moderating role of negative affectivity. *Journal of Organizational Behavior*, 26(7):777–796.

Perry, J. L., Hondeghem, A., and Wise, L. R. (2010). Revisiting the motivational bases of public service: Twenty years of research and an agenda for the future. *Public Administration Review*, 70(5):681–690.

Perry, J. L. and Porter, L. W. (1982). Factors affecting the context for motivation in public organizations. *Academy of Management Review*, 7(1):89–98.

Raelin, J. A. (1995). How to manage your local professor. *Academy of Management Proceedings*, 1995(1):207–211.

Rhein, R. (2015). Hochschulisches Lernen – Eine analytische Perspektive. *Zeitschrift für Weiterbildungsforschung – Report*, 38 (3):347–363.

Ritz, A., Brewer, G. A., and Neumann, O. (2016). Public service motivation: A systematic literature review and outlook. *Public Administration Review*, 76(3):414–426.

Ritz, A. and Waldner, C. (2011). Competing for future leaders. *Review of Public Personnel Administration*, 31(3):291–316.

Rousseau, D. M. and McLean Parks, J. (1993). The contracts of individuals and organizations. *Research in Organizational Behavior*, 15:1–43.

Salancik, G. R. and Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, 23(2):224.

Salter, B. and Tapper, T. (2000). The politics of governance in higher education: The case of quality assurance. *Political Studies*, 48(1):66–87.

Santiago, R., Carvalho, T., and Sousa, S. (2015). NPM reforms and professionals in health and higher education in Portugal. *International Journal of Public Administration*, 38(11):757–768.

Schedler, K. and Proeller, I. (2000). *New Public Management*. Haupt Verlag.

Schott, C. and Ritz, A. (2017). The dark sides of public service motivation: A multi-level theoretical framework. *Perspectives on Public Management and Governance*, 1(1):29–42.

Schwartz, R. and Sulitzeanu-Kenan, R. (2004). Managerial values and accountability pressures: Challenges of crisis and disaster. *Journal of Public Administration Research and Theory*, 14(1):79–102.

Sclater, N. (2010). The organizational impact of open educational resources. In Ehlers, U.-D. and Schneckenberg, D., editors, *Changing Cultures in Higher Education*, 485–497. Springer: Berlin & Heidelberg.

Sekiguchi, T. and Huber, V. L. (2011). The use of person–organization fit and person–job fit information in making selection decisions. *Organizational Behavior and Human Decision Processes*, 116(2):203–216.

Senge, P. M. (1990). *The Fifth Discipline: The art & practice of the learning organization*. Doubleday-Currency: New York (NY).

Shepherd, S. (2018). Managerialism: An ideal type. *Studies in Higher Education*, 43(9):1668–1678.

Shin, J. C. (2010). Impacts of performance-based accountability on institutional performance in the U.S. *Higher Education*, 60(1):47–68.

Shin, J. C. and Jung, J. (2013). Academics job satisfaction and job stress across countries in the changing academic environments. *Higher Education*, 67(5):603–620.

Shore, C. (2008). Audit culture and illiberal governance: Universities and the politics of accountability. *Anthropological Theory*, 8(3):278–298.

Simon, H. A. (1945). *Administrative Behavior. A study of decision-making processes in administrative organizations*. The Free Press: New York (NY).

Smircich, L. and Morgan, G. (1982). Leadership: The management of meaning. *The Journal of applied behavioral science*, 18(3):257–273.

Student (1908). The probable error of mean. *Biometrika*, 6:1–25.

Taberner, A. M. (2018). The marketisation of the English higher education sector and its impact on academic staff and the nature of their work. *International Journal of Organizational Analysis*, 26(1):129–152.

Teelken, C. (2012). Compliance or pragmatism: How do academics deal with managerialism in higher education? A comparative study in three countries. *Studies in Higher Education*, 37(3):271–290.

Teelken, C. and Ferlie, E. (2012). *Leadership in the Public Sector: Promises and Pitfalls*. Routledge Chapman & Hall: New York (NY).

Thody, A. (1989). University management observed – a method of studying its unique nature *Studies in Higher Education*, 14(3):279–296.

Torres, C. A. (2011). Public universities and the neoliberal common sense: Seven iconoclastic theses. *International Studies in Sociology of Education*, 21(3):177–197.

Valle, M. (1999). Crisis, culture and charisma: The new leaders work in public organizations. *Public Personnel Management*, 28(2):245–257.

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. *Advances in Experimental Social Psychology*, 29:271–360.

Van de Walle, S., Steijn, B., and Jilke, S. (2015). Extrinsic motivation, PSM and labour market characteristics: A multilevel model of public sector employment preference in 26 countries. *International Review of Administrative Sciences*, 81 (4):833–855.

van Loon, N. M., Vandenabeele, W., and Leisink, P. (2015). On the bright and dark side of public service motivation: The relationship between PSM and employee wellbeing. *Public Money & Management*, 35(5):349–356.

Van Wart, M. (2003). Public-sector leadership theory: An assessment. *Public Administration Review*, 63(2):214–228.

Verquer, M. L., Beehr, T. A., and Wagner, S. H. (2003). A meta-analysis of relations between person–organization fit and work attitudes. *Journal of Vocational Behavior*, 63(3):473–489.

Vilkinas, T. (2014). Leadership provided by non-academic middle-level managers in the Australian higher education sector: The enablers. *Tertiary Education and Management*, 20(4):320–338.

Vingaard Johansen, U., Knudsen, F. B., Engelbrecht Kristoffersen, C., Stellfeld Rasmussen, J., Saaby Steffen, E., and Sund, K. J. (2017). Political discourse on higher education in Denmark: From enlightened citizen to homo economicus. *Studies in Higher Education*, 42(2):264–277.

Vogel, R. (2014). What happened to the public organization? A bibliometric analysis of public administration and organization studies. *The American Review of Public Administration*, 44 (4):383–408.

Voogt, J. (2012). Are teachers ready to teach in the knowledge society? Considerations based on empirical findings. In: Schulz-Zander, R., Eickelmann, B., Moser, H., Niesyto, H., and Grell, P., editors, *Jahrbuch Medienpädagogik 9*, 17–28. VS Verlag für Sozialwissenschaften: Wiesbaden.

Waitere, H. J., Wright, J., Tremaine, M., Brown, S., and Pausé, C. J. (2011). Choosing whether to resist or reinforce the new managerialism: The impact of performance-based research funding on academic identity. *Higher Education Research & Development*, 30(2):205–217.

Weaver, R. K. (1986). The politics of blame avoidance. *Journal of Public Policy*, 6(4):371–398.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48(4):817–838.

Winter, R. (2009). Academic manager or managed academic? Academic identity schisms in higher education. *Journal of Higher Education Policy and Management*, 31(2):121–131.

Wolverton, M. (1998). Champions, agents and collaborators: Leadership keys to successful systemic change. *Journal of Higher Education Policy and Management*, 20(1):19–30.

Yamagishi, T. and Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and Emotion*, 18:129–166.

Yukl, G., Gordon, A., and Taber, T. (2002). A hierarchical taxonomy of leadership behavior: Integrating a half century of behavior research. *Journal of Leadership & Organizational Studies*, 9(1):15–32.

APPENDICES

Appendix A.1: Details of systematic literature review

Figure A.1.1: PRISMA diagram of systematic review

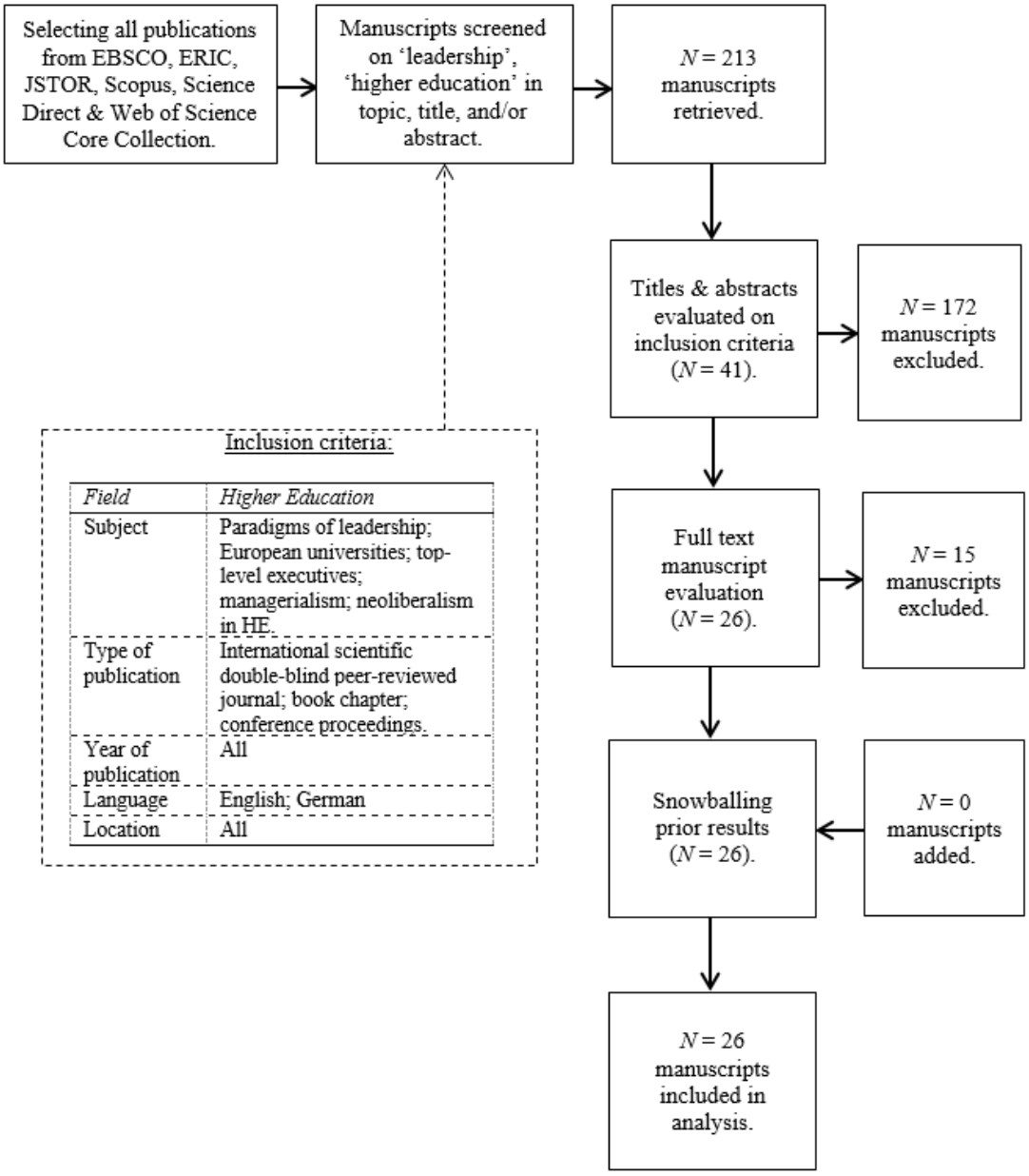


Table A.1.2: Search log

	Database
1	**EBSCO (EconLit with Full Text)** “"public management" "higher education" "leadership"”; **Results:** 34 hits. “"public management" "higher education"”; **Results:** 451 hits.
2	**EconBiz** Boolean/Phrase: AB "public management" AB "higher education" AND AB "leadership"; **Results:** 11 hits. Boolean/Phrase: AB "public management" AB "higher education"; **Results:** 35 hits.
3	**ERIC** abstract:”leadership” AND abstract:"public management" AND abstract:"higher education", **Descriptor:** Higher Education; **Results:** 7 hits. abstract:"public management" AND abstract:"higher education", **Descriptor**: Higher Education; **Results:** 15 hits.
4	**JSTOR** “((ab:("public management") AND ab:("higher education")) AND ab:("leadership"))”; **Results**: 0 hits. “(ab:("public management") AND ab:("higher education"))”; **Results:** hits.
5	**Science Direct** “qs="public management" AND "higher education" AND "leadership"&show=25&sortBy= relevance&articleTypes=FLA%2CCH&lastSelectedFacet=articleTypes”; **Results:** 178 hits. “qs=%22public%20management%22%20AND%20%22higher%20education%22&tak=%22public%20management%22%20AND%20%22higher%20education%22&articleTypes=FLA%2CCH&show=25&sortBy=relevance”; **Results**: 12 hits.
6	**Scopus** “TITLE-ABS-KEY ((public AND management) AND (higher AND education) AND (leadership)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON"))”; **Results:** 259 hits. “TITLE-ABS-KEY ((public AND management) AND (higher AND education)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON"))”; **Results:** 2,701 hits (including datasets and individual case data.
7	**Web of Science Core Collection (SSCI, SCI-EXPANDED, ESCI)** “public management” “higher education” “leadership”; **TOPIC**: ("public management" "higher education" "leadership") **Timespan**: All years. **Indexes**: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC; **Results:** 16 hits. “public management” “higher education”; **Search query: “TOPIC:** ("public management" and "higher education") **Timespan:** All years. **Indexes:** SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC.”; **Results**: 213 hits.

Table A.1.3: Overview of systematic review characteristics and findings

Author(s)	Year	Journal	Method	Focus	Country	Main findings
Bergland	2018	Educational Philosophy and Theory	Conceptual	NPM-reforms, knowledge creation.	UK	Neoliberal university structures are incompatible with interdisciplinary knowledge, their implementation creates a paradox.
Bessant et al.	2015	Environmental Education Research	Conceptual	Neoliberalism, NPM, ideology, sustainability of HE	UK	NPM-related control mechanisms both drive and limit sustainability in universities.
Blaschke et al.	2014	Higher Education	Longitudinal case study (N = 1); hierarchical cluster analysis (quantitative)	Leadership, Governance, Management-Trias. Micro-foundation	Germany	Institutional logics translate into micro-patterns of communication; despite increasing managerial regulation, core strategic issues of university research and teaching remain largely autonomous.
Block et al.	2016	Book chapter	Case study (N = 2)	Relevance of rankings (performance indicators); media.	Germany, Russia	Both countries are shifting away from the traditional Humboldt model of a research university towards NPM; resulting in value conflicts.
Broucker et al.	2015	Conference paper	Systematic review of policies	NPM-related reforms in policy making in OECD countries	Belgium, Finland, Hungary, Latvia, Lithuania, Netherlands, New Zealand, Portugal, UK, US	High prevalence of NPM-related reforms worldwide. There are indications on quasi-compliance since many countries use mechanisms that counterbalance pure market orientation, e.g. by means of collaboration and participation.
Broucker et al.	2018	Higher Education Research & Development	Conceptual	Unintended Effects of NPM in HE; Public value	.	Public value orientation as complementary model for HE governance; negative unintended consequences of NPM and political stakeholder influence are severely underestimated.
Carvalho & Diogo	2018	Journal of Higher Education Policy and Management	Semi-structured interviews (N = 47, qualitative) with top-level executives	Institutional autonomy; academic freedom	Portugal, Finland	Tendency toward increased organizational autonomy (strengthening of leadership and management) but decreased collegial decision-making; decrease of professional autonomy.

Carvalho & Santiago	2010	Higher Education Policy	Interviews (qualitative) with top-level executives (*N* = 26)	Identity, value orientation; academic culture; deans	Portugal	Despite feeling pressure to adapt to the NPM paradigm (*homo oeconomicus*), top-level executives still feel like academics and prefer to follow public value orientation.
Chatelain-Ponroy et al.	2018	Organization Studies	Survey (*N* = 1,817) (quantitative); PLS	Publicness; academic values; performance culture	France	NPM-related performance culture does not fit to traditional academic (i.e. public) value commitment; NPM might alienate staff.
Deem & Brehony	2005	Oxford Review of Education	Case study (*N* = 1) (qualitative)	Management reform as ideology; authority and class	UK	Managerial reforms are both political and technical; although NPM is no unitary ideology it serves the idea of the manager-academic using hierarchy (dominance) and power.
Enders & Wester-heijden	2014	Policy & Society	Case study (*N* = 1) (qualitative)	Quality assurance as an example for NPM-policy reform	Netherlands	NPM-related quality assurance in HE can be (ab)used to provide 'legitimacy through procedures' (Luhmann 1969).
Ferlie et al.	2008	Higher Education	Conceptual	Policy networks & regimes; narrative ideology of NPM	.	Political narratives are used to transfer NPM into HE, thus translating from one European state to another.
Hüther & Krücken	2013	European Journal of Higher Education	Case study (*N* = 1) (qualitative)	NPM, hierarchy, power, governance	Germany	HE leaders use the NPM paradigm to execute power through hierarchy; absence of real power at the department level as a barrier to NPM implementation.
Hüther & Krücken	2016	Book chapter	Conceptual	NPM and organizational isomorphism	Europe	European universities are simultaneously subject to isomorphism and growing differentiation.
Hüther & Krücken	2018a	Book chapter	Case study (*N* = 1) (qualitative)	History of NPM	Germany	Knowledge society transition creates pressure for HE reform. Value-incongruence between NPM and traditional values and structures in HE.
Kallio et al.	2016	Human Relations	Mixed methods: Survey (*N* = 966) (quantitative & qualitative)	Risk of NPM; HRM; performance management systems	Finland	Proliferation of performance-based evaluation systems is seen as a catalyst to changing the ethos of academic life and work to the negative.
Lumino et al.	2017	Journal of Educational Administration and History	Case study (*N* = 1) (qualitative)	Re-design of HE system; governmentality; pseudo-compliance	Italy	Strong influence of NPM on HE policy in Italy, the evaluation turn has created paradoxical risks, pseudo-compliance, depoliticization and fabrication.

Olssen & Peters	2005	Journal of Education Policy	Conceptual	Neoliberalism, knowledge capitalism	.	Knowledge capitalization as a consequence of neoliberal reform trends has both economic and politico-philosophical effects on HE.
Paradeise & Thoenig	2013	Organizational Studies	Case study (*N* = 27)	Academic quality; NPM; reputation, excellence.	France, Italy, Switzerland, US	The struggle between reputation-based and excellence-based coping strategies creates different topologies of universities (diversification).
Santiago & Carvalho	2015	International Journal of Public Administration	Survey (quantitative) (*N* = 112)	Influence of political actors; micro-level perspective; impact of NPM reforms	Portugal	Political actors (government), university top-level managers, unit directors, and professional boards all have strong influence on the (operative) regulation of universities and institutional decision-making.
Shepherd	2018	Studies in Higher Education	Semi-structures interviews (*N* = 70)	Managerialism; NPM; neoliberalism	UK	Ideal-type managerialism is only partially enacted in real universities.
Shin & Jung	2013	Higher Education	OLS Regression (quantitative) (*N* = 800+ cases per country)	Job satisfaction & stress of HE professionals	19 (7 European)	HE marketization (NPM) is significantly related with high stress. European countries are still in the high satisfaction group (high: Netherlands, Finland, Italy, Norway; low: UK, Germany, & Portugal).
Shore	2008	Anthropological Theory	Conceptual; case study (*N* = 1)	Audit culture; legitimacy and power though narratives.	UK	Negative societal consequences of power and value shift in HE; decreasing motivation of HE professionals and leaders.
Taberner	2018	International Journal of Organizational Analysis	Semi-structured interviews (*N* = 12) (qualitative)	Marketization of HE; value conflicts; micro-level impact on HE employees	UK	Mapping of six key themes of conflict between NPM and PVO; NPM increases stress and a feeling of powerlessness in HE employees.
Teelken	2012a	Studies in Higher Education	Interviews (qualitative) (*N* = 48 in 10 universities)	Negative HR-effects of managerialism in universities	Netherlands, Sweden, UK	As a result of NPM-related reforms, HE professionals dissociate from their organizations for pragmatic reasons; evaluations are perceived as means of punishment.
Vingaard Johansen et al.	2017	Studies in Higher Education	Critical discourse analysis of policy documents	Political discourse on educational policy; paradigm shift; knowledge society	Denmark	The political discourse on HE has moved from pluralistic to neoliberal reasoning emphasizing notions of globalization and competitiveness in a knowledge society.

Appendix A.2: Excerpt of the original COCOPS questionnaire

This appendix contains an excerpt of the original questionnaire by Hammerschmid et al. (2013) to document the explicit survey items used in the current study. For the full list of questionnaire items and the codebook, please refer to Hammerschmid et al (2012) and Hammerschmid et al. (2013). Please note that the following questionnaire items are cited directly from Hammerschmid et al. (2013) under the Creative Commons CC0 1.0 Universal Public Domain Dedication and that they were partially annotated by the author of this study using square brackets [] and *notes*.

From Part I. General Information

"This section seeks general information about your organization, and your position. It covers important background information for this research."

Q2. "Which policy area does your organization work in?" *(You may select more than one if they are commonly seen as one joint policy area in your country.)*

General government	☐
Foreign affairs	☐
Finance	☐
Economic affairs	☐
Infrastructure and transportation	☐
Defense	☐
Justice, public order & safety	☐
Employment services	☐
Health	☐
Other social protection and welfare	☐
Education	☐
Environmental protection	☐
Recreation, culture, religion	☐
Other *(please specify):* [open question]	☐

Note: Filter question.

Q4. "What kind of position do you currently hold?"

Top hierarchical level in organization	☐
Second hierarchical level in organization	☐
Third hierarchical level in organization	☐
Other *(please specify):* [open question]	☐

From Part II. Management and Work Practices of Your Organization

"In this section[,] we are interested in how you perceive your job and work experience along a number of dimensions. Please base your answers on your own experiences with your current job and observations of your current organization. We want to know 'how you perceive what is', not 'what you think should be'."

Q8. "To what extent do the following statements apply to your organization?"

	Strongly disagree						**Strongly agree**
	1	**2**	**3**	**4**	**5**	**6**	**7**
Our goals are clearly stated	☐	☐	☐	☐	☐	☐	☐
Our goals are communicated to all staff	☐	☐	☐	☐	☐	☐	☐
We have a high number of goals	☐	☐	☐	☐	☐	☐	☐
It is easy to observe and measure our activities	☐	☐	☐	☐	☐	☐	☐
We mainly measure inputs and processes	☐	☐	☐	☐	☐	☐	☐
We mainly measure outputs and outcomes	☐	☐	☐	☐	☐	☐	☐
We are rewarded for achieving our goals	☐	☐	☐	☐	☐	☐	☐
We face clear sanctions for not achieving our goals	☐	☐	☐	☐	☐	☐	☐
Our political leaders use indicators to monitor our performance	☐	☐	☐	☐	☐	☐	☐

Note: Item 5 reversed.

Q10. "Please indicate how frequently you typically interact with the following actors or bodies"

	Never 1	Rarely 2	Yearly 3	Monthly 4	Weekly 5	Daily 6
My responsible Minister	☐	☐	☐	☐	☐	☐
Other politicians	☐	☐	☐	☐	☐	☐
My administrative superiors and higher administrative levels	☐	☐	☐	☐	☐	☐
My direct staff	☐	☐	☐	☐	☐	☐
Subordinate agencies and bodies	☐	☐	☐	☐	☐	☐
Administrative units within my organization such as budget, personnel, IT etc.	☐	☐	☐	☐	☐	☐
Audit organizations, inspectorates and regulatory bodies	☐	☐	☐	☐	☐	☐
Other government departments outside my own organization	☐	☐	☐	☐	☐	☐
Local / regional government	☐	☐	☐	☐	☐	☐
Private sector companies	☐	☐	☐	☐	☐	☐
Trade union representatives	☐	☐	☐	☐	☐	☐
European Union institutions	☐	☐	☐	☐	☐	☐
International bodies (e.g. IMF, OECD, …)	☐	☐	☐	☐	☐	☐
Media	☐	☐	☐	☐	☐	☐

Notes: Items 1, and 3 to 6 internal interactions; items 2, and 7 to 14 external interactions.

Q12. "What is your view on the following statements?"

	Strongly disagree						Strongly agree	Cannot assess
	1	2	3	4	5	6	7	
Politicians respect the technical expertise of the administration.	☐	☐	☐	☐	☐	☐	☐	☐
Politicians regularly influence senior-level appointments in my organization.	☐	☐	☐	☐	☐	☐	☐	☐
In my organization politicians interfere in routine activities.	☐	☐	☐	☐	☐	☐	☐	☐
The administration and not the political level is the initiator of reforms or new policies.	☐	☐	☐	☐	☐	☐	☐	☐
Removing issues and activities from the realms of politics allows for more farsighted policies.	☐	☐	☐	☐	☐	☐	☐	☐

Notes: IV assessing the influence of political actors on managerial decision making within the organization.

Q14. "People in my organization…"

	Strongly disagree						Strongly agree
	1	**2**	**3**	**4**	**5**	**6**	**7**
…engage in open and honest communication with one another.	□	□	□	□	□	□	□
…share and accept constructive criticisms without making it personal.	□	□	□	□	□	□	□
…willingly share information with one another.	□	□	□	□	□	□	□
…have confidence in one another.	□	□	□	□	□	□	□
…have a high team spirit.	□	□	□	□	□	□	□
…are trustworthy.	□	□	□	□	□	□	□
…share the same ambitions and vision for the organization.	□	□	□	□	□	□	□
…enthusiastically pursue collective goals and mission.	□	□	□	□	□	□	□
…view themselves as partners in charting the organization's direction.	□	□	□	□	□	□	□

Note: Independent variable assessing organizational culture.

Q15. "When thinking about my work and the organization I work for…"

	Strongly disagree						Strongly agree
	1	**2**	**3**	**4**	**5**	**6**	**7**
I get a sense of satisfaction from my work.	□	□	□	□	□	□	□
I feel valued for the work I do.	□	□	□	□	□	□	□
I regularly feel overloaded or unable to cope.	□	□	□	□	□	□	□
I would recommend it as a good place to work.	□	□	□	□	□	□	□
I really feel as if this organization's problems are my own.	□	□	□	□	□	□	□
I would be very happy to spend the rest of my career with this organization.	□	□	□	□	□	□	□
It would be very hard for me to leave my organization right now, even if I wanted to.	□	□	□	□	□	□	□
I was taught to believe in the value of remaining loyal to one organization.	□	□	□	□	□	□	□
Things were better in the days when people stayed with one organization for most of their career.	□	□	□	□	□	□	□

Note: Independent variable assessing respondents' individual commitment.

From Part III. Public Sector Reform and the Fiscal Crisis

"We are now interested in your views on and experiences with administrative reform in your country, and also how the recent fiscal crisis affected the administration. Some questions are asking you for your personal evaluation of certain phenomena; others are purely interested in your observations. Again, please draw on your personal experience as a senior executive in the public sector."

Q16. "Compared with five years ago, how would you say things have developed when it comes to the way public administration runs in your country?"

Worse									**Better**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q17. "How important are the following reform trends in your policy area?"

	Not at all						**To a large extent**
	1	**2**	**3**	**4**	**5**	**6**	**7**
Public sector downsizing	☐	☐	☐	☐	☐	☐	☐
Citizen participation methods/initiatives	☐	☐	☐	☐	☐	☐	☐
Creation of autonomous agencies or corporatization	☐	☐	☐	☐	☐	☐	☐
Contracting out	☐	☐	☐	☐	☐	☐	☐
Focusing on outcomes and results	☐	☐	☐	☐	☐	☐	☐
Extending state provision into new areas	☐	☐	☐	☐	☐	☐	☐
Treatment of service users as customers	☐	☐	☐	☐	☐	☐	☐
Collaboration and cooperation among different public sector actors	☐	☐	☐	☐	☐	☐	☐
Internal bureaucracy reduction / cutting red tape	☐	☐	☐	☐	☐	☐	☐
Flexible employment	☐	☐	☐	☐	☐	☐	☐
Privatization	☐	☐	☐	☐	☐	☐	☐
Digital or e-government	☐	☐	☐	☐	☐	☐	☐
External partnerships and strategic alliances	☐	☐	☐	☐	☐	☐	☐
Mergers of government organizations	☐	☐	☐	☐	☐	☐	☐
Transparency and open government	☐	☐	☐	☐	☐	☐	☐

Q18. "Please indicate your views on public sector reform using the scales below. Public sector reforms in my policy area tend to be…"

	1	2	3	4	5	6	7	8	9	10	
Top down	□	□	□	□	□	□	□	□	□	□	Bottom up
Consistent	□	□	□	□	□	□	□	□	□	□	Inconsistent
Comprehensive	□	□	□	□	□	□	□	□	□	□	Partial
Driven by politicians	□	□	□	□	□	□	□	□	□	□	Driven by public officials / administration
Crisis and incident driven	□	□	□	□	□	□	□	□	□	□	Planned
Substantive	□	□	□	□	□	□	□	□	□	□	Symbolic
Contested by unions	□	□	□	□	□	□	□	□	□	□	Supported by unions
About cost-cutting & savings	□	□	□	□	□	□	□	□	□	□	About service improvement
No public involvement	□	□	□	□	□	□	□	□	□	□	High public involvement
Unsuccessful	□	□	□	□	□	□	□	□	□	□	Successful
Too much	□	□	□	□	□	□	□	□	□	□	Not enough

Notes: Independent variable assessing respondents' individual perception of the prevalence of the NPM- (left side) versus PVO- (right side) paradigm in HE policy; items 2, 3, and 6 reversed.

Q19. "Thinking about your policy area over the last five years how would you rate the way public administration has performed on the following dimensions:"

	Deteriorated significantly						**Improved significantly**
	1	**2**	**3**	**4**	**5**	**6**	**7**
Cost and efficiency	□	□	□	□	□	□	□
Service quality	□	□	□	□	□	□	□
Innovation	□	□	□	□	□	□	□
Policy effectiveness	□	□	□	□	□	□	□
Policy coherence and coordination	□	□	□	□	□	□	□
External transparency and openness	□	□	□	□	□	□	□
Citizen participation and involvement	□	□	□	□	□	□	□
Social cohesion	□	□	□	□	□	□	□
Internal bureaucracy reduction / cutting red tape	□	□	□	□	□	□	□
Ethical behavior among public officials	□	□	□	□	□	□	□
Equal access to services	□	□	□	□	□	□	□
Fair treatment of citizens	□	□	□	□	□	□	□
Staff motivation and attitudes towards work	□	□	□	□	□	□	□
Attractiveness of the public sector as an employer	□	□	□	□	□	□	□
Citizen trust in government	□	□	□	□	□	□	□

Q20. "In response to the fiscal crisis, how would you describe the broader approach to realizing savings in your policy area:" *(tick one only)*

Proportional cuts across-the-board over all areas	☐
Productivity and efficiency savings	☐
Targeted cuts according to priorities (reducing funding for certain areas, while maintaining it for the prioritized ones)	☐
None / no approach required (If you tick this answer please proceed directly to question 23)	☐

Q21. "In response to the fiscal crisis, to what extent has your organization applied the following cutback measures?"

	Not at all						**To a large extent**
	1	**2**	**3**	**4**	**5**	**6**	**7**
Staff layoffs	☐	☐	☐	☐	☐	☐	☐
Hiring freezes	☐	☐	☐	☐	☐	☐	☐
Pay cuts	☐	☐	☐	☐	☐	☐	☐
Pay freezes	☐	☐	☐	☐	☐	☐	☐
Cuts to existing programs	☐	☐	☐	☐	☐	☐	☐
Postponing or cancelling new programs	☐	☐	☐	☐	☐	☐	☐
Downsizing back offices	☐	☐	☐	☐	☐	☐	☐
Reducing front office presence	☐	☐	☐	☐	☐	☐	☐
Increased fees and user charges for users	☐	☐	☐	☐	☐	☐	☐

Q22. "As result of the fiscal crisis…"

	Strongly disagree						**Strongly agree**
	1	**2**	**3**	**4**	**5**	**6**	**7**
The power of the Ministry of Finance has increased.	☐	☐	☐	☐	☐	☐	☐
Decision making in my organization has become more centralized.	☐	☐	☐	☐	☐	☐	☐
The unit dealing with budget planning within my organization has gained power.	☐	☐	☐	☐	☐	☐	☐
The conflict between departments has increased.	☐	☐	☐	☐	☐	☐	☐
The power of politicians (vs. non-elected public officials) in the decision-making process has increased.	☐	☐	☐	☐	☐	☐	☐
The relevance of performance information has increased.	☐	☐	☐	☐	☐	☐	☐

Notes: IV assessing respondents' perception of changes in political influence.

From Part IV. Attitudes, Preferences and Personal Information

"In this last section we are interested in some of your work and public sector-related values and views. Please base your answers on your general opinion and personal values and views, i.e. they should not only relate to your immediate work experience and environment. The section closes with some questions that provide very important background information for the research."

Q23. "Public services often need to balance different priorities. Where would you place your own position?"

	1	2	3	4	5	6	7	
Quality	□	□	□	□	□	□	□	Efficiency
Equity	□	□	□	□	□	□	□	Efficiency
Following rules	□	□	□	□	□	□	□	Achieving results
Customer focus	□	□	□	□	□	□	□	Citizen orientation
State provision	□	□	□	□	□	□	□	Market provision
Tax financed services	□	□	□	□	□	□	□	User charges / fees

Notes: Item 4 reversed; left side: PVO-paradigm; right side: NPM paradigm.

Q24. "How important do you personally think it is in a job to have… [?]"

	Not important at all						Very important
	1	2	3	4	5	6	7
Interesting work	□	□	□	□	□	□	□
High income	□	□	□	□	□	□	□
Opportunities to help other people	□	□	□	□	□	□	□
Workplace security	□	□	□	□	□	□	□
Room to work independently	□	□	□	□	□	□	□
Good opportunities for advancement	□	□	□	□	□	□	□
Doing something that is useful to society	□	□	□	□	□	□	□
Independence in deciding the times of the day when I work	□	□	□	□	□	□	□
Status	□	□	□	□	□	□	□

Q25. "Please indicate how far you agree or disagree with the following statements"

	Strongly disagree						**Strongly agree**	**Prefer not to answer**
	1	**2**	**3**	**4**	**5**	**6**	**7**	
I believe that success depends on ability rather than luck.	☐	☐	☐	☐	☐	☐	☐	☐
I like taking responsibility for making decisions.	☐	☐	☐	☐	☐	☐	☐	☐
I make decisions and move on.	☐	☐	☐	☐	☐	☐	☐	☐
Being creative and thinking up new ideas are important to me.	☐	☐	☐	☐	☐	☐	☐	☐
I avoid doing anything that might upset the status quo.	☐	☐	☐	☐	☐	☐	☐	☐
Being successful is very important to me.	☐	☐	☐	☐	☐	☐	☐	☐
I like to take risks.	☐	☐	☐	☐	☐	☐	☐	☐
Believe that most people can be trusted.	☐	☐	☐	☐	☐	☐	☐	☐

Q26. "Are you…"

Male	☐
Female	☐

Q27. "How old are you?"

35 or less	☐
36-45	☐
46-55	☐
56-65	☐
66 or older	☐

Q28. "What is your highest educational qualification?"

Graduate degree (BA level)	☐
Postgraduate degree (MA level)	☐
PhD / doctoral degree	☐
Other (please specify): *[open question]*	☐

Q29. "What was the subject of your highest educational qualification? *(please tick two max.)"*

Law	☐
Business/management/economics	☐
Political science/public administration	☐
Other social sciences and humanities	☐
Medical science	☐
Natural sciences and engineering	☐
Other (please specify): [open question]	☐

Q30. "How many years have you been working…?"

	Less than 1 year	**1-5 years**	**5-10 years**	**10-20 years**	**More than 20 years**
… in the public sector	☐	☐	☐	☐	☐
… in your current organization	☐	☐	☐	☐	☐
… in your current position	☐	☐	☐	☐	☐
… in the private sector	☐	☐	☐	☐	☐
… in the non-profit sector	☐	☐	☐	☐	☐

Appendix A.3: Details of Factor Analysis of Q24

Figure A.3.1: Screeplot of eigenvalues (after varimax rotation)

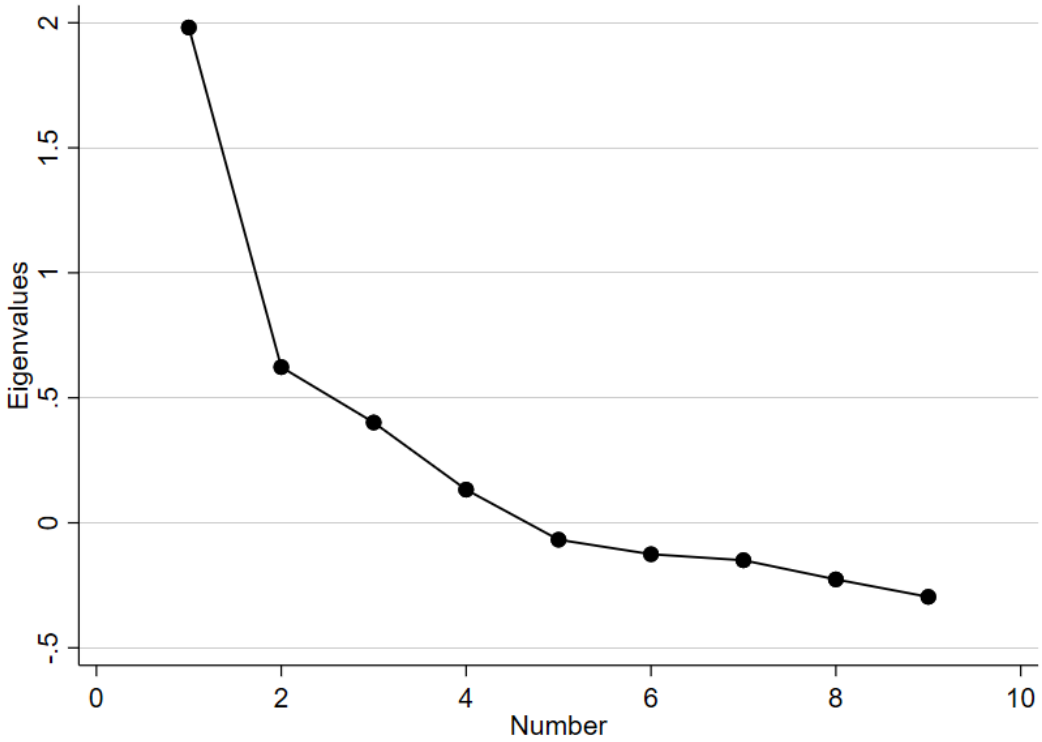


Table A.3.1: Pairwise interitem correlations

	Factor item	a	b	c	d	e	f	g	h
a	Interesting work	–							
b	High income	.23	–						
c	Help other people	.18	.17	–					
d	Job security	.06	.29	.32	–				
e	Room to make decisions	.31	.13	.17	.05	–			
f	Opport. for promotion	.17	.37	.14	.22	.34	–		
g	Useful for society	.23	-.01	.45	.05	.33	.23	–	
h	Flexible working hours	.13	.20	.06	.14	.26	.35	.14	–
i	Status	.08	.32	.16	.29	.21	.35	.15	.30

Note: All correlations significant with $p < 0.000$.

Appendix A.4: Details of Factor Analysis of Q8

Figure A.4.1: Screeplot of eigenvalues (after varimax rotation)

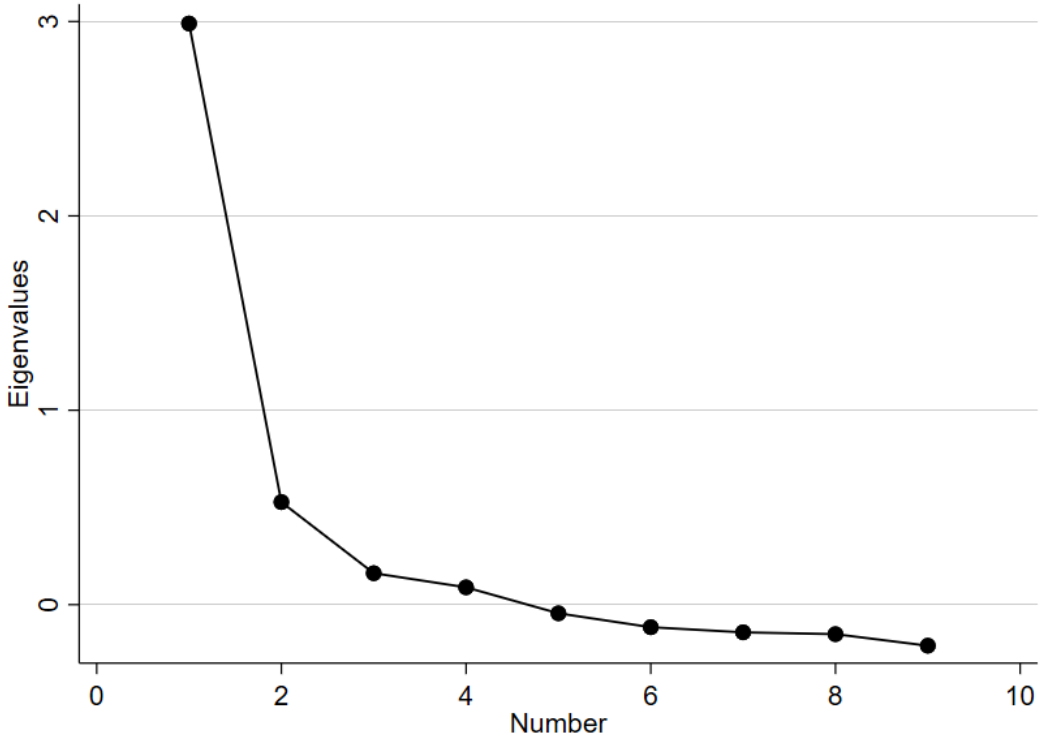


Table A.4.1: Pairwise interitem correlations

	Factor item	a	b	c	d	e	f	g	h
a	Goals clearly stated	–							
b	Goals communicated to staff	.78	–						
c	High number of goals	.26	.28	–					
d	Easy to observe and measure activities	.43	.41	.21	–				
e	Mainly measure inputs and processes	.16	.10	.13	.10	–			
f	Mainly measure outputs and outcomes	.40	.33	.20	.44	-.06	–		
g	Rewarded for achieving goals	.21	.22	.16	.23	.09	.27	–	
h	Clear sanctions for not achieving goals	.26	.23	.15	.30	.10	.32	.46	–
i	Politicians use indicators for monitoring performance	.20	.20	.09	.20	.11	.28	.35	.37

Note: All correlations significant with $p < 0.000$.

Appendix A.5: Correlation Table

Table A.5.1: Pairwise correlation analysis

Variable		a	b	c	d	e	f	g	h	i	j
a	**Q17**	–									
b	**Q18**	**.152**	–								
		(.001)									
c	**Q14**	**.156**	**.131**	–							
		(.001)	(.003)								
d	**Q15**	**.295**	**.110**	**.311**	–						
		(.000)	(.013)	(.000)							
e	**Q23**	**.146**	**.104**	-.042	-.018	–					
		(.002)	(.025)	(.361)	(.700)						
f	**$Q24_{NPM}$**	**.131**	-.017	.005	**.209**	.016	–				
		(.005)	(.701)	(.912)	(.000)	(.731)					
g	**$Q24_{PVO}$**	**.129**	.038	**.151**	**.164**	**-.125**	**.310**	–			
		(.005)	(.407)	(.001)	(.000)	(.005)	(.000)				
h	**Q25**	**.123**	.055	**.147**	**.169**	.017	**.221**	**.121**	–		
		(.009)	(.240)	(.001)	(.000)	(.721)	(.000)	(.007)			
i	**Q8**	**.371**	**.202**	**.365**	**.384**	.042	**.149**	**.221**	**.164**	–	
		(.000)	(.000)	(.000)	(.000)	(.371)	(.001)	(.000)	(.000)		
j	**$q10_{rel}$**	**.124**	.083	.059	.047	-.056	.074	.092	.056	**.111**	–
		(.017)	(.110)	(.241)	(.347)	(.294)	(.152)	(.075)	(.288)	(.027)	
k	**Q12**	.021	.045	**-.155**	.041	.015	.028	-.092	-.086	-.053	**.121**
		(.680)	(.375)	(.002)	(.410)	(.773)	(.575)	(.066)	(.092)	(.291)	(.032)
l	**q16**	**.128**	**.286**	**.216**	**.108**	.013	-.057	.006	**.126**	**.191**	-.012
		(.005)	(.000)	(.000)	(.013)	(.773)	(.205)	(.892)	(.006)	(.000)	(.814)
m	**Q19**	**.282**	**.271**	**.351**	**.278**	**.145**	.083	**.134**	.082	**.379**	**.145**
		(.000)	(.000)	(.000)	(.000)	(.002)	(.073)	(.004)	(.084)	(.000)	(.006)
n	**q20**	-.047	**.116**	.071	-.001	.000	.017	-.011	-.065	.055	-.041
		(.298)	(.008)	(.103)	(.988)	(.998)	(.693)	(.802)	(.150)	(.217)	(.415)
o	**age**	.038	.053	**.098**	.078	-.015	-.038	**.157**	**.235**	.076	.076
		(.405)	(.229)	(.024)	(.074)	(.746)	(.380)	(.000)	(.000)	(.086)	(.136)
p	**sex**	-.010	-.031	-.041	-.083	**-.109**	.056	**.140**	-.075	-.052	**-.152**
		(.830)	(.494)	(.353)	(.057)	(.015)	(.198)	(.001)	(.094)	(.245)	(.003)
q	**$q4_{low}$**	**-.133**	-.035	-.072	**-.120**	-.081	-.010	**-.117**	-.054	**-.139**	-.051
		(.003)	(.425)	(.089)	(.004)	(.071)	(.812)	(.007)	(.228)	(.001)	(.295)
r	**$q4_{middle}$**	.047	-.052	-.035	.080	-.035	.076	.051	-.082	.024	**-.117**
		(.286)	(.232)	(.411)	(.058)	(.436)	(.082)	(.243)	(.065)	(.565)	(.016)
s	**$q4_{high}$**	.075	.082	**.143**	.071	**.121**	-.067	.068	**.160**	**.154**	**.153**
		(.092)	(.063)	(.001)	(.093)	(.007)	(.124)	(.121)	(.000)	(.000)	(.002)

Notes: Pairwise correlation coefficients; respective *p*-values displayed below in brackets.

Table A.5.2: Pairwise correlation analysis (*cont.*)

Variable		k	l	m	n	o	p	q	r
a	**Q17**								
b	**Q18**								
c	**Q14**								
d	**Q15**								
e	**Q23**								
f	**$Q24_{NPM}$**								
g	**$Q24_{PVO}$**								
h	**Q25**								
i	**Q8**								
j	**$q10_{rel}$**								
k	**Q12**	–							
l	**q16**	-.040	–						
		(.428)							
m	**Q19**	.097	**.453**	–					
		(.064)	(.000)						
n	**q20**	.052	.063	**.124**	–				
		(.298)	(.151)	(.006)					
o	**age**	-.048	**-.118**	-.084	-.056	–			
		(.337)	(.007)	(.065)	(.193)				
p	**sex**	-.014	-.003	**-.126**	.045	-.043	–		
		(.778)	(.942)	(.006)	(.302)	(.312)			
q	**$q4_{low}$**	**.208**	-.039	-.021	.058	**-.142**	.043	–	
		(.000)	(.367)	(.644)	(.169)	(.001)	(.316)		
r	**$q4_{middle}$**	-.003	-.007	-.064	.015	**-.094**	.030	**-.493**	–
		(.953)	(.863)	(.157)	(.733)	(.026)	(.484)	(.000)	
s	**$q4_{high}$**	**-.209**	.052	**.107**	-.079	**.241**	**-.115**	**-.402**	**-.495**
		(.000)	(.223)	(.017)	(.064)	(.000)	(.007)	(.000)	(.000)

Notes: Pairwise correlation coefficients; respective *p*-values displayed below in brackets.

Appendix A.6: List of Ministries Responsible for HE by Country

Country	Ministry responsible for higher education
Austria	Federal Ministry of Education, Science, and Research; https://www.bmbwf.gv.at/
Croatia	Ministry of Science and Education; https://mzo.hr/en
Denmark	Ministry of Higher Education and Science; https://ufm.dk/en/the-ministry/organisation/the-ministry
Estonia	Ministry of Education and Research; https://www.hm.ee/en
Finland	Ministry of Education and Culture; https://minedu.fi/en/frontpage
France	Ministry of Higher Education, Research, and Innovation; http://www.enseignementsup-recherche.gouv.fr/
Germany	Federal Ministry of Education and Research; https://www.bmbf.de/en/index.html
Hungary	Ministry of Human Capacities; http://www.kormany.hu/en/ministry-of-human-resources
Iceland	Ministry of Education, Science, and Culture; https://www.government.is/ministries/ministry-of-education-science-and-culture/
Ireland	Department of Education and Skills; https://www.education.ie/en/
Lithuania	Ministry of Education and Science; http://www.smm.lt/main/web/en/
The Netherlands	Ministry of Education, Culture, and Science; https://www.government.nl/ministries/ministry-of-education-culture-and-science
Norway	Ministry of Education and Research; https://www.regjeringen.no/en/dep/kd/id586
Portugal	Ministry of Education; http://min-edu.pt
Serbia	Ministry of Education, Science, and Technological Development; http://www.mpn.gov.rs/?lng=lat
Spain	Ministry of Education and Vocational Training; http://www.mcu.es
Sweden	Ministry of Education and Research; https://www.government.se/government-of-sweden/ministry-of-education-and-research/
United Kingdom	Department of Education; https://www.gov.uk/government/organisations/department-for-education

Note: This information was retrieved from each country's official governmental homepages as of November 30th 2018.