



# It is still about bureaucracy in German faculties

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## Abstract

One of the main discussions in higher education is whether universities have appropriately adapted their structures and processes in response to the New Public Management (NPM) reforms and the Bologna Process. There are no profound empirical investigations on the extent to which faculties take elements of the reforms into account in terms of administrative processes and organizational structure dimensions according to the bureaucracy approach. This article examines how German faculty managers perceive bureaucratization processes by evaluating organizational structure dimensions. For this, we interpret interviews with 16 experts of German faculties through qualitative content analysis to extract in-depth manifestations of these dimensions. Our results show that the dimensions formalization, standardization, specialization, configuration, internal support functions, team self-coordination, and (de)centralization reflect elements of the NPM and Bologna reforms in the perception of faculty staff. These dimensions are complemented by decoupling mechanisms, i.e., discrepancies between formal structure and common practice, which hinder reform implementation. Besides, we identify elements of post-NPM approaches like network governance and neo-Weberianism supplementing reform implementation. We highlight (dys)functional effects of the dimensions by assessing them with criteria of effectiveness. Our results foster a deeper understanding of faculty organization by demonstrating levels of bureaucratization using profound examples of the interviewed persons.

**Keywords** Higher education organization · New public management · Bureaucracy · Organizational structure · Faculty management · Faculty organization

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## Introduction

Expectedly, reforms in response to the New Public Management (NPM) have profoundly changed the organization of universities as NPM emphasizes economic rationality and stronger hierarchies (Christensen, 2011). These reforms aim to increase competition, autonomy, and the managerial style of administrative processes in higher education institutions in most Western countries (Gualmini, 2008). Another part of change in Europe's higher education systems is the Bologna Process, which introduced uniformly-structured study programs (Bachelor/Master) to ensure internationalization and employability. Its main features *study structure* (flexibility, market-driven profiles), *credits* (standardization, mobility, effectiveness), and *quality assurance* (external control by accreditation agencies) can be interpreted as a response to NPM (Štech, 2011).

We focus our study on Germany since it has a relatively low reform level compared to other countries like Australia or the USA, caused by its federal structures with many veto possibilities, meaning that actors have better opportunities to prevent change, modify reform proposals, or delay decision and implementation processes (Bleiklie & Michelsen, 2013; Seeber et al., 2015). The German federal states (Länder) are mainly responsible for higher education policy and reform implementation. Before the 2006 federalism reform, universities were largely homogeneous in terms of performance and financing (Teichler, 2007). Then, the German higher education system differentiated into various groups, e.g., regional or research-oriented universities (Sich, 2014). Competition for resources replaced former allocation policy for research funding without performance criteria (Wissenschaftsrat, 2010). This development forced universities and faculties to organize themselves more effectively and efficiently.

Previous research describes the new university governance on the system level across different countries in detail (De Boer et al., 2007), but data about administrative organizations on the institutional level have hardly been recorded across higher education institutions (Blümel, 2016). Although academics perceive increased influence of a management culture across countries (Diogo et al., 2019), it is still unclear to what extent the reforms have been successfully realized (Nyhagen et al., 2017). One of the main reasons is that NPM does not provide a consistent set of practices, but management principles, which have been adapted in various ways (Donina & Hasanefendic, 2019). Because there is no legal framework, the Bologna reform is implemented voluntarily and very differently across participating European countries (Vögtle, 2019; Witte, 2006). Thus, a closer look at real organizational structural dimensions is necessary. However, the main focus of empirical studies on bureaucratic dimensions of organizational structures is on commercial organizations until now, while public administrations including faculty administrations, especially after NPM and Bologna reforms, are scarcely included (Kieser & Walgenbach, 2010).

We focus on organizational structures of faculties since the academic core processes research and teaching take place there. Faculties have the primary responsibility to develop suitable structures (Estermann et al., 2011), which profoundly affects their organization and corresponding bureaucracy processes (Osipian, 2014). Furthermore, NPM implementation has extended the decision-making scope of deans and faculty managers (De Boer et al., 2010). Deans, as heads of faculties, must engage in more management activities (Hagerer & Hoppe, 2019) for which they possibly have neither training nor capacity (Ylijoki, 2014). Possible solutions to counteract the increased workload are more positions in faculty man-

agement, professionalized administrative support structures, and process reorganizations (Blümel, 2016; Schneijderberg & Merkator, 2013). Change within faculties and their organizational structures is relevant because it profoundly affects students' and employees' situation. To manage faculties effectively, it is crucial to know how emerging bureaucratization processes are implemented within organizational structures.

Other studies analyze selected organizational structure dimensions with quantitative methods investigating the intensity of central university administration (Andrews & Boyne, 2014), the bureaucratization of scientific work (Walsh & Lee, 2015), or confirm the validity of existing structural dimensions for Turkish faculties (Erol & Ordu, 2018). However, this study is the first that profoundly examines main organizational structure dimensions to understand the impact of bureaucratization in faculties as organizational units in post-reform higher education using a qualitative approach. We evaluate how 16 faculty managers in Germany perceive bureaucratization processes after the NPM and Bologna reforms followed by an in-depth analysis in terms of the organizational structure dimensions using qualitative content analysis (Mayring, 2014). Dimensions related to the bureaucracy approach, such as formalization, standardization, specialization, configuration, coordination, and centralization (Pugh et al., 1968) are suitable to measure degrees of bureaucratization and are therefore a proper starting point for this study. This raises new research questions: Which dimensions are relevant for faculty managers and how are they connected? What impact has reform implementation in German faculties on bureaucratization and how does reform implementation indeed look like from the perception of the faculty managers?

This paper is organized as follows: to ensure that principles from general organizations can be transferred to faculties, we introduce theoretical foundations that address the question to what extent German universities can be seen as managed bureaucracies and present their distinctive characteristics as organizations followed by reviewing organizational structure dimensions. Afterwards, we describe our methodological approach, which includes the selection of experts and our qualitative content analysis. Finally, we present our results, discuss connections between dimensions, and relate them to the presented theories before deriving conclusions.

## Theoretical foundations and state-of-the-art

### German universities as managed organizations – are they bureaucracies?

Since the 1990s, the NPM reforms have considerably increased the importance of examining and analyzing higher-education research from an organizational perspective. Structures, processes, and hierarchies have become more crucial within universities (Braun & Merrien, 1999). Organizations are consciously created, based on voluntary membership with goals and formal structures. Although German universities deviate in important ways from the bureaucratic model of Max Weber, they are seen as bureaucracies, nonetheless (Schneijderberg, 2017). According to the bureaucracy approach, formal structures collectively lead to functional coordination and ensure efficient goal attainment (Hüther & Krücken, 2018). Communication is based on written documents, there are regular activities and duties, as well as qualified personnel (Weber, 1978).

The goal of politicians and managers by applying NPM in universities is to shift them towards managerial structures (Brunsson & Sahlin-Andersson, 2000). It is indeed shown that pressure originating from NPM reformers strongly affects the adoption of managerial practices within universities (Canhilar et al., 2016). As a consequence, applying NPM instruments has produced new bureaucratization processes in German universities, e.g., evaluation processes, standardized reporting of performance indicators, and provision of information for rankings (Schneijderberg, 2017). Also, the Bologna process accelerated bureaucratization because of quality assurance by accreditation agencies and uniformly-structured degree programs with credit points, which caused standardization (Štech, 2011). Furthermore, professional managers should replace scientists in management positions (Pechar, 2010). The classic rotating system, where scholars elected colleagues as leaders, should be changed to an organization with line management (Geschwind et al., 2019).

Deviations between German universities as organizations and the bureaucratic model (Hagerer & Hoppe, 2020) can be seen from the perspectives of three pertinent theories, which supplement bureaucratic elements. Below, we present these theories and explain how NPM and Bologna affect their manifestation in German faculties.

*Professional organizations* (Mintzberg, 1989): Instead of control by superiors not belonging to the profession, professionals rely more on self-control. Negotiation is the dominant coordination mechanism instead of hierarchy.

*Loosely coupled systems* (Weick, 1976): Subunits are almost autonomous and there is minor managerial control. The consequence in faculties is that professors are scarcely bound to hierarchical structures and instructions from deans due to their freedom of research and teaching. Superiors also often lack the expertise to assess the quality of work and thus tend to delegate authority downwards.

*Organized anarchies* (Cohen et al., 1972): Ambiguous goals, unclear effects of actions, and unstable participation in decision-making over time (within self-administration committees or due to personnel turnover) restrict decision-making rationality (Fumasoli & Stensaker, 2013).

NPM instruments aim to weaken the characteristics of these theories by strengthening bureaucratic elements, e.g., transferring decision-making competencies to the faculty heads (centralization), stronger authority of offices, clearer definition of responsibilities (formalization), or resource-allocation indicators (standardization) (Hüther & Krücken, 2018).

Due to continuing criticism on NPM resulting from a lack of insight into its impact and side effects, several so-called “post-NPM” approaches arose. The two approaches presented below, network governance and neo-Weberianism, aim at adapting the NPM rationale rather than replacing it (Broucker et al., 2017). *Network governance* means that universities, the state, and other external actors are interdependent (Broucker et al., 2017). Coordination is less hierarchical and more horizontal, combined with less government involvement and more involvement of extra-governmental stakeholders. Following De Wit (2010), another feature of network coordination is the focus on internal cooperation and negotiation (shared governance), e.g. between administration and faculties (Taylor, 2013), and can be interpreted as a way to smoothen the managerial aspect of NPM (Broucker et al., 2017).

*Neo-Weberianism* proposes an administrative paradigm that intends a fruitful combination of NPM elements and classic Weberian elements (Pollitt & Bouckaert, 2017), realized by an affirmed influence of state and law, strengthened hierarchy between state and organi-

**Table 1** Organizational structure dimensions (Kieser & Walgenbach, 2010)

Dimension	Description
Specialization	Task allocation through specialized roles; often driven by professionalization (specific training for complex tasks).
Formalization	Written definition of rules and processes.
Standardization	Regulated activities by bureaucratic rules and guidelines.
Centralization	Decision-making at the top of the organization.
Configuration	External structure regarding hierarchical levels represented in the organization chart.
Coordination	To align employees' subtasks with the overall goal (e.g., self-coordination, direct supervision, norms).

zation, less internal top-down leadership, and external orientation to customers (students). The bureaucrat appears as professional manager (Donina & Paleari, 2019).

Due to resulting tensions between bureaucratic elements, specifics of universities hindering reform implementation, and managerial elements, it is unclear how German faculty managers respond to new complex demands (Greenwood et al., 2011). To shed light on this issue, we first review the main organizational structure dimensions, followed by reviewing previous approaches on determining these dimensions.

### Dimensions of organizational structures – state-of-the-art

Organizational structures define the systems of rules to align their members' behavior with goals (Frese, 1992). The term *formal organizational structure* refers to all formal regulations on task allocation and coordination (Scherm & Pietsch, 2007). Formal structures constrain, enable, and shape possible actions (Cardinale, 2017). Characteristics of organizational structure can be abstracted by dimensions, which relate to Weber's bureaucracy model and are also adopted by contingency research (Ebers, 1992). The main dimensions standardization, formalization, specialization, coordination, centralization, and configuration are established in organizational research. They help to shape a uniform idea of understanding organizational structures and are explained in Table 1 (Pugh et al., 1968; Pugh & Hickson, 1968).

Schreyögg argued for additional dimensions: structure of activities, centralization of authority, line control, and internal support functions (Schreyögg & Geiger, 2016: 462–463). These dimensions are closely connected to organizational effectiveness, which defines the degree of goal attainment (Scholz, 1992) and is a crucial concept of NPM. Determining organizational effectiveness is problematic because there is no causal relation between target achievement and organizational structure (von Werder, 2004). Therefore, one reverts to criteria for organizational effectiveness as (sub)targets of organizational design. The following criteria are suitable for analysis because they refer to faculty management after the NPM reforms (Hagerer, 2019): continuity, trust, transparency of structures and processes, relief (managers unburden scientists from administrative tasks), communication and information, environmental orientation (towards external or students' demands), decision-making quality, and motivation.

The literature regarding organizational structure dimensions consists of mostly quantitative studies in industrial enterprises (Baligh et al., 1996; Donaldson & Joffe, 2014). In recent research, studies focussing on the dimensions are rare, where (de)centralization is examined most frequently (Andrews et al., 2009; Donaldson & Luo, 2014). Since the dimensions are usually neither investigated in combination nor analyzed with qualitative research methods, the question arises to what extent dimensions of organizational structures are still relevant today and how they are connected.

One reason for this research gap may be that traditional bureaucratic organizational structures are considered too rigid for new dynamic requirements resulting from NPM or digitization (Dunford et al., 2007). This assumption, however, can only be partly confirmed since new post-bureaucratic practices combined with traditional structures, such as the dimensions investigated in this paper, characterize modern organizational design (Pollitt, 2009). Research also confirms that the relationship between the main structure dimensions of the bureaucratic model is stable over time. Thus, the bureaucratic model can be considered generalizable and still relevant (Walton, 2005) and should also be examined in higher education.

Empirical studies on the degree of bureaucratization in higher education measured by the main organizational structure dimensions are rare (Andrews & Boyne, 2014; Borggräfe, 2019; Walsh & Lee, 2015). However, empirical research confirmed changes in organizational structures caused by the expansion of roles for administrative and scientific staff in universities (Blümel et al., 2010; Rhoades & Sporn, 2002). This led to a stronger integration of previously disparate organizational units (Reed et al., 2002) and the development of so-called complete organizations (Brunsson & Sahlin-Andersson, 2000), distinguished by the dimensions identity, hierarchy, and rationality. In contrast, this paper starts investigation using the dimensions related to the bureaucracy approach. To answer which dimensions managers of German faculties perceive as relevant, we apply the method of qualitative content analysis as described in the following section.

## Method

As previously mentioned, there is little empirical knowledge about the organizational structure dimensions of faculties. For this reason, qualitative research is appropriate due to its explorative character (Mayring, 2014), which makes it possible to detect organizational circumstances not yet considered. Moreover, it is possible to obtain the subjective perspective of organizational members—their interpretation significantly determines decisions and behavior (Ebers, 1992; Hage & Aiken, 1969). Based on the mentions of the interviewed experts, qualitative content analysis can obtain concrete examples as operationalization of relevant dimensions for faculties, identify their meaning, and discern their degrees (Pugh et al., 1968). Individual views show how the organization works in practice rather than what the desirable functioning is.

In total, we conducted 16 guided interviews (Hagerer, 2019), from which we initially interviewed thirteen. After evaluating the results, we interviewed three further experts to validate theoretical saturation (Strübing, 2014), i.e., no further impulses could be gained. We selected faculty management members (e.g. course coordinators, managers, and deans) from eight universities and faculties of different disciplines within Germany (see [Appendix](#))

to ensure diversity regarding university size, faculty size, and disciplines, to gain multi-perspective views and to reflect the heterogeneity of the population (Flick, 2016).

The interviews followed a semi-structured guideline, which targeted understanding organizational structures and addressed structure dimensions, like standardization, formalization, specialization, coordination, centralization, and configuration (Kieser & Walgenbach, 2010; Pugh & Hickson, 1968), related to each interviewee's work and faculty. The complete list of questions can be found in the [Appendix](#). Interviews lasted between 45 min and 1:45 h.

We recorded and transcribed the interviews to provide intersubjective traceability and documentation. Additionally, we evaluated them in two iterations to provide intra-coder reliability and from different persons to provide inter-coder reliability (Kromrey et al., 2016). The length of the interviews and the heterogeneity of the sample ensure empirical saturation (Strübing et al., 2018). Overall, by considering theoretical and empirical saturation, traceability, documentation, intra-, and inter-coder reliability, we satisfy the main quality criteria of qualitative research. The method of reducing relevant mentions of the interviewees to coding serves to identify dimensions of the organization (conceptualization), to derive hypotheses about their interrelation, and to define parameters to measure these characteristics (operationalization) (Kieser & Walgenbach, 2010).

## Results

Our results show that *formalization, standardization, specialization, team self-coordination, centralization, and internal support functions* have high relevance for the interviewed faculty managers. Below, we present the detailed findings for each dimension, deepen their understanding using examples from the interview material and show how the reforms are implemented in the investigated German faculties based on the subjective perception of the interviewees.

**Formalization:** Subsequently, we distinguish between structural and process organization. *The structural organization* of faculties is typically illustrated by organigrams, which document central organs like the structure of the executive committee. In some cases from our sample, separate organigrams exist at the department level, but they are rare on other organizational levels. Furthermore, clear responsibilities and well-defined job descriptions are signs of formalization to avoid, e.g., that scientific employees do the job of course coordinators (Interview 1): “We are now in the process of developing a kind of organigram for the faculty; [...] to signal to faculty and also to students who is responsible for which area.” (Interview 12).

Examples of *process documentation* in the investigated faculties include documented doctorate procedures, commented examination regulations, or written formulation of decisions for commissions: “I document my processes more or less independently. [...] The everyday processes have originally been documented, e.g. in institute meetings, when these competences were transferred to me.” (Interview 1) Laws and the basic order cause documentation. IT support for process documentation can be provided by service portals (e.g. for regulations, contact persons, required forms, and work via intranet) and quality management systems (e.g. for student administration, letters, invoices, handling vacation, business trips, and meeting preparation).

Formalization emerges in the investigated faculties among others from recruitment procedures, appointment procedures, or job descriptions. Especially when personnel changes, sufficient process documentation is vital to prevent knowledge loss: “The deans change, so an essential task is to record processes so that the training period of the new executive is as short as possible. This involves accumulating very specific knowledge” (Interview 5). Thus, clear process definition and employees’ awareness lead to smoother processes and foster information access (committee protocols or draft resolutions) and communication. Transparent, written processes and structures lead to more strategic alignment, clearly defined areas of responsibility, and efficient workflows. Precise process definition causes transparency and uniform evaluation criteria (e.g., what is a relevant student stay abroad). The interviewees consistently mention process documentation positively.

**Standardization:** The interviewees revealed different forms of standardization in their faculties, like legal requirements, regulations, directives, guidelines, and forms, as explained below: “All my activities are completely dependent on module descriptions, examination regulations, hence on the entire bureaucratic structure.” (Interview 1).

*Legal requirements* are binding and typically very detailed, such as the higher education act, the equality act, or the personnel representation law. It must be checked whether they require regulation, whether the staff council must be involved, and if formal requirements on deadlines, travel expenses, and tax legislations are met. Examples of *regulations* are the basic order of the university, and regulations like teaching obligations or student admissions. *Directives and guidelines* are not required by law. They help to implement university requirements, clarify processes, but restrict freedom of action. Examples of directives are procurement or accounting directives, an example of a guideline are recruitment selection procedures.

Interviewees perceive standardization as restrictive. Too much bureaucracy can lead to less efficient work: “We would rather spend our money more freely, but there are directives for its use - for the amounts above which several offers must be obtained, especially in the financial area, travel expense accounting...” (Interview 12).

An important reason for standardization is the way of implementing Bologna reforms in Germany: the conversion to Bachelor’s and Master’s programs makes it necessary to document and amend examination regulations and study programs. Re-accreditation as a reform instrument must be accomplished. There are fixed structures and requirements for re-accreditation, like committee protocols.

**Specialization:** Interviewees have mentioned that the tasks in the faculty have become more complicated: The division of the dean’s position into sub-positions (vice-dean, dean of studies, dean of research) indicates the degree of specialization: “[...] the dean’s position is divided into different sub-positions, which are responsible for certain sub-areas of administrative matters.” (Interview 1). Tasks like course coordination have become so complicated that student assistants or scientific staff cannot do them on the side. Neither deans have resources to perform this task since they are professors in Germany, who see themselves more as scientists. Thus, job profiles for new professionals have emerged in faculty management (e.g., marketing, public relations, course coordination, and study advising), which cause specialization and created a professional culture (Mintzberg, 1989).

**Coordination:** *Self-coordination* is the dominant coordination mechanism mentioned in the interviews. It is substantiated in the form of decision-making through networking, mutual consultation, discussion, or the principle of collegiality (dean as *primus inter pares*):



“It’s nice to have established a weekly dean’s meeting, where the dean of studies, the dean, and I gather and discuss what is coming up and how we do it [...]” (Interview 12).

**Configuration** in the examined faculties means that executive management positions create further hierarchical levels, while advisors and assistants are located in staff positions (Leichsenring, 2009). A configuration example is a faculty director subordinate to the dean with instruction authority to administrative employees. Some interviewees, however, mentioned that there is no clear hierarchy in practice: “In my position, I am responsible for the degree program. I feel accountable to everyone. That means there are things that I discuss with my direct superior, who is degree program director, but I might also have to contact the chairmen of the examination board to receive instructions for the degree program that I carry out. Then there’s the dean of studies, but also the dean of the department.” (Interview 3) So, there is formalization potential regarding organizational structures, notably because research identified clear responsibilities and transparent structures as effectiveness criteria (Hagerer, 2019). An extended configuration form leads to more specialization and professionalization, and a generous faculty administration consisting of a managing director and further employees facilitates efficient work and relieves scientists, according to the interviewees.

**Centralization** means, according to the interviewees, that the dean has decision-making power. Centralization is most pronounced when a full-time dean delegates few decisions to other deans or support units, and less pronounced when a part-time dean works with other deans and support staff: “The dean still has the decision-making power, that’s his function, but decision preparation matters which means he doesn’t have to deal with this preparation work in the end.” (Interview 3) Configuration and decentralization are connected because increasing configuration causes more delegation of decision-making authority, as a respondent illustrates: “The position of the course coordinator for information systems reports to [...] the dean, but the dean has delegated the instruction authority to the institute director.” (Interview 3).

**Internal support functions** (Schreyögg & Geiger, 2016) refer to services not related to the core work process. In the investigated faculties, this concept is realized for, e.g., obtaining student statistics, central reporting, university marketing, human resource management, quality management, and library organization. The interviewees give many examples of internal cooperation with the above-mentioned internal services, e.g., in interview 3, the student secretariat, the international office, and the equal opportunities office. Internal central departments provide relevant information (e.g., development of third-party funds) in regular meetings and other relevant data using a data warehouse system.

Summarizing all interviews, we inductively identified **decoupling** mechanisms between formal structures and informal, common practices, referring to neo-institutional theories often used in higher education research (Cai & Mehari, 2015; Ferlie et al., 2008). Formalized decision-making structures hardly lead to clear authority structures in faculties (Seyfried, 2019): Tasks are often not formalized in organigrams or position plans, or delegated by the person formally responsible. This problem is, among others, stated by a course coordinator, who formally is employed as a scientific assistant: “My job is research assistant. I am not employed as a course coordinator. Accordingly, I am usually in the academic mid-level.” (Interview 1) Another commonly-mentioned example is that faculty directors design and elaborate structural decisions without having formal authority, and deans often imple-

**Table 2** Reform elements reflected in the obtained dimensions

Dimension	Reform elements
Formalization	Accreditation reports, personnel and financial issues like guidelines for selection processes, evaluation criteria, distribution-of-business plan, calculation model for performance criteria, resource allocation.
Standardization	Conversion to Bachelor's and Master's programs: Preparation and amendment of examination regulations and program documentation, re-accreditation, module descriptions; directives for finance use.
Specialization	Division of the dean's position into sub-positions, new management positions.
Configuration	Differentiation by sub-positions of the dean, subordinates like faculty directors (department heads, institute directors) with instruction authority towards employees.
Decentralization	Responsibilities officially delegated to subordinates like the course coordinator, e.g. signing authority for Erasmus students, re-accreditation-processes, revision of curricula.
Internal support services	Examples: central reporting, marketing, quality management, international office, central administration departments, e.g., through data warehouse systems.

ment them without change: “I make many decisions formally, but they are prepared or recommended by the managing director.” (Interview 8).

## Discussion

We now discuss how the empirically found dimensions are connected and relate them to the theories described in the section about theoretical foundations and to previously-discussed effectiveness criteria. Our results show the important role of bureaucratic dimensions in the interviews and confirm the continuing relevance of bureaucratic structures in modern organizations (Dash & Padhi, 2020).

The interviews showed that the intended shift to a management model by NPM increased professionalization, but also process complexity (Andersson & Tengblad, 2009; Kühl, 2012) in the examined faculties: an example is the need for performance criteria for resource allocation, which typically requires complex calculation models. As a result, the new management processes strengthen the importance of the dimensions *formalization*, *standardization*, *specialization*, *configuration*, *decentralization*, and *internal support services* in German faculties, as shown in Table 2.

*Configuration* has a vital impact on other structural dimensions. More *configuration*, e.g., by executive positions like faculty managers or consultants on staff positions, leads to *decentralization* because more decision-making authority is delegated. Generously positioned faculty management means more *specialized* job profiles. The increase of different positions makes formalized responsibilities necessary. *Standardization* leads to *formalization* due to required written documentation.

Subsequently, we discuss the relevant dimensions and relate them to the theories presented in the section about universities as managed organizations. A main intended reform goal is to weaken *profession-based decision-making* (Mintzberg, 1989) by shifting formal decision-making competences from the self-governing bodies to the faculty heads (Hüther & Krücken, 2018). However, the interviewees do not perceive the intended hierarchical strengthening of deans: decisions are often made informally and decentralized according to the principle of collegiality: *self-coordination* in the form of consultation activities dominates, and deans only make limited use of their formal decision-making rights (Hüther & Krücken, 2013). Also, subordinate decision preparers make de facto decisions by providing recommendations, which the dean approves by signature. The resulting decoupling of formal structure and common practice weakens *centralization*. Formal hierarchies do not solely justify the use of control (Bleikle et al., 2015). Research suggests university managers overcome top-down approaches, which are more prevalent in countries with high levels of NPM like Australia or the USA, in favor of proactive participation (Davis et al., 2016). In countries with lower reform levels like Germany, communication-oriented management is more predominant (Vabø & Aamodt, 2008; Teichler et al., 2013). Centralization of decision-making likely alienates academics from institutional objectives in favor of loyalty to their discipline (Taylor, 2013).

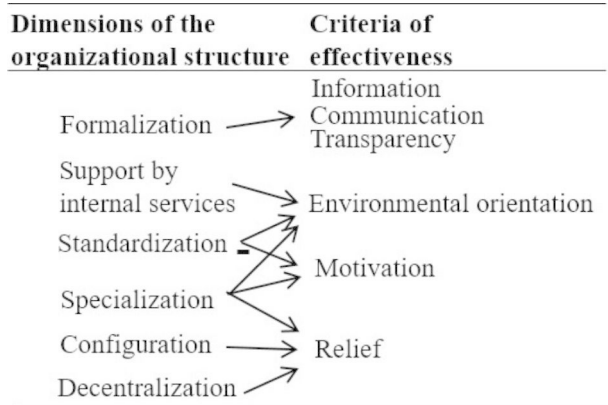
Regarding *loosely coupled systems* (Weick, 1976), we find much *internal service support*, e.g. from central departments, which implies stronger cooperation with units not related to core faculty processes, research and teaching, and tighter coupling between faculties. Yet highly-specialized scientists complicate coupling between management and academic core processes because the superior managers do not have specialists' knowledge for decision making, which means that features of *loosely coupled systems* remain.

Our results also show that *formalized and standardized processes* are well-advanced and strongly emphasized, especially in the event of personnel change. They provide transparency and lead to coherent target systems, which contradicts *organizational anarchies* (Cohen et al., 1972) and is in line with NPM reforms (Braun & Merrien, 1999). However, *formalization of the organizational structure* is not yet entirely developed: The investigated faculties often lack uniform organigrams, which provokes decoupling and contradicts the strengthening of hierarchies and clearer areas of responsibilities intended by NPM.

Besides, we found elements of post-NPM approaches in the interview statements, especially network governance and neo-Weberianism. *Networks* exist internally and externally: *Internal networks* are predominant in the form of *self-coordination* and negotiation between faculties to other organizational units as well as across hierarchical levels (e.g., through committees): “Decisions are made in the institute’s council, where members come from all hierarchical levels, from students to administrative staff, scientific employees and professors. So, all decisions of greater relevance for students can’t be made by individual executives; it’s always a team vote.” (Interview 1) Besides, strong *internal service support* strengthens networks and promotes shared governance between the administration and the faculty (Broucker et al., 2017; Taylor, 2013). Extended *configuration* within faculties and *decentralization* are prevalent.

*External networks* occur through interdependencies between faculties and external stakeholders like accreditation agencies, legislators, or universities, reflected by *specialization* or *internal support services* in organizational structures: “We have people responsible for general administration, [...] we even have a person specifically responsible for initial accredita-

**Fig. 1** Influences between organizational structure dimensions and effectiveness criteria. Negative influence is denoted by ‘-’



tion issues, a person who is responsible for incomings and outgoings. The requirements for faculties have become so extensive, also due to the legal situation and the expectations of the students, that I, as a dean, could no longer manage this alone.“ (Interview 11).

We find characteristics of *neo-Weberianism* (Donina & Paleari, 2019), like strong orientation towards external stakeholders, including students, complementing prevailing functional bureaucratic elements. We see strong influence of the state and legal requirements in the form of *standardization*, perceived as restrictive and ineffective: “The employment proposal is about 30 pages long, and I found this process very time-consuming, very unnecessarily bureaucratic; current jurisdiction causes you to be very careful. Especially the finance and HR departments keep struggling with regulations that cause difficulties”. (Interview 12)

To evaluate (dys)functional elements, we relate the structural dimensions to the effectiveness criteria described above: A higher *configuration* degree, hence more *decentralization*, means more relief of scientists from administrative tasks by specialized managers (Hagerer, 2019). This contradicts the assumption that administrative growth increases the bureaucratic burden on scientists (Gornitzka et al., 1998). *Specialized positions* lead to relief and more effective work for scientists and are needed due to more complex tasks, clarify responsibilities, and thus increase motivation. *Specialization* and *support from internal services* foster environmental orientation by managing tasks concerning, e.g., internationalization, student affairs, or accreditation. *Standardized processes* can be useful for orientation towards students, e.g., recognition of academic achievements from abroad, or new global “best-practice”-standardization processes (Ramirez & Christensen, 2013). The interviewees assess *standardization* mainly negatively. It reduces flexibility and personal freedom of action, which ultimately diminishes motivation. *Formalization*, in contrast, is mentioned positively, especially regarding process and structural documentation: it fosters information, transparency, and communication, consistent with the formalization of research activities (Woelert, 2015). A configuration form with a generously-equipped faculty administration and specialized job profiles relieves scientists. Figure 1 shows the mentioned influences between the structural dimensions and effectiveness criteria from the subjective perception of faculty managers.

Starting from Weber’s structural dimensions, and following the interviewees’ perceptions, we find that decoupling mechanisms weaken NPM elements: dysfunctional top-down hierarchies provide room for self-coordination and negotiation referring to network gover-

nance, which also supports environmental orientation. Elements of neo-Weberianism, like strong legal influence, can lead to standardized processes assessed as rather inadequate and are thus recommended to be reduced. As a consequence, not only country-specific factors like German federal structures, but also internal organizational factors, like rigid bureaucratic restrictions (standardization) or separation between formal procedures and informal practice, are reasons for relatively low reform scores.

## Conclusion

The organizational structure dimensions formalization, standardization, specialization, self-coordination, configuration, (de)centralization, and internal support functions have vital importance for the interviewed faculty managers and are reinforced by the implementation of NPM and Bologna reform elements (see Table 2). Our evaluation with effectiveness criteria (see Fig. 1) detected functional and dysfunctional effects of the reform elements: Management positions relieve scientists, formalized processes and job profiles positively affect effectiveness, whereas overly standardized processes, centralization of decision-making, and top-down hierarchies are perceived as ineffective. We contribute to the debate about predominant governance mechanisms in higher education by finding partial transitions and tensions between bureaucracy, NPM, network governance, and neo-Weberianism in German faculties. Elements of bureaucracy as a long-established governance logic still influence post-NPM approaches (Wiesel & Modell, 2014).

As a limitation of this study, we do not claim completeness and representativity regarding the dimensions because of the limited sample. Instead, our approach is exploratory and aims to gain in-depth insights across institutions by analyzing the meaning of the dimensions for faculty managers and revealing gradations in their development.

Additionally, we generalize our qualitative procedure, which offers scholars an example for empirically examining bureaucratization processes. Further research could examine the dimensions of faculties in countries with stronger reform levels using our method and compare it to our work. Thus, our research helps science managers and researchers gain a deeper understanding of faculty organization.

## Appendix

### Questions from the interview guideline.

- To what extent is faculty management distributed among specialized positions?
- How do guidelines or bureaucratic rules determine your tasks? Give examples!
- How do you collaborate within the team?
- Are decision-making competences more at the top of the organization or delegated? Give examples!
- What are your decision-making competences?
- If there is an organigram, how does it look like, how are your experiences with it?
- How do you document processes and procedures?
- Give an example of a process.

- Come instructions rather from the superior, or coordinates the team together? Give examples!
- Do you have instruction authority to other employees?
- Do you get support from internal services not directly related to your work process?

### Job titles of the interviewees.

Job title	Interview
Course coordinator	1, 2, 3, 4, 5
Course planning, accreditation, quality management	13
Head of organizational development	16
Head of institute	6, 7
Faculty/dean advisor, manager	9, 10, 12, 13, 15
Dean	8, 11

### Disciplines of the interviewees.

Discipline	Interview
Economics, business administration, law	2, 3, 7, 8, 11, 13, 16
Engineering, natural science	4, 9, 10, 12, 16
Humanities, social science	1, 5, 6, 14, 16

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**Authors' contributions** In contrast to most other work on organizational structures of higher education institutions, a qualitative analysis has been performed by conducting expert interviews. This allowed us to obtain deep insights into the actual implementation of organizational reforms according to the new public management and the current state of post-reform bureaucratization, and to detect (dys)functional reform elements. We focus on the institutional level of faculties because the academic core processes take place there. This paper is based on revised parts of the author's dissertation available at Osnabrueck University.

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**Conflicts of interest/Competing interests** The authors have no relevant financial or non-financial interests to disclose.

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