Reconciling field-level logics and management control practices in research management at Austrian public universities

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Abstract

Purpose – The purpose of this paper is to explore how Austrian public universities (APUs) respond to the challenge of maintaining academic freedom while complying with legal requirements and enhancing competitiveness by using Management Control Systems (MCSs). Specifically, it examines how APUs respond to the co-presence of academic, government and business logic.

Design/Methodology/Approach – The perspective of institutional logics as a theoretical lens and the framework of MCSs by Malmi and Brown (2008) serve to analyse how APUs respond to the existence of different institutional field-level logics. In-depth expert interviews from the perspective of APUs' research management are conducted to identify the applied management control practices (MCPs) and APUs' responses to the different institutional field-level logics.

Findings – This study identifies how academic, government and business logic are represented in field-level-specific MCPs and field-level-specific corresponding narratives. Reflecting upon APUs' responses to the co-existence of academic and government logic, compliance or rather, selective coupling with government logic or decoupling from government logic became obvious.

Originality/value – To the best of the authors' knowledge, this is the first study at higher education institutions representing academic, government and business logic in the applied MCPs in research management. The study reveals that APUs have developed specific responses and narratives regarding the existence of different institutional field-level logics.

Keywords Public universities, Institutional logics, Management control systems, Research management, Management control practices

Paper type Research paper

1. Motivation and research questions

Over recent decades, the introduction of new public management in the university sector has established a new logic: Managerialism has been introduced in public universities, bringing private sector approaches to the management of public services (Broadbent, 2007) and

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transforming them into hybrid organisations that continuously incorporate elements of distinct, competing institutional logics (Vakkuri and Johanson, 2020; Boitier *et al.*, 2018; Upton and Warshaw, 2017; Lepori, 2016; Pache and Santos, 2013; Thornton *et al.*, 2012).

Public universities face the challenge of maintaining academic freedom while simultaneously complying with legal requirements and enhancing their competitiveness. On the way from a Humboldtian to a market-driven ideal (Kallio *et al.*, 2016), universities must be prepared for these transformations and adapt their Management Control Systems (MCSs) to steer their traditional core mission of facilitating academic research. Effectivity and efficiency must be increased (Duh *et al.*, 2014; Decramer *et al.*, 2012; Melo *et al.*, 2010; van der Weijden *et al.*, 2008) receive public funding, attract students or be an attractive employer for researchers.

Universities have to respond to and reconcile different, sometimes competing, expectations and demands arising from different *institutional field-level logics* (hereinafter referred to as *field-level logics*). Prior studies on higher education institutions' responses have focused either on organisational structures, i.e. how different logics are manifested by organisations' structure and practices (Conrath-Hargreaves and Wüstemann, 2019; Busco *et al.*, 2017; Ahrens and Khalifa, 2015; Ezzamel *et al.*, 2012; Pache and Santos, 2011), or on organisational strategies, i.e. how organisations try to cope with imposed prescriptions (Pache and Santos, 2013, 2010; Greenwood *et al.*, 2011; Oliver, 1991).

Focusing on Austrian public universities (APUs), which have undergone a fundamental new public management reform since 2002, this paper aims to contribute to the emerging research field of field-level logics represented in management control practices (MCPs) as well as APUs' organisational responses to the existence of different field-level logics in the area of research management. At APUs, the vice-rectorate of research is responsible for managing research agendas and therefore for the arrangement of MCPs in the area of research. Basic and applied research is one of APUs' core mission areas, playing a crucial role in the generation, development and dissemination of knowledge.

Historically, APUs were run under the self-image of professional autonomy in research and teaching (Schimank and Lange, 2009), receiving legitimacy from their scholarly reputation. Since the introduction of new public management and the Federal Act on the Organisation of Universities and their Studies in 2002 – UG (2002), management techniques and MCPs for enhancing effectiveness and efficiency (Agyemang and Broadbent, 2015) have emerged and exposed APUs to international rankings and increasing international competition within the scientific community. APUs were granted autonomy, decision rights were transferred and new accountability obligations were introduced. As will be shown, specific field-level logics have since emerged at APUs (Thornton *et al.*, 2012), which affect the design and use of MCPs and APUs' rationalising narratives, which provide information about MCPs applied.

Contrary to the Anglo-Saxon tradition in which universities are funded substantially through tuition fees they set and collect themselves, APUs are funded mainly by the Austrian federal government. Introduced by the UG 2002, each APU concludes a triennial contract with the ministry under public law (i.e. performance agreement) to receive funding for a period of three years (i.e. global budget). The university-specific performance agreement with the ministry includes quantitative and qualitative performance measures, which are part of the universities' obligatory annual intellectual capital report (ICR). Indicators included in the ICR measure the achievement of university-specific strategic objectives. The ICR has to include APUs' performance processes, including their outputs and impacts (UG 2002), which influences APUs' internally applied MCPs. Austria was the first country worldwide to make ICRs obligatory for public universities and can therefore

look back on nearly 17 years of performance-driven governmental steering that affects managerial processes of decision-making and control (Habersam *et al.*, 2021, 2018, 2013). This "continued uniqueness" (Habersam *et al.*, 2018, p. 35) of the mandatory ICR makes APUs an interesting field to study, because the introduction of the ICR significantly influenced APUs' application of MCPs and how the governing field-level logics are translated into MCPs in the area of research.

Against this background, the paper addresses the following research questions (*RQs*):

RQ1. How are APUs' field-level logics translated into MCPs?

RQ2. How do APUs respond to different field-level logics?

To answer these *RQs*, the empirical section presents the results of in-depth expert interviews from the perspective of APUs' research management to identify the applied MCPs and APUs' responses to the different field-level logics.

The paper contributes to the literature on institutional logics by focusing on research management's use of MCPs in the core mission area of research. The study focuses on the implementation of MCPs and how APUs' three dominant field-level logics are translated into field-level-specific MCPs and corresponding narratives. APUs' management control types are included in a specific set of MCPs and their corresponding narratives, which manifest in specific field-level logics. Unlike prior studies (Habersam *et al.*, 2021; Grossi *et al.*, 2020; Dobija *et al.*, 2019; Ahrens and Khalifa, 2015), the paper analyses a broad range of management control types rather than focusing on MCPs in line with government or business logic. Furthermore, the paper analyses how APUs respond to the existence of different field-level logics in research management. Although the acceptance of business logic becomes apparent, APUs' responses in dealing with the competition between academic and government logic leads to rationalisations in narratives and, in turn, to the application of particular MCPs. The ways in which APUs deal with these tensions ranges from compliance with government logic, or selective coupling by aligning with government logic in a minimalistic way, to decoupling between the prioritisation of academic logic by means of narratives and the actually applied MCPs in line with government logic, as well as cushioning by MCPs informed by academic logic. Particularly interesting to the academic debate are the responses in the case of decoupling and the use of narratives to preserve APUs' academic core identity.

The remainder of the paper is structured as follows: Section 2 introduces theoretical considerations concerning institutional logics in the university sector as well as an introduction to MCPs and narratives. Furthermore, universities' responses to the existence of different field-level logics are outlined. Sample description and methodology follow in Section 3, data analysis and results are given in Sections 4 and 5. Section 6 comprises the discussion, contribution, directions for further research and limitations.

2. Institutional logics and universities' responses to different field-level logics

2.1 Institutional logics in the university sector

Thornton and Ocasio (1999, p. 804) describe institutional logics as "the socially constructed, historical pattern of material practices, assumptions, values, beliefs, and rules". Initially introduced by Alford and Friedland (1985), the notion of institutional logics relates to "contradictory practices and beliefs" inherent in institutions of societies (Thornton and Ocasio, 2008, p. 101). According to DiMaggio and Powell (1983) as well as Meyer and Rowan (1977), institutional logics describe the influence of cultural regulations and cognitions on organisational structure. Institutional logics inform organisational identity and internal

decision-making (Townley, 1997). Furthermore, "institutions are potentially contradictory and hence make multiple logics available to individuals and organizations" (Friedland and Alford, 1991, p. 232). According to Friedland and Alford (1991) as well as Thornton and Ocasio (2008), each core institution of society (market, corporation, profession, state, family and religion) has a central logic, where each sector is defined by distinct symbols and practices: "[S]pecific historical, cultural, and material contingencies in the field lead to field-specific variations in practices" and represent instantiations of societal-level institutional orders (Thornton *et al.*, 2012, p. 149). Characterised by a specific set of material practices (e.g. MCPs) and symbolic constructions (e.g. narratives that show how field-level actors rationalise their applied specific MCPs), each field-level logic becomes evident in a particular set of material practices (Thornton and Ocasio, 2008, 1999; Haveman and Rao, 1997; Friedland and Alford, 1991). In other words, "practices [. . .] are fundamentally interrelated with institutional logics" (Thornton *et al.*, 2012, p. 128) and represent one of the core elements of institutional logics (Thornton and Ocasio, 2008; Friedland and Alford, 1991). According to Thornton and Ocasio (1999, p. 806), "[l]ogics provide the rules of the game".

Today's universities have to fulfil their central missions of teaching, research, interacting with society and "co-creation for sustainability" (Trencher *et al.*, 2014, p. 151) as well as complete their tasks in the area of research efficiently and effectively. In the area of research, market criteria require that universities' educational institutions compete for research grants, the best employees and students all over the world, as well as position themselves in international rankings. Managerialism reforms along with the implementation of private sector practices have resulted in reshaping universities into hybrid organisations (Vakkuri and Johanson, 2020; Boitier *et al.*, 2018; Pache and Santos, 2013; Thornton *et al.*, 2012).

For the higher education sector, Cai and Mountford (2022) provide a comprehensive literature review of institutional (field-level) logics. They identify 18 field-level logics with partially similar assumptions. Academic logic, market logic and managerial logic represent "the most popular logics" (Cai and Mountford, 2022, p. 1635). Regarding APUs' field-level logics, we adopt the classification of Conrath-Hargreaves and Wüstemann (2019), which is not only the most recent one developed for the non-Anglo-Saxon area, but also the most appropriate for APUs because of the comparability of the university traditions and the governmental regulatory foci. In line with Conrath-Hargreaves and Wüstemann (2019), *academic logic* is regarded as an ideal-type logic at the field-level of the societal-level logic of the profession. Academic logic's maxim is represented by a high degree of autonomy, reputation depends on collegial assessment and its guiding aim is to produce knowledge and contribute to the researchers' and university's reputation. Following a tight corset of regulations determined by the government, compliance with interests of the state and the achievement of economic and social goals defined by the state describe universities' main tasks according to *government logic*. Government logic is regarded as an ideal-type logic at the field-level of the societal-level logic of the state. *Business logic* represents the field-level ideal-type logic of the societal-level logic of the corporation and the market. Through the adoption of private sector methods (Martin-Sardesai *et al.*, 2017), universities are expected to enhance their autonomy by generating financial income and to act in a "business-like" manner (Parker, 2013, p. 19).

2.2 Management control practices and narratives

MCSs are defined as "a broader term that encompasses MAS [management accounting systems] and also includes other controls such as personal and clan controls" (Chenhall, 2003, p. 129). Management accounting systems refer to the systematic use of management accounting, represented by a "collection of practices such as budgeting or product costing"

to achieve organisations' goals (Chenhall, 2003, p. 129). If a number of management control types are applied and coordinated intentionally, Malmi and Brown (2008) refer to these as *MCSs as a package*. Regarding APUs' field-level-specific MCPs, management control types of the MCSs' package of Malmi and Brown (2008) are applied, because this framework is not limited to selective management control types but represents the most comprehensive and, indeed, one of the most frequently applied approaches to MCSs (Otley, 2016). With respect to management control types, cultural controls, planning, cybernetic controls, reward and compensation as well as administrative controls are distinguished. Regarding APUs, cultural controls can be divided into value-based (e.g. collegial cooperation), symbol-based (e.g. universities' corporate identity) and clan controls (e.g. peer-reviews). Planning defines objectives and serves as an expression of expected behaviour (e.g. development planning or performance agreements). Cybernetic controls provide the quantification of standards to be met, allowing feedback processes, variance analyses and the opportunity for modification. These include budgets, financial and non-financial measures (e.g. ICRs) and hybrids. To control the direction of effort, duration and intensity, monetary and non-monetary rewards and compensation are used (e.g. performance-dependent incentives or appreciations). Administrative controls refer to organisational structure and design, governance, policies and procedures (Simons, 1987), and direct employee behaviour through organising individuals and groups (e.g. development of interdisciplinary research fields).

Going beyond, rationalisations in narratives provide information about MCPs applied. Actors' motivations are revealed and values and beliefs are explicated (Feldman *et al.*, 2004). By means of a "plot", narratives leave open the nature of connection, and specific events "are brought into one meaningful whole" (Czarniawska, 2004, p. 7). Narratives are complex social artefacts that constitute "storylike constructions containing description, interpretation, emotion, expectations, and related material" (Harvey, 1995, p. 3). Narratives connect different events to provide an interpretative pattern (Franzosi, 1998). Regarding field-level logics, narratives provide information on how an organisation's actors make sense of the MCPs used. As part of a recursive process, organisations have to attribute appropriate meaning to applied MCPs. This happens through an "active justification process" (Gondo and Amis, 2013, p. 236). Vocabularies of practice (Thornton *et al.*, 2012) and narratives play a central role in sensemaking to enhance plausibility:

> [. . .] sensemaking is not about truth and getting it right [. . .] it is about continued redrafting of an emerging story so that it [. . .] is more resilient in the face of criticism. (Weick *et al.*, 2005, p. 415)

And to create meaning for a target audience. By the means of narratives "organizations attach meaning and value to social pressures exerted by their social environment" (Suddaby *et al.*, 2010, p. 1239). In an environment of multiple logics, narratives help to cope with contesting, conflicting or competing institutional demands (attributing meaning or communicating about practices) (Thornton *et al.*, 2012). Meyer and Rowan (1977, p. 349) emphasise the importance of organisational language to account for organisational activities: "Vocabularies of structure which are isomorphic with institutional rules provide [. . .] legitimate accounts".

Because field-level logics become explicit in the way "things are organised or practiced" (Cai and Mountford, 2022, p. 1638), field-level logics directly influence the selection and application of MCPs. Furthermore, a duality is assumed between logic and practice. Organisations' institutions are symbolic systems and have social relations including ritual and instrumental content (Friedland and Alford, 1991). At APUs, management control types informed by their particular field-level logic symbolically represent the way APUs enact their specific self-concept; but MCPs also exhibit an instrumental content in maintaining and

advancing APUs' research aims and their professional self-concept. Field-level logics and organisational practices are fundamentally interrelated (Thornton *et al.*, 2012) and show an "inner referentiality" with subjects and objects (Friedland, 2009, p. 888). MCPs refer to a "coherent and complex form of socially established [. . .] activity" (MacIntyre, 1981, p. 187) which is associated with specific roles (Townley, 2002). Within each field-level logic, MCPs are perceived as "a set of meaningful activities" (Thornton *et al.*, 2012, p. 128), including management control types of the MCSs package (Malmi and Brown, 2008), related to the field and rationalised by corresponding narratives that are coherent with the respective self-concept. Management control types cannot be assigned exclusively to one field-level logic, but are embedded in contextual applications resulting in different translations in academic, government and business logic. Theses translations are enacted in field-level-specific MCPs (Table 1).

Over recent years, a growing body of studies has investigated the impact of voluntarily and non-voluntarily introduced MCPs on higher education institutions, without specifically referring to universities' mission of research. Changes in MCPs required by the state and market pressures potentially collide with the academic self-concept of professional autonomy and freedom in research and teaching (Dobija *et al.*, 2019; Kallio *et al.*, 2016; Pettersen, 2015; ter Bogt and Scapens, 2012; Parker, 2011). In prior research, consequences of the introduction, changes or application of selected MCPs on universities are addressed without focusing on the area of research. Among these studies, Habersam *et al.* (2021, p. 169) explored the legitimacy function of the ICR for administrative staff and investigated the unintended consequences of a "calculative regime" for APUs. Tactical behaviours of resistance and symbolic use enabling consequences of new processes of communication, horizontal network building and, consequently, evolutionary change were observed. At four Polish universities, performance measurement instruments are used for strategic and rational decisions as well as for external accountability. At the internal level, resistance to the use of performance measurement systems was realised (Dobija *et al.*, 2019). Ahrens and Khalifa (2015) investigated the impact of voluntary accreditation on MCPs at three universities and found management control compliance as a creative process of arranging and translating general prescriptions into specific contexts. Ezzamel *et al.* (2012) examined the introduction of budgeting practices in the field of education in the UK and found that the extant logics of professionalism and governance have remained influential. Moll and Hoque (2011) investigated how budgeting is involved in processes of legitimation at an Australian university and found that university staff undermined it by patterns of under- and over-spending.

Externally or internally triggered changes in MCPs also lead to the co-existence of diverging logics. Grossi *et al.* (2020) conducted a longitudinal case study at a private university in Poland and investigated how shifts in logics affected performance

Table 1.
Field-level logics and MCPs

Management control types informed by academic logic	Management control types informed by government logic	Management control types informed by business logic
are part of a set of MCPs with corresponding narratives informed by academic logic through which academic logic manifests	are part of a set of MCPs with corresponding narratives informed by government logic through which government logic manifests	are part of a set of MCPs with corresponding narratives informed by business logic through which business logic manifests

measurement. The emerging academic logic joined business logic, resulting in co-existence and entering into robust combinations. However, other studies indicate a less severe tension between academic and business logic: for instance, Kallio *et al.* (2020) investigated the acceptance of audit culture and related public sector reforms by Finnish universities. A shift was identified from professional towards competitive bureaucracy in universities' organisational principles and their performance measurement criteria by adopting strategic planning instruments and implementing MCPs as a means for evaluation and resource allocation. Pettersen (2015) analysed how two qualification frameworks in Norway and Sweden are transformed by academic knowledge into metrics derived from managerial logic and found a combination of professional and administrative values.

2.3 Universities' responses to different field-level logics

Organisations hold different institutionalised roles based on the respective self-concept, which lead to a range of conventionally defined activities and practices (Scott, 1987). Moreover, organisations are increasingly exposed to a multiplicity of demands induced by their institutional environments (Pache and Santos, 2010). Because roles involve values and practices, different roles can lead to ambiguity and conflicts, since goals are multiple and conflicting (Weick, 1995). The need to manage these ambiguities raises the question as to how universities respond to these challenges. Expanding Oliver's (1991) model, strategic responses to conflicting institutional demands are a function "of the nature of the conflict and the intraorganizational representation of that conflict" (Pache and Santos, 2010, p. 456); and:

> [. . .] how logics are given voice within the organization; but the ability of a voice to be heard is linked to the influence of that logic's field-level proponents over resources – including legitimacy – that they control. (Greenwood *et al.*, 2011, p. 349)

Resource environments affect the construction of institutional logics and are shaped by institutional logics (Thornton *et al.*, 2012).

APUs are exposed to a multitude of demands from their different stakeholder groups, e.g. governmental and third-party fund providers, academics, rating agencies, future employers or other universities. Each of them exercises different requirements and demands as well as deploys different enforcement mechanism, which push APUs' representatives of research management into different roles: in their role as professionals, they preserve autonomy in research and teaching. The applied MCPs and the corresponding narratives consequently follow academic logic. As representatives of the state's political and economic interests, APUs prioritise MCPs and narratives informed by government logic. In their role as research managers, APUs' representatives act like businesses and adopt private sector MCPs with their accompanying narratives. Although conflicts about different management control types informed by their particular logic (e.g. APUs' ways of promoting young scientists or APUs' quality assurance strategies) may be negotiable, demands involving conflicts about goals (e.g. APUs' self-concept and basic understanding of management control) are more challenging. Furthermore, at APUs, a variety of competing institutional demands is internally represented by different interests of APUs' different internal stakeholder groups (e.g. academic staff, students, rectorate, senate and university council) or by the provision of "cognitive templates" (Pache and Santos, 2010, p. 460), for instance, objectives and MCPs informed by academic logic are likely to be guarded by scientists who have been socialised this way.

In such circumstances of diverging interests, one of the strategies that organisations may use is *decoupling*, in which "[s]tructures are decoupled from each other and from ongoing

activities" (Meyer and Rowan, 1977, p. 340) for legitimacy reasons and not just technical efficiency. Formal structure serves as a "blueprint for activities" (Meyer and Rowan, 1977, p. 342), assuming that organisations follow their formal blueprint. Particularly in situations where external parties (e.g. the government) prescribe policy or MCPs, required policies are adopted symbolically, while, in actuality, practices coherent with internal beliefs are implemented (Pache and Santos, 2013; Boxenbaum and Jonsson, 2008; Greenwood and Hinings, 1996). Pache and Santos (2013) refer to decoupling as a strategy to prevent conflict escalation in organisations. A second approach refers to *selective coupling*, a strategy in which specific selected practices are purposefully applied to satisfy symbolic concerns without "put [ting] them at risk of being caught faking compliance" (Pache and Santos, 2013, p. 994). Purposefully, organisations select specific practises from the available alternatives and therefore selectively comply with demands informed by different logics. As a third strategy, Oliver (1991, p. 152) describes *compliance* as "conscious obedience to or incorporation of values, norms, or institutional requirements". Organisations deliberately choose to comply with institutional pressures because of self-serving interests concerning, e.g. the provision of resources or social support (DiMaggio, 1988; Meyer and Rowan, 1983).

Over the past two decades, a growing body of literature has begun to turn its attention to higher education institutions' responses to institutional complexity. Amongst the studies focusing on the effects of introduced managerialism, Czarniawska (2020) analysed the global trend related to the usage of business models to improve universities' ranking and found that universities ignore the effect of this practice on research and teaching. Conrath-Hargreaves and Wüstemann (2019) examined a German institution of higher education that voluntarily reorganised from a public into a foundation university. Their results show that organisational characteristics, acting as filters for institutional logics at the field level, play an important role in increasing autonomy through self-motivated reform processes. Despite reorganisation, business logic did not become dominant, but practices informed by government and academic logic remained salient. In their case study of an English business school, Gebreiter and Hidayah (2019) found that the juxtaposition of professional and commercial logic leads to compliance, defiance, combination and compartmentalisation by individual academics. In a cross-case study of three European universities, Boitier *et al.* (2018) assessed organisational changes induced by managerial logic in a French and two German universities, revealing different hybrid organisational responses in the form of segmentation and blending. Upton and Warshaw (2017) investigated to what extent universities display a transformation of their core values by means of a longitudinal case study of three American universities, finding hybridisation of social institution and industry logics. In a longitudinal case study at a multidisciplinary French university, Boitier and Rivière (2016, p. 3) analysed how several dimensions of logics contribute to the specification of their compatibility and how interactions with MCSs (defined here as "vectors of a new managerial logic" and as an instrument of new public management) contribute to their institutionalisation. Canhilal *et al.* (2016) conducted a large-scale survey of 26 universities in eight European countries and showed how compatibility is achieved through the adoption of different logics: managerial pressure affects the adoption of managerial practices but has no significant effect on academic aspects.

Among the studies referring to the effects of accountability mechanism, Gebreiter (2021) analysed the implications of university corporatisation on accounting academics and revealed that the accounting department of the analysed Business School in England developed towards a teaching-only unit. Kallio *et al.* (2021) analysed the tensions between public universities' accountability and autonomy at selected Finnish universities. Their study revealed a gap between the perceived highest impact and the lowest relevance

(appropriateness) of indicator-based funding. This paradox is traced back to the perceived loss of autonomy resulting from the simultaneous demands for autonomy and accountability on the one hand, and autonomy and steering by the ministry on the other hand. In a longitudinal case study, Aleksandrov (2020) studied the dynamics and processes of individual actors at a Russian university during hybridisation, revealing various forms of reflexivity. Accounting has become a balancing mechanism between academic and managerial demands. Guarini *et al.* (2020) analysed academic staff's coping strategies for the introduction of changing performance measurement systems at an Italian university and found that academics have changed their publication strategies.

This study seeks to address universities' field-level logics in the area of research. More particularly, and as a contribution to existing literature, universities' MCPs in their entirety applied by universities' research management are investigated. In addition to studies focusing primarily on the effect of one field-level logic, the paper takes into consideration the entire deployment of MCPs informed by the different field-level logics. Because of APUs' representatives' specific rationale, management control types' multiple use and assignment is also considered. Furthermore, universities' responses to the different demands informed by competing field-level logics are examined.

3. Austrian public universities – sample description and methodology

The UG 2002 legally mandates APUs' principles and responsibilities as well as financing and university governance. Supporting academic research and teaching constitutes a key principle. The freedom of science and teaching is enshrined in the Austrian constitution (State Constitution on the General Rights of Citizens, 2020). Furthermore, APUs as legal entities under public law shall be free of ministerial instruction and free to adopt statutes within the limits of the UG 2002. With the UG 2002, an Austrian national development plan for public universities was introduced. The federal government funds APUs based on a triannual performance agreement, which includes APUs' development plans as a strategic planning instrument. Each university must develop a specific research profile. As stated above, performance agreements must establish quantitative and qualitative performance measures for specific objectives, to be included in the annual ICR. To assure quality and the attainment of objectives, APUs have to develop a quality management system. Moreover, research information systems collect all relevant research efforts (e.g. publications in number and quality, scientific lectures, research projects and scientific community services). On a regular basis, the rectorate has to give an account for the university's progress to the Austrian Federal Ministry of Education, Science and Research in terms of the triannual performance agreement. Within the rectorate, the vice-rectorate of research is responsible for research agendas, including activities to advance research progress.

To answer the *RQs*, a qualitative research method was applied. Moreover, because of the limited research context, involving all APUs on the basis of in-depth expert interviews was not only feasible but the most suitable method for answering the *RQs* (Bortz and Döring, 2016; Mayring, 2016; Hussy *et al.*, 2013; Schnell *et al.*, 2013). While the introductory questions related more generally to the understanding of research control and MCSs to control employees' behaviour, the main questions related to control instruments and types, universities' strategic research aims, target coordination, distribution of budgets and non-monetary resources, research culture and consequences in cases of deviation. The 15 semi-structured interviews conducted lasted between 19 and 60 min each. Interviews were held (H) in-person (p), via telephone (t) or video (v) over the first half of 2019. They were conducted in German, digitally recorded and transcribed with permission of the

interviewees (Mayring, 2015). Afterwards, quotes were translated in English. In the following, direct quotes are indicated in italics. If no release for direct quotes was given, the abbreviation "cf." is used to refer to the relevant passage of the interview. Parts of the text that are not relevant have been omitted and are indicated by three dots in square brackets. If necessary for the reader's understanding, interview questions or supplements are given in square brackets. Data analysis was conducted by two persons independently using MAXQDA (2019).

Because of selective acceptance, 15 semi-structured in-depth expert interviews with 17 experts from 14 universities were conducted (Bortz and Döring, 2016), as shown below (Table 2: Overview of the sample by position within research management), which also states the positions of the interviewees. Austria has specialised universities (universities of human and veterinary medicine, technical universities, universities of natural resources and life sciences, universities of arts, universities of economics and business) and universities offering a very wide range of disciplines, both types being covered by the analysis.

The analysis of the data followed a two-step approach. In the first step, APUs' fundamental beliefs and guiding principles were identified. Categories were derived inductively by repeatedly reading the transcripts as well as coding and clustering data for salient themes (Mayring, 2015). This made it possible to identify APUs' "self-concept" (all statements that describe APUs' fundamental beliefs) and APUs' "structures" (all statements that describe APUs' decision-making structures). Focusing on the framework of MCSs and the management control types of the MCSs package of Malmi and Brown (2008), data were also deductively analysed to identify APUs' MCPs. For instance, for the control type *cultural control*, the subcategories "international perception" (all statements describing the international perception in the scientific communities and the visibility of the university), "universities culture" (all statements that describe the cultural value patterns in APUs' area of research) and APUs' "understanding of research control" (all statements that support the general understanding and the significance of research control) were defined. Depending on interviewees' statements, allocation to the field-level logics distinguished by Conrath-Hargreaves and Wüstemann (2019) was made as follows: If a specific management control type (e.g. the development of interdisciplinary research areas as an administrative control type) is applied to produce scholarly knowledge and to contribute to researchers' and the university's reputation, the specific control type was assigned to academic logic (e.g. interdisciplinary research areas developed bottom-up with a maximum of freedom and autonomy in research). If the same/similar management control type is applied to enhance international competitiveness and visibility, the control type was assigned to business logic. Thus, the identified management control types were assigned to academic, government or business logic, but simultaneous assignment to multiple logics was also carried out (see Table 3 for an overview of APUs' field-level logics and MCPs in the area of research management). The second step of the thematic analysis focused specifically on how APUs' research management responds to the existence of (competing) field-level logics. This step was theory-driven (deductive) to understand APUs' applied strategies. During the analysis, narratives were identified, revealing different and considerably nuanced strategies. Contrary to initial expectations, accordance between the assigned management control types and their corresponding narratives was not always found. Therefore, another analytical step was conducted to reveal the tensions between APUs' applied MCPs and rationalising narratives. Depending on APUs' rationalisations, different strategies could be identified, with the narratives either matching or differing from the applied MCPs.

Date	Interviews (I)	H	University	Position	Department	Release for direct quotes	Duration
May 09, 2019	1	t	1	Head of management	Research department	✓	24
May 21, 2019	2	t	1	Head of management	Quality management	✓	19
May 10, 2019	3	p	2	Vice rector	Vice rectorate of research	✓	60
May 10, 2019	3	p	2	Head of management	Research management	✓	60
May 13, 2019	4	t	3	Head of management	Research management	✓	33
May 15, 2019	5	t	4	Vice rector	Vice rectorate of research	✓	59
May 16, 2019	6	t	5	Head of management	Research management	✓	54
May 16, 2019	7	p	6	Head of management	Research management	✓	53
May 20, 2019	8	t	7	Employee of the vice rectorate	Vice rectorate of research	✓	57
May 22, 2019	9	t	8	Vice rector	Vice rectorate of research	×	18
May 23, 2019	10	t	9	Vice rector	Vice rectorate of research	×	28
June 05, 2019	11	p	10	Vice rector	Vice rectorate of research	×	50
May 27, 2019	12	t	11	Vice rector	Vice rectorate of research	✓	26
June 05, 2019	13	v	12	Vice rector	Vice rectorate of research	✓	31
June 05, 2019	13	v	12	Assistant to the rector	Vice rectorate of research	✓	31
May 20, 2019	14	t	13	Vice rector	Vice rectorate of research	×	40
July 03, 2019	15	t	14	Vice rector	Vice rectorate of research	×	23

Table 2.
Overview of the sample by position within research management

Field-level logics	ACADEMIC LOGIC	GOVERNMENT LOGIC	BUSINESS LOGIC
Self-concept	Academic freedom in research with a maximum of autonomy at the highest international level	Achievement of economic and societal goals defined by the state	International research excellence and top performance in international rankings
Understanding of control	Maintaining intrinsic motivation and self-interest by provision of resources and good conditions	Compliance with regulations and fulfilment of the performance agreement	Competition, autonomy and outstanding positioning in the international scientific community
Structures	Autonomy and decentral, participative decision-making, scientific communities	Administrative structures defined by the state	Strengths are determined by the international scientific community, increasing efficiency and effectiveness through the use of private management techniques
MCPs IN RESEARCH MANAGEMENT			
Cultural controls	Appointment and application of professors, bottom-up planning and communication, collegial cooperation, research culture (freedom of content, methods, research partner, innovative and new research fields), consideration of different research disciplines and cultures	Top-down planning and communication	Research culture (networking, cooperation and collaboration amongst national and international scientists), top-down planning and communication (excellent research performance according to the ideas of the rectorate)
Planning	Profile-building, development planning	Development planning, performance agreements, qualification agreements, target agreements, performance reviews, university-wide research evaluations	Qualification agreements, target agreements, performance reviews, university-wide research evaluations
Cybernetic controls	University budgets (e.g., to build the profiles of fields), peer-reviews	Performance indicators (e.g., publications, third-party funding), intellectual capital reports, performance dependent budgets, internal and external benchmarking, evaluations, public budgets, research documentation systems	Performance indicators (e.g., highly cited publications, winning highly endowed, highly competitive and visible research grants), performance dependent university-internal budgets, internal and external benchmarking, evaluations, research documentation systems (to distribute university-internal public budgets), point system to evaluate performance

Table 3.
APUs' field-level logics and MCPs in the area of research management

(*continued*)

Reward and compensation	Monetary (prices) and non-monetary (appreciations) incentives for young scientists	(No management control types identified)	Monetary (prices) and non-monetary (qualifications agreements, sabbaticals, awards, appreciations) incentives (for highly cited publications, highly competitive and visible research grants)
Administrative controls	Interdisciplinary research areas (set bottom-up), interdisciplinary research-projects (measured by third-party funding and publications), research support, training events and coaching (for young scientists), administrative support	Management and internal organisation defined by law, formal guidelines	Strengths and interdisciplinary research-projects (measured by third-party funding), adapting to international guidelines, guidance and coaching for highly competitive third-party funding, networking events and seminars of external funding bodies, administrative support

Table 3.

4. Austrian public universities' field-level logics and accompanying management control practices

Table 3 provides an overview of APUs' field-level logics and the field-level-specific MCPs in the area of research management:

At APUs, the concept of "MCSs" is predominantly associated with tight, indicator-driven research control, e.g. *I am not a manager or something like that, but MCSs - it sounds very strong to me now, quantitative-indicators-driven, very mechanistic* (I 8). The controllability of research and the applicability of management control instruments (understood as indicator-driven management control types) are critically questioned by the majority of the APUs, seeing themselves as enablers and supporters of research by the provision of incentives and motivational support, e.g. [the university is not a] *ballpoint factory* (I 3). *We see ourselves as enabler of research, not as a specifier of standards.* (I 13). Moreover, the tight application of predefined indicators constrains potentials, hinders creativity and therefore leads to standardisation: *Maybe someone who is doing something great, innovative, disruptive, might not get his publications published in the journal* (I 3). *In the current standardisation, you will be praised and cuddled if you always move in these paths, however, actually it is about breaking out of these paths, if you speak of innovation and invention* (I 7).

According to *academic logic*, representatives of APUs stress academic freedom, guided by interest-led research with a maximum of autonomy at the highest international level. Universities' research reputation and maintaining ethical standards play the most important role, e.g. *freedom of science is paramount* (I 6) and ethical standards must be respected (cf. I 11). Academic logic is guided by reliance on high individual responsibility. Control is understood as support and provision of resources, e.g. *funding of research infrastructure and funding appliances* (I 8) and appreciation, e.g. *appreciation is very important, besides the point system* (I 3). Universities' targets should be achieved by decentral and participative decision-making, e.g. *research topics are always defined bottom-up [. . .] and we try to build the right structure to make that possible* (I 13). The most important management control types are *cultural controls*. For scientific excellence, autonomy and freedom of research are outstanding. Values of research culture comprise the freedom of

content, methods, selection of research partners and focusing on innovative research fields. Differences in research disciplines and cultures are accepted. Profile-building and development planning *(planning)* emerge bottom-up, informed by the (top) researchers' research topics. By the allocation of university-internal funds *(cybernetic controls)*, fields that help to build the profile of the university are supported. Evaluations are based on peer reviews. Incentive systems in the form of prizes and appreciations *(reward and compensation)* are intended to guide young scientists and indicate, to the rectorates, the direction of research. Interdisciplinary research areas *(administrative controls)* are determined bottom-up. Research projects serve to foster interdisciplinarity and innovation. Support services relieve researchers of administrative tasks.

Regarding *government logic*, APUs strive to fulfil the political and economic interests defined by the state and the triennial performance agreement, as stated: *we will adjust the research profile to the performance agreement* (I 8). Following government logic, the requirements defined by the state are to be prioritised, accompanied by a tight understanding of control, e.g. key figures of the formula-bound budget have to be met; legally required indicators will improve research performance (cf. I 14). Informed by government logic, top-down planning and communication reflect *cultural control*. Development planning *(planning)* and compliance with performance agreements follow legal requirements, because the majority of APUs' budget depends on agreements concluded with the state. By (regular) meetings between the rectorate and the units (e.g. institutes or departments), qualification and target agreements derived from the development plan and the performance agreement are concluded and consequently evaluated. Because of the performance agreements with the ministry and the obligation to prepare ICRs, agreements between research management and scientists are needed (e.g. performance reviews, interim appraisals and university-wide evaluations) to communicate and discuss governmental goals, to define goals for the units and to evaluate them. Performance indicators *(cybernetic controls)* are reported within the ICR. Research documentation systems, data management systems, research portals and management information systems are deployed. Law specifies formal structures and guidelines *(administrative controls)*.

Guided by *business logic*, APUs emphasise international research excellence and top performance in international rankings. High visibility, market-orientation, efficient goal achievement and striving for financial income, realised by the acquisition of highly competitive research grants, represent the specific characteristics, e.g. *what we want to achieve [. . .] is a maximum of visibility [of the university] in the international research area* (I 8). Concerning the applied management control types, a large number of different measures supports visibility, achieved by publications, third-party funding and top ratings. Rectorates' understanding of research performance is communicated top-down *(cultural controls)*. Values of research culture comprise networking, cooperation and collaboration amongst national and international scientists. To withstand international competition between universities, qualification and target agreements *(planning)*, performance reviews, interim appraisals and university-wide research performance evaluations are used. Research performance is quantified (e.g. through point systems) and evaluated by performance indicators *(cybernetic controls)*. Together with internal and external benchmarking instruments, they serve as measures for awards and bonuses. The university-internal distribution of the public budget partially depends on performance. Targets between the rectorate and the units are agreed and budgets are assigned on their achievement (e.g. by indicators of the last period). Highly competitive and visible third-party funding is supported by planning (target agreements), university-internal financial support

and services. Outstanding research performance (measured by highly cited publications and highly competitive and visible research-grants) of units and individuals is awarded with incentives *(reward and compensation)*. Strengths *(administrative controls)* are defined and measured by third-party projects. Guidance and coaching for highly competitive research projects and support services are offered. Networking events and seminars of external funding bodies provide assistance for writing third-party funding proposals and for implementing research projects.

5. Austrian public universities responses in dealing with their different field-level logics

Regarding APUs' responses to the different field-level logics (academic, government and business logic), coherence concerning APUs' self-concept and the applied MCPs within each field-level logic was assumed. In the following part, APUs' interaction of applied MCPs and corresponding narratives is presented, first by business logic and followed by APUs' responses to the co-existence of academic and government logic.

5.1 Austrian public universities compliance with business logic

All APUs stress the importance of international visibility, awareness and international competitiveness. To achieve these aims, the importance of highly competitive third-party funding is emphasised. Increasing (competitive) third-party funds serves to present APUs in the international research area with outstanding, excellent research achievements and to increase research budgets. APUs' narratives informed by business logic are closely aligned with their MCPs informed by business logic: *In all strategy documents, we always refer to the overriding goal of increasing competitiveness, cooperativeness and visibility within the international scientific community. This is a very strong topic* (I 5). *I would say, this [maximum of visibility [of the university] in the international research area] is the overriding goal, and it stands above all the goals of the performance agreement. Therefore, the goal [of the university] is to be perceived internationally as a research university at the highest level. In addition, how do you achieve that naturally? By encouraging the scientists to present themselves as qualitatively and internationally visible as possible* (I 8). To achieve this goal, APUs highlight network projects, competitiveness by publishing, third-party funding and cooperativeness: *For us, main goals are international perception in the scientific community, large network research projects* (I 2). *International high standing of our researchers and placement in scientific communities is important* (I 4). *You want to be on top, and of course there are benchmarks nationally and internationally* (I 7). *We see ourselves as a university that is strongly guided by the aspiration to be, at least in some areas, the absolute leader in research [. . .]* (I 13).

Regarding the used MCPs, APUs' research strategy and their strategical and operative planning aims at international research excellence and top performance. The academic hiring practice *(cultural control)* represents a key instrument (e.g. I 13). Regarding *cybernetic controls*, highly competitive third-party funding (e.g. I 1: *in terms of numbers, it's important to bring competitive third-party funding to the university, that are those grants of third-party funders that are subject to a qualitative evaluation process, [examples], very good, visible projects, lighthouse projects*) serves as a selection criterion for *planning* (appointments, qualification and target agreements) (e.g. I 3: *we have set criteria for what the minimum number of publications and third-party funding must have been achieved*) and as a parameter for obtaining a qualification agreement, private bonuses and appreciations. Incentives for third-party funding are set to enhance innovation (e.g. I 12), to enable research (cf. I 10) and overheads (i.e. assumption of indirect costs for the use of resources) are returned to the units

(e.g. cf. I 15) *(reward and compensation)*. Third-party funding serves as an indicator for the internal provision of budgets (e.g. I 8). Indicators of international visibility (I 8) measure strengths *(administrative controls)*.

5.2 Austrian public universities' responses in dealing with academic and government logic

As stated above, APUs' field-level logics are represented by MCPs and corresponding narratives, which are assumed to exhibit a fundamental interrelationship (Thornton *et al.*, 2012). Furthermore, an intertwinement of material (APUs' structures and MCPs) and symbolic (concerning field-level logics' respective self-concept) elements is implied and are constitutive for each other (Thornton *et al.*, 2012). Regarding APUs' responses to the co-presence of academic and government logic, we found compliance with government logic, a selective coupling with or rather a decoupling from government logic.

5.2.1 Austrian public universities' compliance with government logic. As a first response, APUs' compliance with government logic is outlined, referring to a more conscious obedience to institutional requirements (Oliver, 1991). APUs' narratives informed by government logic are closely aligned with their MCPs informed by government logic (e.g. I 1, I 2, I 11): the importance of institutional and individual target agreements and evaluations, because they are required by law and APUs are compared by the ministry (cf. I 11), e.g. *In Austria, there is a legal requirement to prepare an ICR. We actually have to record certain research achievements, document and evaluate them accordingly, in order to show the performance of the whole university. From this obligation, certain systems have developed* (I 13). Three narratives informed by government logic, explaining the tight application of MCPs informed by government logic, are identified: cushioning by MCPs informed by academic logic, adoption of MCPs informed by government logic in advance and application of MCPs informed by government logic as a university-internal management control instrument.

The first narrative informed by government logic relates to the moderate usage of MCPs informed by government logic compared with other countries and the combination with MCPs informed by academic logic: *[universities] cannot shut themselves off to performance indicators, [. . .] but we [Austria] apply these moderately [. . .] we always try to use this with a sense of proportion* (I 13). Only a few evaluations and decisions are based purely on performance indicators. The liberality of research topic and process are emphasised, e.g. I 13: *We do not interfere with the research process*. Instead, peer-reviews and qualitative analyses are applied, and the provision of resources is emphasised: *Provision of services [information and consulting concerning third-party funding] is important in order to ensure that the figures are correct [. . .] and visibility of the researcher and the university is ensured* (I 1). Incentives for third-party funding are provided to enhance freedom of research: *You have to find a balance between new, important and still weak fields and strong fields [that is concurrently the risk of incentives] in order not to hinder dynamic developments [. . .] the system should not solidify* (I 12).

Regarding the second narrative informed by government logic, MCPs informed by government logic are applied within the university in advance: *due to the new law, budget will be dependent on third-party funding and the amount of students of structured doctoral programs [. . .] this will be one of the guidelines* (I 8). The legal requirement is anticipated and applied within the university: *at least as far as third-party funding is concerned, we will now, from the next target agreement onwards [. . .], we will include a genuine budget-relevant third-party funding component for the first time* (I 8).

The third narrative informed by government logic refers to a reaction, in which MCPs informed by government logic are applied as a university-internal management control

instrument. I 14 highlights the importance of the improvement of performance indicators. Period budgets in the performance agreement are broken down, depending on the indicator, to the units (e.g. cf. I 14). Triennial planning is conducted top-down and bottom-up (cf. I 14: plans are presented by the units to the rectorate; cf. I 15: targets are defined by the units and discussed with the rectorate, derived from the performance agreement).

Concerning the applied MCPs, e.g. *cultural controls* (e.g. I 13: *in our case, however, the requirement is to bring in the right people and to let them do the right decisions at a lower level about how research should work [. . .] targeted appointments to become world leader in certain potential fields*) are intertwined with bottom-up and bottom-down *planning* (e.g. I 12: *the whole university is involved in a structured moderated process for development planning [. . .] performance agreements and payments in the development plan are agreed with the ministry [. . .] target and performance agreements finalised between the rectorate and the ministry are broken down to the [units], furthermore, heads of units agree additional (performance) targets*) and linked with the application of *cybernetic control* types informed by government logic, e.g. *the most important 20 indicators to control research and teaching at the university at a glance* (I 8). Indicators measure research foci, sophisticated evaluation systems and budgets that depend on third-party performance are applied. Performance targets based on key figures of the ICR are broken down to the departments and partially to the units. Higher bonuses for more competitive projects and Google Scholar rankings in cases of co-financing are deployed. *Reward and compensation* (e.g. personal congratulatory letters or (private) bonus systems for successful third-party funding) and *administrative controls* (bundling of core facility, interdisciplinary research foci and regularly evaluated profile-building areas) are applied.

5.2.2 Austrian public universities' selective coupling with government logic. As a second response, APUs react to the competing demands informed by academic and government logic in a more specific, minimalistic manner: they selectively couple specific elements of MCPs informed by government logic by applying them *to a minimum*. Pache and Santos (2013) describe selective coupling as the process of combining competing logics by drawing on elements from each logic. APUs purposefully apply MCPs informed by government logic to a lesser extent to control research. APUs' narratives informed by government logic or academic logic are aligned with their actual MCPs, because the critical view on management control types informed by government logic is consistently followed by an enhanced application of management control types informed by academic rather than government logic, therefore mitigating the conflict between academic and government logic: *Yes, of course there is performance reporting, this is very important for the ICR [. . .] [in order to control research] performance indicators are actually used to a small extent* (I 4). These performance indicators do not primarily control research (cf. I 9).

Corresponding narratives informed by academic logic refer to the inappropriateness of a *management peak* (I 4) and to maintaining the willingness to take risks in research and to support young scientists. According to this response, this cannot be achieved by strict and detailed regulations. Some APUs are committed to a different way of control that distinguishes them from highly competitive systems in other universities (cf. I 9). For instance, I 4: *Many of them [performance indicators] can also be misleading. Of course, there is also a kind of statistic, where it is also looked at how many are submitted, how many projects are successful, how many publications result from it, how many young scientists can be supported, pre/postdocs. Of course, this is documented and presented statistically. However, you also have to be a little careful not to set too strict targets, because the research landscape changes. That has to be taken into account. Yes, of course, there are performance indicators and we will always take a close look at them, but there are no sanction mechanisms or*

something like that. [Do you provide key figures?] Rather not. No. Rather that one says an increase is aimed at, or in order to maintain stability. However, it does not always make sense to give such concrete figures.

The applied MCPs comprise the provision of research support structure and means, e.g. I 4: *We see control instruments in the sense of support instruments [. . .] so more by a positive approach and less a controlling one [. . .] we try to optimise procedures, to provide means in order to increase knowledge and simplify processes*. Emphasis is given to communication between the research management and researchers, exchange, networking, collaboration, cooperation and personal contact *(cultural controls)* as well as collaborative target agreements between rectorate and units, development planning and concrete implementation within the performance agreement as an exchange process among rectorate, administration and researchers to achieve development *(bottom-up planning)*.

5.2.3 Austrian public universities' decoupling from government logic. Different and considerably more nuanced responses are also observed, in which APUs' application of MCPs does not exhibit coherence and internal consistency: APUs incorporate MCPs informed by government logic but adopt narratives informed by academic logic rather than government logic. APUs' narratives informed by academic logic serve as a "springboard into action" (Weick *et al.*, 2005, p. 409) and follow the tight application of MCPs informed by government logic.

These responses lead to a decoupling of narratives from government logic on two levels: on the first level, APUs deny the controllability of (basic) research by MCPs informed by government logic, but the actually applied MCPs are informed by government logic, e.g. I 6: *Both poles have to be reconciled [outstanding research and freedom of science], therefore, management's measures to control research are very limited or only limited [. . .] controlling should happen within the units (adapted to the regulations of the scientific community*. This is explained by the scientists' personality, e.g. *scientists are also sensitive beings* (I 5), and *people in research are often vain* (I 7). The freedom of content and methods is stressed: *do what you are interested in, or do research what you are interested in, which is appropriate, but it should be excellent* (I 5), and specifications concerning research content are refused. The function of research management as enabler, e.g. *we do not see ourselves as hinderer by bureaucracy, but as enablers, and we act accordingly [. . .] this intrinsic motivation, where we assume that it is in everyone, that this fire is not extinguished but kindled* (I 7), and research management as provider of good conditions is emphasised (I 5). On the second level, the denial of controllability is accompanied by three narratives informed by academic logic, which explain the rather tight and consistent application of *cybernetic control* types informed by government logic. For instance, sophisticated systems of key figures are applied for financial and non-financial control, in-depth information systems are deployed to evaluate employees, point systems are primarily used to distribute public budgets, and key figures and performance-dependent staff evaluations are applied (I 3). Occasionally, performance-dependent budgets (I 5) and hard (reflected in the ICR) as well as soft control instruments, e.g. *you notice that the project has potential, you have to rely on your brain and your knowledge* (I 7), are used. Dimensions are measured and evaluated by specific key performance indicators controlled by the rectorate, and indicator-based annual evaluations of departmental targets (I 6) are implemented.

Regarding the identified narratives informed by academic logic, either the application of MCPs informed by government logic is labelled differently and is rationalised by the legal obligation, or management control types informed by academic logic cushion specific MCPs informed by government logic. Thirdly, MCPs informed by government logic are attributed differently.

The first narrative informed by academic logic refers to a different labelling of *management control* itself (I 5) or to a legal prescribed necessity, for instance, I 5: *So we also control, so we also use output-oriented measures, of course. We also control on the input side [. . .] if you want to use the term in questions of appointment policy*. I 7 argues: *Things have to interlock, whether it is the development plan or the performance agreement with the federal government or the appointment of new professors. [. . .] [You do not set clear goals. Alternatively, do you say these are the goals, they have to be achieved?] I have to say that it is both. It is a balancing act. [Are performance indicators applied?] Therefore, that is indeed a fact. Moreover, it happens top-down. For example, concerning the performance agreement negotiations with the ministry. If the ministry decides: our goal is to increase publication activity throughout Austria in the coming years, and we want this to be formalised as an indicator and that it be linked to a financial allocation, then it will be difficult for you to argue against it. You have this in the performance agreement, you have to communicate it top-down and translate it. That is just one example. Therefore, it would be a lie, in my opinion, if one says that this does not exist*.

A second narrative informed by academic logic cushions specific MCPs informed by government logic. Research management recognises itself as provider of incentives and motivator and places the responsibility for decision-making on the units: *Moreover, for that reason, the resources that we use or that we use at headquarters are very much focused on incentives, motivation and the like. In addition, of course it is the case that we say the actual control should be done there, in the units, adapted to the rules of the respective scientific community* (I 6). *Planning* is accompanied by employee appraisals, and peers of the scientific community evaluate the coordination (I 6). Research management focuses on external and internal (peer-) reviews as well as on *reward and compensation* ([individual] monetary and non-monetary incentives, e.g. appreciation, award system for scientific publications with monetary personal incentives) and *administrative controls* (mobility programmes for young scientists). A wide set of internal and external peer reviews of research funding organisations is applied (e.g. in the case of non-achievement of targets, excellence and quality of applications, major projects and for mobility programmes).

The third narrative informed by academic logic attributes MCPs informed by government logic with the information and decision support function. By this narrative, MCPs out of government logic are applied to explain deviations, to initiate feedback processes and to analyse variances (Malmi and Brown, 2008): *We have, you can look at it then, a very sophisticated system of key figures; [. . .] The art is to define a street or a corridor, that is the one in which you can move and those are the rules [. . .] within this corridor they have a certain freedom [. . .] you need to understand why we do some things the way we do them, this makes it easier to accept these corridors [. . .] we want to be able to explain the "why", where do we have room for improvement* (I 3).

6. Discussion, contribution, directions for further research and limitations

The aim of this study was to address APUs' field-level logics represented by the applied MCPs and APUs' organisational responses to the existence of different field-level logics in the area of research management.

The empirical findings pertaining to *RQ1* show that each field-level logic is embedded in a specific self-concept and a field-level-specific understanding of control. The applied MCPs and the prioritisation of different MCPs vary with academic, government and business logic. Each field-level logic is translated into specific MCPs. Although the study shows that examples for the management control types of Malmi and Brown (2008) occur in all three field-level logics, the rationale for the MCPs' use is undertaken in a field-level-specific way

and depends on the field-specific system of beliefs and attitudes as expressed in the self-concept and understanding of control. Unlike prior studies, which focused on the impact of selected MCPs (Grossi *et al.*, 2020; Dobija *et al.*, 2019; Ahrens and Khalifa, 2015), the findings of this study show a much wider range of MCPs in one of universities' core mission areas, i.e. research. Furthermore, the findings contribute to the academic debate by studying the MCPs of academic, government and business logic, allowing a more integrated view, as prior research has predominantly focused on the impact of two competing logics (Cai and Mountford, 2022).

As addressed in Section 2.3, tensions between different field-level logics are likely to occur and APUs therefore have to find responses for dealing with competing field-level logics. The findings regarding *RQ2* show that MCPs informed by business logic are aligned with their corresponding narratives informed by business logic. In line with business logic, APUs are highly committed to the importance of high-impact publications and excellence in competitive third-party funding. From a managerialistic perspective, key-performance indicators are used for appointment and promotion decisions, to reinforce strengths and to provide measures for reward and compensation. Although prior studies have concentrated either on the effects of business logic or on new public management reforms (Gebreiter, 2021; Kallio *et al.*, 2021; Czarniawska, 2020; Boitier *et al.*, 2018), and often observed a symbolic compliance (Dobija *et al.*, 2019; Moll and Hoque, 2011; Melo *et al.*, 2010), we found no evidence at APUs of competition between business logic and academic or government logic.

The main lines of tension emerged between academic logic and government logic. APUs' self-concepts informed by academic and government logic were portrayed as diametrically opposed and thus challenging for APUs. As Section 4 has shown, almost all APUs question the controllability of research by MCPs and are, with nuances, critical of the application of MCSs in the area of research. Regarding the conflict between academic and government logic, we observed different and considerably nuanced responses where APUs' MCPs do not always exhibit a coherent "inner referentiality" (Friedland, 2009, p. 888). With the exception of selective coupling, in all other cases MCPs informed by government logic are fully applied and are either accompanied by narratives informed by government logic or by narratives informed by academic logic. While those APUs applying narratives informed by academic logic decidedly reject research control (decoupling from government logic), APUs complying with government logic by their narratives are far less critical of research control. Furthermore, the conflict between academic and government logic is mitigated by the application of specific MCPs informed by academic logic (Table 4).

Regarding APUs' field-level-specific narratives, almost two-thirds of the APUs (9/15) solve the tension between academic and government logic by complying with government logic. The applied MCPs informed by government logic are coherent with their corresponding narratives informed by government logic. The other third (6/15) solves the conflict between academic and government logic by either selective coupling with government logic or decoupling from government logic. APUs pursuing the strategy of selective coupling (2/15) opt for a minimalistic way: they do not generally reject MCPs informed by government logic but select specific ones. Their narratives informed by government logic are aligned with their minimum selected MCPs informed by government logic. Regarding APUs' two-level decoupling mechanisms (4/15), the responses in dealing with the competing demands of academic and government logic differ in their *de facto* acceptance of MCPs informed by government logic. Although MCPs informed by government logic are strongly rejected, the analysis shows that they are applied very tightly and are legitimised by narratives informed by academic logic (labelling and attributing).

	Narratives informed by government logic	Narratives informed by academic logic
Application of MCPs informed by government logic	Compliance with government logic • Cushioning by MCPs informed by academic logic • Adoption of MCPs informed by government logic in advance • Application of MCPs informed by government logic as a university-internal management control instrument	Decoupling from government logic • Labelling by narratives informed by academic logic • Cushioning by MCPs informed by academic logic • Attributing by narratives informed by academic logic
Application of selective MCPs informed by government logic	Selective coupling with government logic Application of MCPs informed by academic logic	

Table 4.
APUs' responses in dealing with academic and government logic

However, it is not only that narratives are applied to cope with the tension between academic and government logic. Beyond that, the conflict is mitigated by the application of specific MCPs informed by academic logic. APUs try to cushion MCPs informed by government logic by MCPs informed by academic logic (both in the case of compliance with government logic and in the case of decoupling from government logic). APUs' MCPs informed by government logic are used for economic and legitimacy purposes. This finding is in line with Dobija *et al.* (2019), who found that performance measurement practices have experienced a rational use within the university. In the case of compliance as well as decoupling, APUs actually apply selected MCPs informed by government logic for managerial, rational purposes following the new public management paradigm. The exception are APUs that selectively couple specific management control types informed by government logic to serve accountability purposes.

The conflict between APUs' academic core identity as well as APUs' basic understanding of control and representing the political and economic interests of the state have to be reconciled and are thus crucially challenging for APUs (Pache and Santos, 2010). Striving for a compromise between academic and government logic leads to discrepancies between MCPs and corresponding narratives, because the applied MCPs are more in line with government logic than their rationalising narratives and cushioning practises, which are more in line with academic logic. In the cases of compliance with government logic, although APUs' narratives are aligned with their MCPs informed by government logic, some APUs try to mitigate the conflict between the two conflicting logics by cushioning them through MCPs informed by academic logic. Regarding the decoupling strategy (4/15), APUs deny the controllability of research by MCPs informed by government logic, apply MCPs informed by government logic, and reason them with narratives informed by academic logic (labelling and attributing). Also with this strategy, a cushioning by MCPs informed by academic logic occurs.

In total, significantly more than the half of the APUs (9/15) strongly defend their self-concept informed by academic logic. The observed differentiated sets of "meaningful activities" (Thornton *et al.*, 2012, p. 128) were often portrayed as a rational strategy for dealing with the emergent constraints imposed by the powerful governmental resource provider. The decoupled narratives provide some leeway for academia and for preserving APUs' academic core identity. The vast majority of the interview partners are senior researchers, which have been socialised into academic logic and are therefore inclined to

defend their academic self-concept (Pache and Santos, 2010). Their professional identity influences their academic perception of the university as a professional organisation.

In summary, the findings of this study offer the following contributions to the research field of institutional logics and MCSs at higher education institutions. Firstly, field-level-specific MCPs and their corresponding narratives in research management of public universities are focused on. Secondly, the study adds to the academic debate by providing insights into how academic, government and business logic are translated into MCPs and corresponding narratives in the area of research management. Thirdly, APUs' responses to the demands informed by academic, government and business logic are analysed, showing APUs' accordance with business logic. At APUs, tensions emerged between academic and government logic. Fourthly and finally, regarding the ways APUs deal with different field-level logics, the findings of this study provide an interesting theoretical contribution: Research represents the core mission of APUs, guided by a self-concept informed by academic logic. Therefore, particularly APUs' compliance with business logic offers an important finding, showing that APUs are highly committed to the importance of international research excellence and the accompanying MCPs informed by business logic. Regarding APUs' responses in dealing with academic and government logic, those APUs which pursue selective coupling choose a minimalistic strategy by selecting those MCPs informed by government logic that they need for accountability purposes. Within the two strategies of compliance with and decoupling from government logic, the majority of APUs defend their academic self-concept, either by corresponding narratives informed by academic logic or at least by cushioning MCPs informed by government logic by MCPs informed by academic logic. Therefore, at APUs, narratives and MCPs informed by academic logic serve as instruments to protect the academic self-concept, which strongly influences APUs. Moreover, insights into APUs' two-level decoupling mechanism provides an interesting contribution inasmuch as MCPs and narratives diverge, starting with the rejection of the controllability of research, while *de facto* applying MCPs informed by government logic accompanied by narratives informed by academic logic. Finally, full compliance with government logic is observed by less than half of the APUs, where corresponding narratives accompany MCPs informed by government logic.

This study also opens up new avenues for further research. To analyse the impact of the implementation of MCPs, future research should include longitudinal studies and integrate the perspective of the affected researchers on the faculty, department and individual level. Furthermore, the interaction and interplay between different management control types, which lies outside the scope of this paper, would be well worth investigating. Beyond that, in the paper, the management control types are merely one form of classification of MCPs. Furthermore, different levels of control (e.g. institutional and individual level of control) are not considered.

A limitation of the paper is the selective acceptance of the in-depth expert interviews by APUs' representatives of research management. Nevertheless, the sample covers the wide range of disciplines at APUs. Another limitation is that the findings are context-specific, because the study focuses on APUs. Outside the Anglo-Saxon university, Austria is nevertheless an interesting case, as it was the first country to introduce an obligatory ICR as an instrument for monitoring the triennial performance agreements between government and universities, and therefore forced APUs to react to the accompanying management control requirements. As a next step, it would be interesting either to analyse the role of field-level logics and narratives in a comparative way by focussing on high-ranked German, Austrian and Swiss universities, or to compare conflict-reducing mechanisms between Scandinavian, Central European and Southern European Universities, which pursue different approaches to dealing with the requirements for performance excellence.

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