Essays on Management Control Configurations and the Perception of Meaningful Work in the Management Accounting Function

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Abstract

The role of the managing accounting function has been changing for several years due to the increased use of digital technologies and the expansion of its focus to non-financial key figures. In general, this development leads to many positive outcomes on organizational level. However, on individual level, this role change, which is also connected to a change and expansion of tasks and required skills, can lead to uncertainties and a loss of meaning in one's own work. The individual perception of meaningful work is, however, an important antecedent for individual work motivation, performance, and personal well-being. A central component of meaningful work is the perception that the role of the job fits one's identity i.e., that there is an identity fit. Research has shown that management accountants use a variety of sensemaking activities to positively reframe their changing role. How a management control system can be supportive in enabling the persistence of these positive behavioural outcomes - meaningful work and identity fit - is the focus of this cumulative dissertation. After the development of a conceptual relationship between the use of management controls and the perception of meaningful work, 277 cross-sectional responses from a survey of management accountants from Germany, Austria, Liechtenstein, and the German-speaking part of Switzerland are analysed.

Based on bibliometric analyses and a structured literature review of academic research from organizational, management and accounting literature, *Article 1* develops a conceptual model of the relationship between the use of management controls and the perception of meaningful work. *Article 2* empirically examines whether the use of management controls can be a sensegiving mechanism to facilitate the perception of meaningful work in management accountants' changing work contexts by using the cross-sectional dataset and applying a set-theoretical analysis (fuzzy set qualitative comparative analysis). The results show that multiple combinations of formal and informal controls as interchangeable elements are equally effective leading to meaningful work. *Article 3* expands the empirical analyses and identifies configurations of formal and informal management controls that support an identity fit for management accountants. The findings reveal that informal controls are most important to influence the reconstruction of an aspired identity fit. This quantitative, set theoretic approach complements prior mostly qualitative studies and contributes to the package use of management controls.

Keywords: meaningful work; identity fit; formal and informal controls as a package; configuration theory; fuzzy set qualitative comparative analysis; management accounting change

Zusammenfassung

Das Rollenbild in der Controlling Funktion ist seit einigen Jahren durch die vermehrte Nutzung digitaler Technologien als auch durch eine Erweiterung ihres Fokus auf nicht finanzielle Kennzahlen im Wandel. Grundsätzlich hat diese Entwicklung viele positive Effekte auf Organisationsebene. Jedoch kann dieser Rollenwandel, der auch eine Änderung und Erweiterung von Aufgaben und benötigten Fähigkeiten erfordert, auf individueller Ebene zu Unsicherheiten und einem Verlust über den Sinn der eigenen Arbeit führen. Die individuelle Wahrnehmung, die eigene Arbeit als persönlich sinnstiftend anzusehen, ist jedoch eine wichtige Voraussetzung der Arbeitsmotivation, der Leistung als auch des persönlichen Wohlergehens. Ein zentraler Bestandteil von sinnstiftender Arbeit ist auch die Wahrnehmung, dass die eingenommene Rolle zur eigenen Identität passt, also ein Identitäts-Fit besteht. Die Forschung hat gezeigt, dass Controller diverse sinngebende Gestaltungsmöglichkeiten nutzen, ihre sich ändernde Rolle neu auszurichten. Wie Managementkontrollen unterstützend wirken können, um die Beständigkeit dieser positiven Verhaltensweisen – sinnstiftende Arbeit und Identitäts-Fit - zu ermöglichen, steht im Mittelpunkt dieser kumulativen Dissertation. Nach der Erarbeitung eines konzeptionellen Zusammenhangs zwischen der Nutzung von Managementkontrollen und der Wahrnehmung von sinnstiftender Arbeit werden 277 Querschnittsdaten aus einer Befragung von Controllern aus Deutschland, Österreich, Liechtenstein und dem deutschsprachigen Teil der Schweiz ausgewertet.

Auf Basis bibliometrischer Analysen und einer strukturierten Literaturauswertung wissenschaftlicher Studien aus der Organisations-, Management- und Accountingliteratur entwickelt *Artikel 1* ein konzeptionelles Modell über die Beziehung zwischen der Nutzung von Managementkontrollen und der Wahrnehmung sinnstiftender Arbeit. *Artikel 2* untersucht empirisch, ob der Einsatz von Managementkontrollen die Wahrnehmung über sinnstiftende Arbeit von Controllern in deren sich verändernden Arbeitskontexten unterstützen kann. Es wird ein Querschnittsdatensatz verwendet und eine mengen-theoretische Analyse (fuzzy set qualitative comparative analysis) genutzt. Die Ergebnisse zeigen, dass verschiedene Kombinationen von formellen und informellen Kontrollen als austauschbare Elemente gleichermaßen für die Wahrnehmung sinnstiftender Arbeit wirksam sind. *Artikel 3* erweitert die empirischen Analysen und identifiziert Konfigurationen von formellen und informellen Managementkontrollen, die einen Identitätsfit für Controller unterstützen. Die Ergebnisse zeigen, dass informelle Kontrollen den größten Einfluss auf die Wiederherstellung eines angestrebten Identitäts-Fits haben. Dieser quantitative, mengen-theoretische Ansatz ergänzt frühere, meist qualitative Studien und trägt zur «Package» Nutzung von Managementkontrollen bei.

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1. Introduction

The management accounting function is an organizational service function that entails financial information analysis and decision support (Horngren et al., 2015). In most countries, this professional role is not officially regulated by professional associations but rather shaped within the organization or based on the occupational identity (Ahrens & Chapman, 2000).

Lately, related to current megatrends such as digitalization[1] and the implications of artificial intelligence, practitioners as well as academics have noted changing organizational roles for management accountants (Byrne & Pierce, 2007; Goretzki et al., 2013; Horton & Wanderley, 2018; Järvenpää, 2007) often referred to a business partner role (Burns & Baldvinsdottir, 2005; Goretzki et al., 2013; Morales & Lambert, 2013). This role is associated with the assimilation of accounting information with indicators of non-financial performance to create value and facilitate greater efficiency and business improvement (Horton & Wanderley, 2018).

On organizational level, the change to more business orientation is seen as a positive development as the intensified interaction between management accountants and general managers contributes to a better interpretation and evaluation of financial information for managerial decision making (Byrne & Pierce, 2007; Hartmann & Maas, 2011).

However, in practice, the business partner role often remains fragile (Goretzki & Messner, 2019). Management accountants usually operate in hybrid roles with dual or multiple functions, and their level of business involvement reflects multiple points on a continuum between lower and higher involvement (Horton & Wanderley, 2018; Lambert & Sponem, 2012). Moreover, management accountants are often stigmatized by a negative image compared to other professions in an organization for their focus on costs (Byrne & Pierce, 2007; Hiller et al., 2014). Generally, individuals show stronger identification with positive and prestigious work settings that fulfil their basic needs for self-esteem and self-enhancement (Dutton et al., 1994). Therefore, changing work conditions often lead to loss of work meaningfulness when changes create contradictions and paradoxes for individuals (Bailey et al., 2017; De Boeck et al., 2019; Florian et al., 2019). Since the management accounting function is significantly integrated into the operations of their employing organization, and thus largely responsible for organizational (financial/non-financial) performance management, a better understanding

[1] According to the recent World Economic Forum's Future of Jobs report, there is hardly a discipline or industry that will not be affected by digitalization. Fifty percent of all professions will change in a certain way by 2025 as the use of technology increases (Schwab & Zahidi, 2020). The forum estimates that 85 million jobs could be lost by 2025 because of a shift in the division of labor between humans and machines. At the same time, 97 million new jobs could be created. The report further states that organizational support functions such as accountants are particularly affected by digitalization.

which conditions make management accountants more enthusiastic, more motivated, and more proactive at work is highly important for any organization, especially in times of change.

Thus, this dissertation investigates management control configurations that help to make management accountants' work more meaningful and that support an identity fit.

Meaningful work is defined as the value of a work goal or purpose judged in relation to an individual's ideals or standards (Allan et al., 2019; May et al., 2004; Pratt & Ashforth, 2003; Spreitzer, 1996). Previous studies have examined many positive outcomes related to the perception of meaningful work such as work motivation (Foulk et al., 2019; Hackman & Oldham, 1980; Humphrey et al., 2007), work behavior (Bunderson & Thompson, 2009), engagement (Barrick et al., 2015; Humphrey et al., 2007; Kahn, 1990; May et al., 2004; Schneider et al., 2018), psychological empowerment (Drake et al., 2007; Hall, 2008), thriving (Paterson et al., 2014), employee well-being (Franco-Santos & Doherty, 2017; Van De Voorde et al., 2012) and performance (Gartenberg et al., 2019; Humphrey et al., 2007; Wrzesniewski, 2003). The literature regards meaningful work as a multidimensional construct which correlates with the constructs of "self", in terms of work that is satisfying and fulfilling to the individual, and "other", in terms of work that is of service to a wider cause or gives rise to a sense of belonging to a broader group (Bailey et al., 2017; Lips-Wiersma & Wright, 2012; Pratt & Ashforth, 2003; Robertson et al., 2020; Rosso et al., 2010). The former also captures one's identity in relation to work. An identity influences individual attitudes and behaviours (Ashforth & Mael, 1989; Chreim et al., 2007; Horton & Wanderley, 2018) and represents the answer to the question "Who am I?" (Pratt & Foreman, 2000). An identity fit refers to the match between an individual's values and skillsets and the requirements of a job (Kristof, 1996; May et al., 2004). When tasks and responsibilities match individual competencies, employees are more satisfied and engaged (Kristof-Brown et al., 2005; May et al., 2004).

Management controls include all rules, practices, values, and other activities that managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives which also involves support for employee well-being. Thus, the construct management control focus on controls that influence human behaviour. Management controls are different from the organizational controls or accounting systems that are designed to support decision making such as quality and inventory controls, which are termed management accounting systems (Malmi & Brown, 2008).

Fragmented research on meaningful work suggests that practices such as clear goals, sufficient resources, transformational leadership, constructive feedback, a collaborative culture, and a clear vision facilitate meaningful work (Amabile & Pratt, 2016; Cartwright & Holmes, 2006; Pratt & Ashforth, 2003). However, little is known about the influences of management controls in relation to the perception of meaningful work. This dissertation attempts to gather first insights on this relationship and refers to the control literature that focuses on design choices of controls (Bedford, 2020; Gerdin, 2020; Gerdin & Greve, 2004; Grabner & Moers, 2013; Kruis et al., 2016; Malmi & Brown, 2008) and also highlights the ongoing use of management controls to be effective (Ferreira & Otley, 2009; Merchant & Otley, 2020; Wouters & Wilderom, 2008). A growing control literature suggests that it matters how controls are perceived, and that employees' outcomes depend on whether management controls are providing valuable information and giving employees freedom for own choices of their actions or whether they are seen as communicating restrictions and limits (Ahrens & Chapman, 2004; Franco-Santos & Doherty, 2017; Speklé et al., 2017). Research also begun to highlight the positive effects of interactions between formal and informal management controls in a control package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Malmi & Brown, 2008; Otley, 1999).

In general, two perspectives of a control design evolved in the literature. The system approach claims that control practices form a control system, when these practices are interdependent and the design choice has taken the interdependencies i.e., complements and substitutes into account (Grabner & Moers, 2013). The package approach starts with an aggregate investigation of management control practices to identify which management control practices are likely to act as complements or substitutes and then couple these controls independently as a control package (Bedford, 2020; Bedford et al., 2016; Malmi & Brown, 2008). The concept of a package points to the fact that different control systems are often introduced by different interest groups in a firm. Thus, different formal and informal control configurations may be used simultaneously in different combinations, at different times and to different extents as interchangeable elements (Bedford, 2020; Ferreira & Otley, 2009). The two views arrive from opposing theoretical approaches to measure management control fit - the cartesian approach (system perspective) and the configuration approach (package perspective). Figure 1 illustrates both approaches. The cartesian approach argues that fit between context and structure is a continuum that allows frequent, small movements by organizations from one state of fit to another. The configuration approach argues that there are only a few states of fit between context and structure, with organizations having to make "quantum jumps" from one state off it to another (Gerdin & Greve, 2004).

Both perspectives and other attributes of control design will be analysed in *Article 1* of this dissertation. This article further examines the literature related to the construct meaningful work and investigates conceptually which control design choices are most suitable to facilitate the perception of meaningful work. *Article 2* focuses on management accountants in their changing work contexts and how management controls can facilitate their perception of meaningful work. *Article 3* analyses the topic even further and takes a deep dive by exploring specifically the identity fit of management accountants. Employing the gained knowledge from *Article 1*, this thesis adopts the package perspective of the design and use of management controls and applies configuration theory in the empirical examinations. The empirical *Articles*

2 and *3* examine which combinations of formal and informal controls as a package facilitate the perception of meaningful work and identity fit for management accountants.

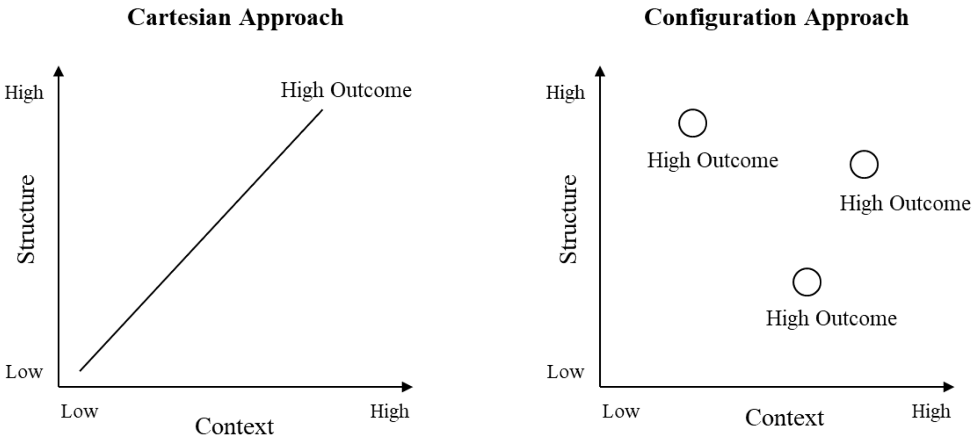

Figure 1 Example of Typical Relationships Between Context and Structure, According to the Cartesian and Configuration Approaches Derived from Gerdin and Greve (2004)

To collect the data, a cross sectional survey of management accountants from Germany, the German speaking part of Switzerland, Liechtenstein, and Austria is used, and fuzzy set qualitative comparative analysis (fsQCA) is applied to analyse the management control packages. In configurational analyses the focus shifts from the analysis of net effect of a single characteristic on outcomes to the analysis of multiple configurations associated with an outcome of interest (Frambach et al., 2016) and gives the possibility to overcome the problems of investigating complex control packages by using survey data (Malmi & Brown, 2008).

This dissertation contributes to research on the perception of meaningful work and on the reconstruction of an identity fit. It also adds knowledge to research on formal and informal control configurations as a control package. This dissertation is further of particular importance for various professions that are affected by role change, as from the findings of the management accounting function implications can also be made for other organizational functions that face changes in their professions.

1.1. Three Articles on Control Configurations for Individual Behavioural Outcomes

This dissertation contributes to research on management control packages and on the effects of formal and informal control configurations on individual behavioural outcomes. Table 1 provides an overview of the articles, including the objective, analytical focus, main research question, empirical context, theoretical concept, and main findings in the context of the dissertation.

Table 1 Overview of Research Projects

	Article I	**Article II**	**Article III**
Title	The Use of Management Controls to Enhance the Perception of Meaningful Work – A Systematic Literature Review	Management Control Configurations and the Perception of Meaningful Work in the Management Accounting Function	The Reconstruction of a Professional Identity in Times of Change - Evidence from the Management Accounting Function
Analytical focus and research question	Does the use of management controls have an influence on the perception of meaningful work?	How can organizations facilitate an environment for management accountants that enables their perception of meaningful work by using different configurations of management controls?	Which combinations of formal (organizational level) and informal (group level) management controls can help management accountants to gain legitimacy for the reconstruction of an identity fit?
Empirical context	-	Management accountants' changing work contexts and risks of meaningless work perceptions	Legitimization of aspired identity of management accountants in changing work contexts
Theoretical concept	Enabling use of controls (Ahrens & Chapman, 2004); levers of control framework (Simons, 1994), formal and informal use of controls (Ferreira & Otley, 2009), too-much-of-a-good-thing effect (Pierce & Aguinis, 2013)	Organizational sensegiving (Gioia & Chittipeddi, 1991); enabling use of controls (Ahrens & Chapman, 2004); management controls as a package (Malmi & Brown, 2008); formal and informal use of controls (Ferreira & Otley, 2009)	Institutional work (Lok, 2010); identity reconstruction (Chreim et al., 2007; Dutton et al., 2010); management controls as a package (Malmi & Brown, 2008); formal and informal use of controls (Ferreira & Otley, 2009)
Methodology	Conceptional	Exploratory	Exploratory

Method	Structured literature review and bibliometric analyses	*Quantitative design:* Cross sectional survey with set-theoretic analysis (fsQCA)	*Quantitative Design:* Cross sectional survey with set-theoretic analysis (fsQCA), and variance-based analyses
Results	Identification of a research gap on the facilitation of meaningful work. Development of five propositions and a conceptual model of a nonlinear, inverted u-shaped relationship between the use of controls and the perception of meaningful work.	Combinations of beliefs and interactive controls together with an environmental CSR commitment of the employing firm are core conditions for the perception of meaningful work for management accountants. Besides, management accountants find their work particularly meaningful when they can shape their work themselves and self-determination is particularly pronounced.	There are multiple, equally effective ways to support high identity fit for management accountants. Several solutions highlight the use of informal controls like group culture, leader-member-relationship quality, and psychological safety. The configurations differ regarding the career stages of management accountants.
Conclusion for dissertation	The meaningful work perception can be managed using sufficient interactions of enabling management controls.	The package use of formal and informal controls is a suitable sensegiving mechanism for management accountants to perceive meaningful work.	The interaction of particularly informal controls strengthens the legitimization of management accountants aspired identity by highlighting the social interactions on group level that are important for an identity fit.
Overall contribution	Individual level behavioural outcomes such as meaningful work and identity fit can best be managed by understanding management controls as a package and using formal and informal controls in a configuration.		

Article 1 draws on insights from the management control literature on control design choices and their use (Bedford, 2020; Ferreira & Otley, 2009; Malmi & Brown, 2008; Wouters & Wilderom, 2008) to examine the relationship between management controls and meaningful work as an outcome. The article especially focuses on control design choices such as enabling versus coercive uses, considerations of systems or packages, the involvement of informal controls to formal systems and the intensity of use of controls. First, the study applies bibliometric and structured literature review techniques to determine the conceptualization,

antecedents, and limits of meaningful work. 384 scientific publications in the business literature are determined using a bibliometric search. The bibliometric analyses show that the literature is highly fragmented and new theories are still emerging. Four broad streams are identified by using a key word co-occurrence analysis (van Eck & Waltman, 2014; van Eck et al., 2010). A structured literature search of 90 articles gives further insights on antecedents and limits of meaningful work. Second, a conceptual model of a nonlinear, inverted u-shaped relationship between the use of controls and the perception of meaningful work is developed with the findings from the literature review and the knowledge from the management control theories. The study proposes that the use of enabling interdependent formal controls can enhance the perception of meaningful work. It is also proposed that this positive relationship can even be stretched by the interaction of informal controls as an enabling control package. Furthermore, the positive relationship between the use of management controls and the perception of meaningful work may decrease after a certain degree of intensity, following a "too-much-of-a-good-thing" effect that suggests that antecedent variables widely accepted as directing to desirable outcomes can lead to negative effects in practice (Pierce & Aguinis, 2013).

Article 2 applies configuration theory and empirically test which combinations of formal and informal controls as a package facilitate the perception of meaningful work for management accountants. To collect the data, we rely on a cross sectional survey of 277 management accountants from Germany, the German speaking part of Switzerland, Liechtenstein, and Austria. We use fsQCA for the analyses to mitigate the shortcoming of multivariate approaches when analysing multiple interactions (Fiss, 2011; Ragin, 2000, 2008). The results of the analyses show that the package use of formal and informal controls is a suitable sensegiving mechanism for management accountants to perceive meaningful work (Maitlis & Christianson, 2014; Rouleau, 2005). Especially, combinations of beliefs and interactive controls together with a perceived environmental corporate social responsibility (CSR) commitment of the employing firm are core conditions for the outcome meaningful work. We also find that management accountants perceive meaningful work even when organizations hardly use sensegiving controls in a different set.

Article 3 focuses on the realization of an identity fit perceived by management accountants by using combinations of formal (organizational level) and informal (group level) management controls. The study applies an institutional lens (Abrahamsson et al., 2011; Goretzki et al., 2013; Taylor & Scapens, 2016) and analyses the gathered dataset of 277 responses of management accountants with fsQCA (Ragin, 2014; Ragin & Fiss, 2008). The results of the study show that there are multiple equally effective ways to support an identity fit for management accountants. First, within the overall sample several solutions show that informal group level controls are especially relevant to support an identity fit. Second, this study finds differences in the configurations of controls regarding different career stages in the finance function. To support the identity fit for junior management accountants, a combination of organizational level as well as group level mechanisms is required. In case of leading functions only informal controls and the absence of certain formal controls are supportive core conditions to facilitate a high identity fit. The results are of high practical relevance in developing individual control packages for each career stage that benefit the specific needs of different job responsibilities and attitudes (Horton et al., 2020).

1.2. Contribution

The research insights of this cumulative dissertation are a first attempt to investigate the relationship between the use of management controls and the perception of meaningful work as well as an identity fit in the empirical context of the changing management accounting function. The articles resulted in several conference proceedings which are summarized in the Appendix of this chapter.

1.2.1. Theoretical Implications

Article 1 places special emphasis on how management controls enable the perception of meaningful work and offers important implications to the management control literature. First, the study adds knowledge to the stream that regards enabling control configurations (Ahrens & Chapman, 2004; Franco-Santos & Doherty, 2017; Wouters & Wilderom, 2008). Second, it contributes to the stream of management accounting literature that examines the levers of control framework (Kruis et al., 2016; Speklé et al., 2017; Simons, 1995; Widener, 2007). Third, the study contributes to the research that examines the configurations of formal and informal controls as a package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Gerdin et al., 2019; Malmi & Brown, 2008; Pfister & Lukka, 2019). Similar to the findings of Pfister and Lukka (2019), we argue that the involvement of informal controls can stretch the effect of a merely formal control use. Fourth, the study provides a conceptual model for a nonlinear, inverted u-shaped relationship between the intensity of use of controls and meaningful work perceived by employees. We follow calls of recent management accounting literature to consider capturing non-linear models (Bedford, 2020; Burkert et al., 2014; Luft & Shields, 2003). Our insights can also be extended to other behavioural outcomes.

The findings of *Article 2* add valuable knowledge to the management accounting and meaningful work literature by empirically examining meaningful work antecedents. First, the study adds to the recent discussions that control practices within an organization are more likely to have the form of a package rather than a totally coherent system (Bedford, 2020; Malmi & Brown, 2008; Merchant & Otley, 2020). By using fsQCA, this study aims to mitigate the weaknesses of variance-based methods when it comes to analysing configurations. As such, this study provides novel insights in the management accounting research stream and follows recent approaches (Bedford et al., 2016; Erkens & Van der Stede, 2015). Second, the findings contribute to the literature that focusses on the advantages of the use of the levers of control (Kruis et al., 2016; Mundy, 2010; Widener, 2007) as the findings add knowledge to the dual interactions of the levers. Further, our results show that perceived environmental commitment of a firm contributes to high meaningful work for management accountants. This adds to previous CSR research that highlights the positive effects on individual level when employees perceive themselves as working for an environmentally responsible organization (Bauman & Skitka, 2012; Glavas & Kelley, 2014; Meynhardt et al., 2018; Turker, 2009).

Article 3 identifies which combinations of different mechanisms on organizational level (formal controls) and group level (informal controls) support the identity fit of management accountants in order to be able to shape their role effectively. By using an institutional lens (Abrahamsson et al., 2011; Goretzki et al., 2013; Taylor & Scapens, 2016) and applying configuration theory (Ragin, 2014; Ragin & Fiss, 2008), the study contributes to research on the identity reconstruction of management accountants (Abrahamsson et al., 2011; Goretzki & Messner, 2019; Horton & Wanderley, 2018). The use of fsQCA allows to identify interactions of different support mechanisms for an identity fit within a large-scale sample. Thereby the study complements previous research that mostly relies on case study data (Goretzki et al., 2013; Lepistö et al., 2018; Morales & Lambert, 2013) or draws conceptional relationships (Horton & Wanderley, 2018). Furthermore, *Article 3* also contributes to the literature that focusses on the configurations of formal and informal controls as a control package and follows latest research recommendations to study management control packages (Bedford, 2020).

1.2.2. Practical Implications

In terms of practical implications, the studies of this dissertation provide important insights to managers about how to design and use management controls related to individual behavioural outcomes of employees. Understanding how management controls are most effective is a relevant managerial concern as usually high investments are required to design them. The research setting of this dissertation regards particularly management accountants' perceptions of meaningful work and identity fit in their changing work contexts. However, the findings also have implications for practitioners from other organizational professions who face changes and need to engage in sensemaking and identity work.

The literature review and the conceptualization of the relationship between management controls and meaningful work in *Article 1* reveal that meaningful work perceptions can be managed using sufficient interactions of enabling management controls. The model proposes that the perception of meaningful work will not be realized if controls are unrelated and specific practices are not executed by management. Besides, the interaction of formal and informal controls may fully empower the perception of meaningful work and even stretch the effects of the mere use of a formal control system. Practitioners should therefore reflect which informal control practices like group culture or transformational leadership can be activated to support formal control systems to fully enhance the employee' perception of meaningful work. The findings also reveal that meaningful work has limits and a too intense control use might impair the perception of meaningful work. Therefore, the use of controls needs to be flexibly adapted to prevent unintended consequences.

Article 2 demonstrates how management controls can be an organizational sensegiving approach that facilitates the perception of meaningful work. Practitioners need to be aware of the negative effects of sensegiving when it is only restricted to top-down control for certain change processes. It rather needs a positive valence by an enabling work environment that guides sensemaking of individuals. The study shows that diverse formal and informal controls are most effective to enhance the perception of meaningful work. Therefore, management can apply diverse tools rather than design a complex system. Especially the use of informal controls is quickly and flexibly approachable with certain leadership practices. The results of this study emphasize further the positive effect on the meaningful work perception when organizations have an honest commitment to environmental responsibility, as meaningful work is not merely received from job characteristics but also addresses actions that have an impact on beneficiaries.

The results of *Article 3* address that support mechanisms for identity fit do not work in isolation but are rather an interplay in triggering identity work on organizational and group level. Moreover, practitioners need to consider that the relationship between management accountants and other organizational members is important to strengthen the management accountants' identity e.g., the existence of a trusting relationship to superiors is highly relevant. Besides, general managers can be the source of fragility in accountants' identity reconstruction. Therefore, this study highlights the importance of the relationship between both professional groups.

Appendix

	Article 1
Title	The Use of Management Controls to Enhance the Perception of Meaningful Work – A Systematic Literature Review
Authors	Janine Burghardt, Klaus Möller
Contribution per author	See declaration about co-authorship
Abstract	This study examines the relationship between the use of management controls and the perception of meaningful work. Meaningful work is an important driver of individual performance and can be enabled by a sufficient use of management controls. Based on bibliometric analyses and a structured literature review of academic research from organizational, management and accounting literature, we develop a conceptual model of the relationship between the use of management controls and the meaningful work perception. First, we propose that the use of formal management controls in a system (i.e., the levers of control framework) is more powerful than using unrelated formal controls only. Second, we suggest that the interaction of a formal control system together with informal controls working as a control package can even stretch the perception of meaningful work. Third, we argue that the intensity of the control use matters to enhance the perception of meaningful work (inverted u-shaped relationship).
Keywords	meaningful work, control use formal and informal controls, control package intensity of control use
Status	1. Conference contribution at the EAA Annual Congress 2021 (virtual) 2. ACA-UNISG Working Paper Series 3. Preparing for submission to Behavioral Research in Accounting (BRA)

	Article 2
Title	Management Control Configurations and the Perception of Meaningful Work in the Management Accounting Function
Authors	Janine Burghardt, Klaus Möller
Contribution per author	See declaration about co-authorship
Abstract	This study examines whether the use of management controls can be a sensegiving mechanism to facilitate the perception of meaningful work in management accountants' work contexts. Meaningful work is a critical individual well-being factor and serves as an organizational performance indicator. Driven by digitalization, management accountants experience a role change which leads to individual uncertainty. Therefore, management accountants engage in sensemaking activities to perceive meaningful work. Organizations may use a package of formal and informal management controls to give sense and to facilitate the perception of meaningful work. To explore the use of management controls, we apply configuration theory and conduct fuzzy set qualitative comparative analysis (fsQCA) within a cross-sectional survey sample of 277 management accountants. We find that particularly configurations of beliefs and interactive controls together with an organizations' high commitment in environmental corporate social responsibility (CSR) activities facilitate management accountants' meaningful work perceptions. We contribute to research on formal and informal control configurations as a package and to research on meaningful work in changing work contexts by exploring the management accounting function.
Keywords	meaningful work, formal and informal controls as a package, configuration theory, fuzzy set qualitative comparative analysis, management accounting
Status	1. Conference contribution at the Annual Conference for Management Accounting Research (ACMAR) 2021 at the WHU – Otto Beisheim School of Management (virtual) 2. ACA-UNISG Working Paper Series 3. Preparing for submission to Management Accounting Review (MAR)

	Article 3
Title	The Reconstruction of a Professional Identity in Times of Change - Evidence from the Management Accounting Function
Author	Janine Burghardt
Abstract	This study investigates which configurations of organizational level and group level mechanisms support an identity fit for management accountants in the changing management accounting profession. It aims to complement recent qualitative management accounting research. This stream just begun to use role and identity theory to investigate role expectations, conflicts, and coping strategies of management accountants. By using an institutional lens, this study builds on configuration theory and employs a fuzzy set qualitative comparative analysis (fsQCA) to indicate all possible configurations of formal and informal management controls that legitimize management accountants' identity reconstruction. The analyses are based on the results of a cross-sectional survey of 277 management accountants from Germany, Austria, Switzerland, and Liechtenstein. The results show that a strong group culture and high psychological safety on the group level are relevant conditions for a high identity fit. Further, the configurations differ regarding the career stages of management accountants. This study contributes to research on identity reconstruction and to research on formal and informal control configurations as a control package.
Keywords	management accountant, identity fit, formal and informal controls, configuration theory, fuzzy set qualitative comparative analysis
Status	1. Conference contribution at: 1.1. ERMAC 2021 - Summer School and Research Conference at WU Vienna (virtual) 1.2. EAA Annual Congress 2022 (Bergen) 1.3. The Annual Conference for Management Accounting Research (ACMAR) 2022 at the WHU – Otto Beisheim School of Management (Vallendar) 2. ACA-UNISG Working Paper Series 3. Preparing for submission to Accounting, Organizations and Society (AOS)

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Article 1

Management Controls and the Perception of Meaningful Work – A Systematic Literature Review

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2. Abstract

This study examines the relationship between the use of management controls and the perception of meaningful work. Meaningful work is an important driver of individual performance and can be enabled by a sufficient use of management controls. Based on bibliometric analyses and a structured literature review of academic research from organizational, management and accounting literature, we develop a conceptual model of the relationship between the use of management controls and the meaningful work perception. First, we propose that the use of formal management controls in a system (i.e., the levers of control framework) is more powerful than using unrelated formal controls only. Second, we suggest that the interaction of a formal control system together with informal controls working as a control package can even stretch the perception of meaningful work. Third, we argue that the intensity of the control use matters to enhance the perception of meaningful work (inverted u-shaped relationship).

Keywords: meaningful work, control use formal and informal controls, control package intensity of control use

JEL Classifications: D21, M12, M14, M40

3. Introduction

Meaningful work is defined as the judgement that one's work accomplishes significant, valuable, or worthwhile goals that are congruent with one's values (Allan et al., 2019) and it is a significant driver of motivation, work engagement (Allan et al., 2019; Barrick et al., 2015; Rich et al., 2010) and individual performance (Gartenberg et al., 2019; Hackman & Oldham, 1980; Wrzesniewski, 2003). Research on meaningful work is growing (Amabile & Pratt, 2016; Bailey et al., 2017; Lysova et al., 2019; Steger et al., 2012). However, it is still unclear how, and under what circumstances meaningful work can be enabled by management (Bailey et al., 2017).

This study aims to address whether and how the use of management controls can influence the perception of meaningful work. First, we draw on insights from the management control literature on control design choices and its use (Bedford, 2020; Gerdin, 2020; Grabner & Moers, 2013; Kruis et al., 2016; Malmi & Brown, 2008) to examine the relationship between management controls and meaningful work as an outcome. We especially focus on control design choices such as enabling versus coercive uses, considerations of systems or packages, the involvement of informal controls to formal systems and the intensity of use of controls.

Second, we use bibliometric and structured literature review techniques to determine the conceptualization, antecedents, and limits of meaningful work. We examine 384 scientific publications in the business literature that focus on meaningful work using a bibliometric search with the Scopus database (Scopus, 2021). The studies are mostly situated in the general management, organizational behaviour as well as in the business ethics literature. Most studies have been published from 2010 onwards. We conduct a citation analysis and a key word co-occurrence analysis to examine the underlying steams. The citation analysis shows that the literature is highly fragmented and new theories are still emerging. The key word co-occurrence analysis (van Eck & Waltman, 2014; van Eck et al., 2010), indicates four distinct clusters that are connected to meaningful work. This finding is in line with a few prior meaningful work studies that have also proposed four main dimensions of meaningful work (Bailey et al., 2017; Lips-Wiersma & Wright, 2012; Rosso et al., 2010; Steger et al., 2012). A prominent and heavily cited conceptualization comes from Rosso et al. (2010) who propose individuation, contribution, self-connection, and unification as the four main antecedents of meaningful work.

Next to the bibliometric analysis, we gain further insights on antecedents and limits of meaningful work with a structured literature search of 90 articles. The literature often divides meaningful work in either a work-centric or worker-centric focus (Michaelson et al., 2014; Pratt & Ashforth, 2003; Wrzesniewski, 2003). The former can be facilitated by enriching tasks and roles, providing autonomy, offering feedback and facilitate learning (Hackman & Oldham, 1980). The later can be facilitated by enriching memberships, cultures and identities, visionary leadership practices or by contributing to a greater community (Carton, 2018; Grant, 2007, 2012; Tepper et al., 2018).

With these findings and the theoretical knowledge from the management control literature, we develop a conceptual model of a nonlinear, inverted u-shaped relationship between the use of controls and the perception of meaningful work. We propose that the use of enabling formal controls in a system, rather than used independently, can enhance the perception of meaningful work. Thus, management needs to design and implement control practices that address the different dimensions of meaningful work. We apply the levers of control (LOC) framework (Simons, 1994, 1995) as a helpful ordering approach of formal controls. We propose that beliefs and interactive levers may offer shared vison and community, and higher levels of autonomy, skill variety and task significance. Additionally, the diagnostic and boundary levers provide structure, set clear expectations, and give resources and feedback.

We also propose that this positive relationship can even be stretched by the interaction of formal and informal controls as an enabling control package. Recent management accounting studies started analysing the interactions of informal controls and formal systems (Evans & Tucker, 2015; Ferreira & Otley, 2009; Gerdin et al., 2019; Pfister & Lukka, 2019). Informal controls are less well-defined practices, routines, social relationships, cultures, links or loose connections between individuals (Chenhall et al., 2010). Especially the worker-centric dimensions of meaningful work can be facilitated by informal interactions (Carton, 2018; Grant, 2007, 2012; Tepper et al., 2018).

The intensity of use of controls is important, as well. We propose that after a certain degree of intensity, the positive relationship between the use of management controls and the perception of meaningful work will decrease. We rely on the so called too-much-of-a-good-thing (TMGT) effect that suggests that antecedent variables widely accepted as directing to desirable outcomes (e.g., enabling management control use) can lead to negative effects in practice (Pierce & Aguinis, 2013). The meaningful work literature notices that the perception of meaningful work can quickly shift into meaningless work when employees perceive a lack of self-control (Cartwright & Holmes, 2006; Lips-Wiersma & Wright, 2012), feel monitored (Stein et al., 2019) or pressured (Amabile & Pratt, 2016; Bunderson & Thompson, 2009).

Our study contributes to the literature in several ways. We contribute to the research stream that suggests that it matters how controls are perceived by employees to influence behavioural outcomes (Mahama & Cheng, 2013; Speklé et al., 2017; Tessier & Otley, 2012). Especially, we contribute to the stream that regards enabling control configurations (Ahrens & Chapman, 2004; Franco-Santos & Doherty, 2017; Wouters & Wilderom, 2008). Further, we contribute to the management accounting literature that examines the levers of control (LOC) framework from (Simons, 1995) (Kruis et al., 2016; Speklé et al., 2017; Widener, 2007). We also add knowledge to research that focusses on the configurations of formal and informal controls as a package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Gerdin et al., 2019; Malmi & Brown, 2008; Pfister & Lukka, 2019). Besides, we follow calls of recent management accounting literature to consider capturing non-linear models (Bedford, 2020; Burkert et al., 2014; Luft & Shields, 2003) and thereby, we contribute to a small but growing stream of accounting literature that focus on nonlinear relationships (Gordon & Smith, 1992; Heggen & Sridharan, 2021; Sturman, 2003; Voußem et al., 2016).

This paper proceeds as follows. In section II, we discuss the theoretical bases of design choices and use of management controls. Section III explains the methodology to review the meaningful work construct. In section IV, we present the findings of our reviews and outline organizational mechanisms that drive or trouble the perception of meaningful work. In section V, we develop a conceptual model of how management controls affect the perception of meaningful work and pose our propositions. In section VI, we discuss the findings along with implications, limitations, and suggestions for further research.

4. Theoretical Background of Management Control Designs and Use

One central aspect in the management control literature lies on control design attributes to enhance the quality of controls (Bedford, 2020; Gerdin, 2020; Grabner & Moers, 2013; Kruis et al., 2016; Malmi & Brown, 2008). From a contingency perspective (Otley, 1980; Otley, 1999), there is no universally applicable management control formulation. The theory argues that the choice of appropriate control techniques is determined by contextual factors and each organization needs to design own control configurations to avoid a loss of control and unintended consequences (Bedford et al., 2016; Chenhall, 2003; Franco-Santos & Otley, 2018; Gerdin, 2005).

Next to the design of certain management control practices, their introduction and daily use by management is of central importance (Ferreira & Otley, 2009; Merchant & Otley, 2020; Wouters & Wilderom, 2008). We therefore define design as the plan (“the What”) and use as the implementation (“the How”) of controls.

Diverse design choices have been discussed in the literature. A prominent discussion concerns the perspectives of control systems used as a package or as a system (Bedford, 2020; Grabner & Moers, 2013; Malmi & Brown, 2008). Design considerations are also control interactions between formal and informal controls (Chenhall, 2003; Evans & Tucker, 2015; Malmi & Brown, 2008), different control objectives (Adler & Borys, 1996; Gerdin et al., 2019; Tessier & Otley, 2012) as well as the intensity of use of controls (Speklé et al., 2017). Besides, the quality and efficiency of used controls is depended on how employees perceive the control practice (Speklé et al., 2017; Tessier & Otley, 2012).

Figure 2 provides a conceptual framework of four management control design choices that have been discussed in the management control research stream. This framework might not be complete to consider all discussions in the literature, but it aims to be used as a typology in this study.

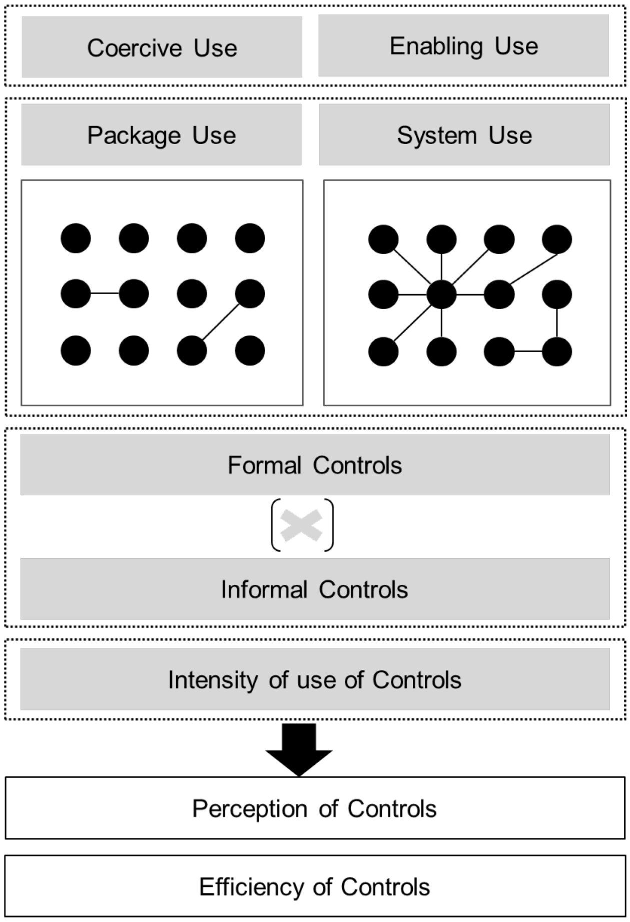

Figure 2 Management Control Design Choices

First, building on Adler and Borys (1996), many studies focus on the enabling rather than on the coercive use of controls (Ahrens & Chapman, 2004; Burney et al., 2017; Franco-Santos & Doherty, 2017; Heggen & Sridharan, 2021; Mahama & Cheng, 2013; Wouters & Wilderom, 2008). Coercive controls aim to force employees' compliance, while enabling controls aim employees to feel facilitated or motivated by the rules and the systems in place (Wouters & Wilderom, 2008).[2]

[2] There are many more control uses in the literature, which we do not aim to elaborate further in this study. For example controls can be strategically, operationally, technically, or socially used (Tessier & Otley, 2012). Social controls are e.g., values, beliefs, norms (Simons, 1995) and symbols (Malmi & Brown, 2008) and are aspects of

Second, two distinct perspectives of the control design evolved in the literature. The system approach claims that control practices form a control system, when these practices are interdependent and the design choice has taken the interdependencies, i.e., complements and substitutes into account given a certain control problem (Grabner & Moers, 2013). The package approach starts with an aggregate investigation of management control practices to identify which practices are likely to act as complements or substitutes and then couple these controls independently as a control package (Bedford et al., 2016; Malmi & Brown, 2008). The systems perspective adopts complementarity theory, whereas the package perspective builds upon configuration theory (Bedford, 2020). Therefore, the package perspective does not imply that the design and use of management controls is entirely uncoordinated. Rather, it means that the focus is on examining how all management control practices are combined to resolve one or more control problems, irrespective of whether they operate interdependently or independently (Bedford, 2020, p. 1). The control literature tends to prefer the system over the package view to explain how management controls are most effective (Simons & Dávila, 2000; Speklé et al., 2017; Widener, 2007). However, as Bedford (2020) indicates, not all control problems can be addressed by interdependent management control practices. Recently, Merchant and Otley (2020) tried to mitigate the debate. They argue that the overall control system in any specific organization is likely to involve some ingredients of the systems approach and some of the package approach.

Third, it is more relevant how well formal and informal mechanisms in management control design and use can be developed (Merchant & Otley, 2020). Formal control mechanisms include formal organizational practices e.g., comprehensive performance measurement and evaluation processes, incentive compensation systems, behavioural constraints, or detailed standard operating procedures (Merchant & Van der Stede, 2012). The LOC framework by (Simons, 1994, 1995) is a holistic system of formal management controls and a prominent approach that is frequently cited (Heinicke et al., 2016; Kruis et al., 2016; Mundy, 2010; Speklé et al., 2017; Tessier & Otley, 2012; Widener, 2007).

The framework consists of beliefs, boundary, diagnostic and interactive controls. Beliefs controls are "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization" (Simons, 1995, p. 34). Beliefs controls signal the core values to employees, in order to inspire and motivate them to take initiative in searching for opportunities, making decisions, and devising solutions to problems consistent with the organization's values (Mundy, 2010). Interactive controls are intended to help the organization to search for new ways to

organizational culture (Merchant & Van der Stede, 2012). Technical controls are based on rules, procedures and standards and govern day-to-day activities.

strategically position itself in a dynamic marketplace (Simons, 1995). They communicate the concerns of top managers throughout the organization (Adler & Chen, 2011). Employees become aware of where potential opportunities and threats may arise and are motivated to be proactive in searching for new opportunities and guarding against threats (Ferreira & Otley, 2009). In contrast, boundary, and diagnostic controls communicate expectations of behaviour, set limits on what is acceptable behaviour, and provide feedback (Simons, 1995). Boundary controls set restrictions or minimum requirements on employee behaviour to focus the attention and motivation to critical operations (Adler & Chen, 2011). Diagnostic controls communicate targets on critical performance measures that serve to guide behaviours and provides feedback to facilitate employee learning (Simons, 1995). These controls are intended to give employees structure which influences their feelings of competence (Speklé et al., 2017).

It is noted that the power of the LOC resides not in how they are used in isolation but rather in how they complement each other when used together (Simons & Dávila, 2000). Kruis et al. (2016) suggest that different types of balances among the levers of controls are required based on the strategic type of the firm. Prior empirical research provided evidence that firms which jointly use all four levers are associated to have desirable organizational outcomes such as learning (Widener, 2007), development of organizational capabilities (Mundy, 2010), and creativity (Speklé et al., 2017).

Despite the theoretical prominence of the LOC use, some studies noted limitations of the framework (Ferreira & Otley, 2009; Tessier & Otley, 2012) and begun to examine informal controls that incorporate with formal management control systems working together as a control package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Malmi & Brown, 2008; Otley, 1999). Informal controls are characterized by less well-defined practices, social relationships, links or loose connections between individuals that facilitate free-flowing open and flexible communication, structures and decision processes (Chenhall et al., 2010). Different formal and informal control configurations may be used simultaneously within an organization, in different combinations, at different times and to different extents (Bedford, 2020; Ferreira & Otley, 2009). Research for example noted how culture (Evans & Tucker, 2015; Heinicke et al., 2016; Henri, 2006) or personnel controls (Gerdin et al., 2019; Pfister & Lukka, 2019) positively interact with formal systems.

Finally, some studies started to analyse the intensity or tightness of the use of controls and its effects on individuals (Widener, 2007; Mahama and Cheng, 2013; Bedford et al., 2016; Kruis et al., 2016; Speklé et al., 2017). However, this line of research has produced contradicting results concerning the level of intensity. Where Widener (2007) proposes more of either control rather than less, Bedford et al. (2016) show that too many controls can produce conflicting signals. Mahama and Cheng (2013) find that the intensity of use of costing systems positively influence managers' psychological empowerment. Speklé et al. (2017) state that the intensity of the use of the LOC framework is positively related to both, empowerment, and creativity. These contradicting findings may derive from the exclusion of quadratic terms (non-linear analyses) in most empirical studies (Bedford, 2020). A growing body of management studies suggest that antecedent variables widely accepted as directing to desirable consequences (e.g., an enabling work environment) can lead to negative outcomes in practice which often represent counter intuitive findings. This is called the too-much-of-a-good-thing effect (Pierce & Aguinis, 2013). A few recent management control studies integrated such non-linear relationships into their research models (Heggen & Sridharan, 2021; Voußem et al., 2016). For example, Heggen and Sridharan (2021) indicate an inverted u-shaped association between an enabling control approach and environmental performance.

Although the design and use of controls is the responsibility of management, the effectiveness of these controls can only be determined by how employees perceive the controls (Merchant & Otley, 2020; Tessier & Otley, 2012). Speklé et al. (2017) suggest that employee outcomes depend on whether controls are viewed as restrictions and limits or whether they are seen as valuable information, making employees believe that they have choices in their actions.

The atop overview discusses diverse aspects of the control design and use from selected literature. It does not seek to be complete but rather intends to assist drawing the relationship between the design of management controls and the perception of meaningful work to develop the conceptual model later in this study.

5. Review Methods to Assess Meaningful Work Literature

We examine the most influential articles that have dealt with meaningful work in order to later on reveal interactions with management the use of controls. We apply bibliometric techniques such as citation and keyword co-occurrence analyses combined with a cluster analysis. We also conduct a structured literature review following the recommendation of van Eck and Waltman (2014) to use bibliometric techniques as a complement to other review methods.

5.1. Bibliometric Analyses

We collected our data from the Scopus database, which is one of the largest abstract and citation databases of peer-reviewed literature (Scopus, 2021). Since we were primarily interested in the field of management research, we limited the query to the subject area Business, Management, and Accounting. Furthermore, we focused on publications in English language and included only published articles, articles in press, conference papers, reviews, books, and book chapters. With these specifications, we entered the search term "meaningful work" in the fields of title, abstract, and keywords of documents published until 2021, inclusively. Our initial search resulted in 384 hits for each of which we downloaded the full bibliographic record. Within the 384 articles in total 10,261 citations were found.

Past studies have noticed that it is most valuable to assess the impact of publications that have been cited heavily over time, since they can be regarded as certified knowledge, even if there are thousands of studies in a field (Ramos-Rodríguez & Ruíz-Navarro, 2004). Therefore, we conducted a citation analysis to identify the 100 most-cited articles on the topic of meaningful work. Furthermore, we applied a keyword co-occurrence analysis that indicates relevant objects closely related to meaningful work. We used the text mining functionality of the bibliometric visualization tool VOSviewer (van Eck & Waltman, 2014; van Eck et al., 2010) that extracts textual data from titles and abstracts of publications. VOSviewer provides distance-based visualizations of bibliometric networks (van Eck & Waltman, 2014). It applies the association strength normalization to normalize for differences between nodes in the number of edges (van Eck & Waltman, 2009). The mapping and clustering techniques uses a variant of the SMACOF algorithm (van Eck et al., 2010; Waltman et al., 2010).

5.2. Structured Literature Review

A limitation of bibliometric techniques is a potential loss of information (van Eck & Waltman, 2014). Therefore, a structured literature review has been applied in this study as a second literature review technique. The literature review followed a six-step process (Franco-Santos et al., 2012). First, we read an ad hoc list of academic papers that focus on meaningful work aspects and management controls that might be relevant in association to meaningful work. That step of the literature review process is meant to identify the key sources of research, the type of evidence available and the main keywords required to find relevant studies. The list includes organizational behaviour and management control studies of Barrick et al. (2015), Bunderson and Thompson (2009), Gartenberg et al. (2019), Henderson and Van den Steen (2015), Hollensbe et al. (2014), Kempster et al. (2011), Lips-Wiersma and Wright (2012), Malmi and Brown (2008), Martela and Pessi (2018), Pratt and Ashforth (2003), Rich et al. (2010), Rosso et al. (2010), Simons (1994) and Thakor and Quinn (2013). After analysing the papers and their references, we found that the constructs meaningful work and purpose (which are often used synonymously) are mostly researched in the disciplines of organizational behaviour and strategic management. To capture control aspects related to meaningful work, we also considered management accounting literature. Following keywords were defined for the further literature review "beliefs systems", "corporate purpose", "meaningful work" and "value-based controls".[3]

We chose additional criteria to narrow the scope of the review. We reviewed the five key journals in organizational behaviour: Journal of Organizational Behavior, Organization Science, Research in Organizational Behavior, Group & Organization Management; Journal of Applied Psychology; the five key journals in strategy and general management: Academy of Management Journal; Academy of Management Review, Administrative Science Quarterly; Strategic Management Journal and Journal of Management Studies; and the five key journals in Accounting: Accounting, Organizations and Society; The Accounting Review; Management Accounting Research; Behavioral Research in Accounting; Journal of Management Accounting Research. Selected studies can also come from the references included in any of the above-mentioned journals to avoid missing relevant studies. However, to ensure the quality of the additional studies we only included studies at a minimum B ranking according to VHB rating.

The review involves studies published between 1994 and 2021. We chose 1994 because of the first call for scholars to consider purpose as the essential precursor to effective strategic management initiated by Bartlett and Ghoshal (1994). We conducted an electronic search to cover the academic literature in the chosen journals, using EBSCOhost, Web of Science, Scopus, JSTOR and WISO. We found 90 papers that met our review selection criteria. All academic sources are systematically reviewed to acquire knowledge for answering the illustrated research question (see Appendix A).

6. Findings

The bibliometric and the structured literature reviews indicate that research on meaningful work related to business and management research is growing in attention. The number of studies increased considerably during the last ten years. Figure 3 shows the distribution of publications over the last decades using the output of the bibliometric search from the Scopus database.

[3] Words with the same roots are also used such as "meaningfulness" and "purposeful".

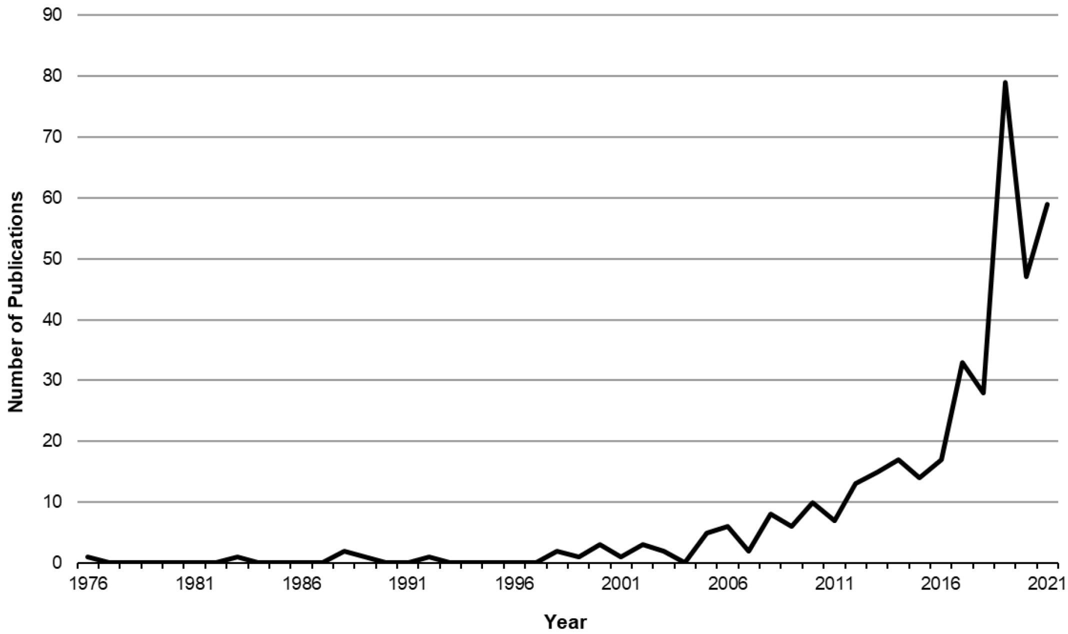

Figure 3 Number of Publications on "Meaningful Work" in the Management Literature from 1976 to 2021 (384 Articles from Scopus Database)

6.1. Citation Analysis of Meaningful Work Research

Table 2 portrays the list of the 100 most influential articles in the meaningful work literature resulting from the citation analysis of the output from the Scopus database. These 100 most cited articles account for 87 percent of the total number of citations. This high percentage of citation coverage suggests that the origins of the research on "meaningful work" are largely captured. The 100 most influential articles on meaningful work illustrate that the research is mostly embedded in research streams of Business Ethics, Human Resources, Management, Psychology and Organizational Behaviour, as these appear among the highest positions. Furthermore, 88 percent of the research articles have been published from 2010, including 15 studies out of the 20 most cited articles. This indicates a relatively recent interest in meaningful work in the academic field of business and organizational research and can be explained by the changing awareness of the role of employees in the organization (Ghoshal, 2005; Luthans, 2002; Quinn et al., 2003).

The most-cited article in this sample is from Rosso et al. (2010). The study focusses on the underlying mechanisms of meaningful work by reviewing the literature and developing a theoretical scheme of main pathways by which meaningful work is created and maintained: individuation (self-agency), contribution (other-agency), self-connection (self-communion), and unification (other-communion). The second-most-cited article adds knowledge to the growing literature by developing a meaningful work scale (Steger et al., 2012). Based on a survey with employees of an US American university, the authors find that meaningful work appears to be important to workers' well-being, job satisfaction, and contentment with their organization. The third-most-cited study by Amabile and Pratt (2016) develops a model on creativity and innovation in organizations (revision of their model from 1988). In this article the authors focus primarily on the individual level psychological processes like meaningful work that enhances individual creativity (Amabile & Pratt, 2016).

Having a closer look to the 20 most-cited articles, studies concerning the origins of meaningful work and the development of meaningful work scales are highly represented (Lips-Wiersma & Morris, 2009; Lips-Wiersma & Wright, 2012; Michaelson et al., 2014; Rosso et al., 2010; Steger et al., 2012). This demonstrates that definite explanations of the construct are not yet existing. Research is still in its formation and starts to grow and develop. Moreover, studies address challenges for organizations to provide and maintain the employees' perception of meaningful work (Cartwright & Holmes, 2006; Dempsey & Sanders, 2010). Meaningful work which is perceived by transformational leaders and workplace spirituality (Duchon & Plowman, 2005) or meaningful work perceived when individuals do volunteer work (Rodell, 2013) are included, as well.

Table 2 100 Most Influential Articles on Meaningful Work

No	Article	Cited by	No	Article	Cited by
1	Rosso et al. (2010)	853	51	Mitra and Buzzanell (2017)	53
2	Steger et al. (2012)	499	52	Albuquerque et al. (2014)	53
3	Amabile and Pratt (2016)	389	53	Lips-Wiersma et al. (2016)	52
4	Duchon and Plowman (2005)	387	54	Sharabi and Harpaz (2010)	49
5	Cartwright and Holmes (2006)	295	55	Kim et al. (2019)	48
6	Tims et al. (2016)	242	56	Munn (2013)	47
7	Dik et al. (2012)	193	57	Korek et al. (2010)	45
8	Phelps (2013)	179	58	Sparrow (2000)	45
9	Rodell (2013)	178	59	Kim and Beehr (2018)	44
10	Michaelson et al. (2014)	174	60	Scroggins (2008)	42
11	Chalofsky and Krishna (2009)	161	61	Guindon and Hanna (2002)	42
12	Chalofsky (2003)	159	62	Hudson (2002)	42
13	de Hauw and de Vos (2010)	158	63	Wesner and Miller (2008)	41
14	Fairlie (2011)	157	64	Daniel (2015)	40
15	Lips-Wiersma and Morris (2009)	157	65	Albrecht (2013)	38
16	Dempsey and Sanders (2010)	145	66	Dik and Shimizu (2019)	36
17	Lips-Wiersma and Wright (2012)	137	67	Pasmore et al. (2019)	36
18	Colbert et al. (2016)	130	68	Allan et al. (2016)	36
19	Steger et al. (2010)	127	69	Anser et al. (2021)	35
20	Gupta et al. (2014)	123	70	Bailey et al. (2019)	35
21	Bowie (1998)	120	71	Jiang and Johnson (2018)	35
22	Purvanova et al. (2006)	118	72	Dobernig and Stagl (2015)	35
23	Rafferty and Restubog (2011)	111	73	Buzzanell et al. (2015)	35
24	Yeoman (2014)	105	74	Ruhanen et al. (2013)	35
25	Tummers and Knies (2013)	102	75	Bowie (2017)	34
26	Raub and Blunschi (2014)	101	76	Hassan et al. (2016)	34
27	Tolbert and Moen (1998)	94	77	Weinberg and Locander (2014)	31
28	Soane et al. (2013)	92	78	Word (2012)	30
29	Allan et al. (2019)	87	79	Allan et al. (2018)	29
30	Lysova et al. (2019)	87	80	Pradhan and Jena (2017)	29
31	Petchsawang and Duchon (2009)	87	81	Holmes (2006)	29
32	Miller and Wheeler (1992)	83	82	Martin (2002)	27
33	Steger et al. (2013)	82	83	Allan et al. (2019)	26
34	Jung and Yoon (2016)	80	84	Chen et al. (2018)	26
35	Shockley et al. (2016)	80	85	Tummers and Bronkhorst (2014)	26
36	Bailey and Madden (2017)	78	86	Perko et al. (2014)	26
37	Beadle and Knight (2012)	78	87	Li et al. (2015)	25
38	Lepisto and Pratt (2017)	76	88	Chalofsky and Cavallaro (2013)	25
39	Nair and Vohra (2010)	75	89	Weeks and Schaffert (2019)	24
40	Demirtas et al. (2017)	73	90	Pradhan and Pradhan (2016)	24
41	Tepper et al. (2018)	71	91	May et al. (2014)	24
42	Bailey et al. (2017)	69	92	Oelberger (2019)	23
43	Kinjerski and Skrypnek (2006)	69	93	Florian et al. (2019)	23
44	Bailey et al. (2019)	67	94	Allan (2017)	23
45	Grady and McCarthy (2008)	62	95	Thory (2016)	22
46	Supanti and Butcher (2019)	58	96	McClure and Brown (2008)	21
47	Shuck and Rose (2013)	57	97	Newstead et al. (2018)	20
48	Berkelaar and Buzzanell (2015)	55	98	Asik-Dizdar and Esen (2016)	20
49	Allan et al. (2014)	55	99	Brieger et al. (2020)	19
50	Yeoman (2014)	54	100	Lips-Wiersma et al. (2020)	19

6.2. Key Word Co-Occurrence Analysis of Meaningful Work Research

Over the last decades, several management scholars have recognized the importance of meaningful work (Allan et al., 2019; De Boeck et al., 2019; Lips-Wiersma & Wright, 2012; Martela & Pessi, 2018; Rosso et al., 2010). However, some boundaries and definitions concerning the construct remain unclear, which is shown by the citation analysis in the last section. Therefore, we use the bibliographic record of the 384 hits from the Scopus database as inputs for a network analysis. We use the visualization of similarities (VOS) approach with VOSviewer Version 1.6.14 (van Eck & Waltman, 2014; van Eck et al., 2010). We apply a key word co-occurrence analysis using the full counting method and four co-occurrences as the minimum number. Out of 1,032 keywords 28 met the threshold. Figure 4 shows the bibliographic co-occurrences of the bibliographic record. The analysis indicates four clusters which are represented by different node colours. We briefly describe each cluster using the gained knowledge from the reviewed literature in Appendix B. The structure of the network reflects the current understanding of the main antecedents of meaningful work. It further represents the categorization of meaningful work in meaningfulness at work and in working from Pratt and Ashforth (2003), that will be illustrated hereafter and used as the conceptualization of meaningful work in this study.

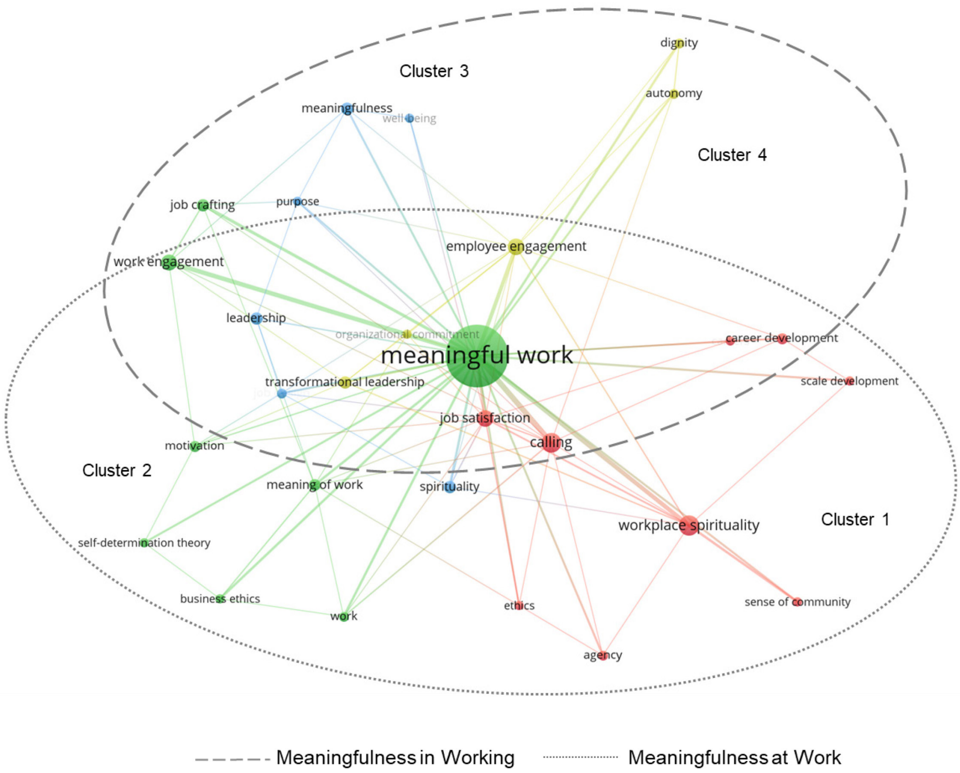

Figure 4 Network Visualization of Keyword Co-Occurrences of Meaningful Work

6.3. Antecedents and Categorization of Meaningful Work

The term meaningful work contains an implicit positive bias from the individual's perspective (Bailey et al., 2017). Pratt and Ashforth (2003) argue that any task, job, or organization can be imbued with meaningfulness and such words as “fit”, “match” and “alignment” are often used to explain how and why members see their work as meaningful. Previous research has conceptualized meaningful work in various ways. It is argued that meaningful work scales concerning its significance (Martela & Pessi, 2018) or within several dimensions that are in balance to each other (Bailey et al., 2017; Lips-Wiersma & Wright, 2012; Rosso et al., 2010; Steger et al., 2012). Thus, the literature often divides meaningful work in either a work-centric or worker-centric focus (Michaelson et al., 2014; Pratt & Ashforth, 2003; Wrzesniewski, 2003).

Many studies propose that meaningful work correlates with the constructs of “self”, in terms of work that is satisfying and fulfilling to the individual, and “other”, in terms of work that is of service to a wider cause or gives rise to a sense of belonging to a broader group (Bailey et al., 2017; Lips-Wiersma & Wright, 2012; Pratt & Ashforth, 2003; Robertson et al., 2020; Rosso et al., 2010). Rosso et al. (2010) propose four main antecedents of meaningful work – individuation, contribution, self-connection, and unification. Steger et al. (2012) capture greater good motivation, positive meaning and contribution to meaning-making and Bailey et al. (2017) clusters task, role, interactional and organizational factors. According to empirical findings of Lips-Wiersma and Wright (2012), meaningful work consists of the four dimensions developing the inner self, unity with others, service to others, and expressing full potential. This concept has recently been updated to seven dimensions with facing reality, inspiration and balancing tensions as three new dimensions to conceptualize meaningful work (Lips-Wiersma et al., 2020).

A rather broader and highly prominent conceptualization is the classification of meaningful work proposed by Pratt and Ashforth (2003). They divide the construct in meaningfulness in working and meaningfulness at work. The former focuses on enriching tasks, providing autonomy, offering feedback and facilitate learning, e. g. job design practices (Hackman & Oldham, 1980). The later focuses on enriching membership by building cultures and identities or visionary, charismatic or transformational leadership practices (Grant, 2012; Tepper et al., 2018). Research further proposes to allow a sense of balance between work and worker centric elements (Bailey et al., 2017; Cartwright & Holmes, 2006).

6.4. Limits of Meaningful Work

A growing number of recent studies focuses on limits of the perception of meaningful work (Amabile & Pratt, 2016; Bailey et al., 2017; Cartwright & Holmes, 2006; Iatridis et al., 2021). Hereby, the management of meaningfulness can have a "dark side" with manipulative or unethical behaviours of the employer that might cause employee cynicism (Cartwright & Holmes, 2006; Michaelson et al., 2014). The literature shows that it will lead to negative outcomes such as inauthenticity and meaninglessness when organizations seek to manage employees' experienced meaningfulness through processes of pressure (Fineman, 2006; Lips-Wiersma & Morris, 2009). Although organizational values provide an important source of meaningfulness (Rosso et al., 2010), the lack of authenticity or dishonesty can lead to negative responses such as anger or stress (Bailey et al., 2017; Cartwright & Holmes, 2006; Lips-Wiersma & Morris, 2009).

Besides, when people cannot regulate their action when working towards a higher goal, purpose, or ideal, they experience hopelessness or existential despair (Brieger et al., 2019; Florian et al., 2019; Lips-Wiersma & Wright, 2012). Bunderson and Thompson (2009) show that the notion of "calling" can be invoked as a form of normative social control to elevate the experienced meaningfulness of work. This encourages the exploitation of employees through low wages, long working hours and even harming their physical and mental health. The authors interviewed zookeepers and found that the benefits of a calling do not come without costs, as a sense of calling complicates the relationship between zookeepers and their work. On the one hand, it fosters a sense of occupational identification, meaning and importance. On the other hand, it comes with unbending duty, personal sacrifice, and heightened vigilance. Florian et al. (2019) explored the influence of shifting societal and organizational contexts on individuals' experience of meaningfulness when task become "too much" meaningful. The authors find that shifting contexts can lead to exploitation or feelings of imbalance and cause a loss of meaningfulness.

Moreover, the perception of meaningful work can be hindered when employees are not given enough autonomy in doing their work (Hackman & Oldham, 1980; Ryan & Deci, 2000). This is the case when management sets limits in how to meet project goals, restricts the idea flow or overreacts to problems (Amabile & Pratt, 2016). The negative experience of untapped potential can also lead to meaningless work (Amabile & Pratt, 2016; De Boeck et al., 2019). Untapped potential occurs when employees are not given the right or insufficient resources, by unclear or shifting goals, an overemphasis on the status quo or by ignoring problems (Amabile & Pratt, 2016).

7. Conceptual Model Development

In this section, we will link the use of management controls and the perception of meaningful work by deriving five propositions from the theory and literature analysis. The literature review indicates that meaningful work is socially constructed and meaning creation is seen as a type of sense making (Pratt & Ashforth, 2003). Hence, organizations have the power to influence whether and how members interpret their work as meaningful. According to Stein et al. (2019), it even becomes the responsibility of organizations to customize control systems to encourage a meaningful work experience. By capturing the insights on meaningful work antecedents and limits, we provide a conceptual model of the configuration and intensity of use of management controls to facilitate the perception of meaningful work (see Figure 5). We see especially the LOC framework as a helpful ordering approach for theory as well as practice to enable meaningfulness, as it systematically combines formal controls. We also emphasise the importance of informal controls that interact with formal systems to build a control package.

7.1. Influence of Enabling Controls on the Perception of Meaningful Work

Research of Amabile and Pratt (2016) discusses elements of a work environment that enhance meaningful work. They highlight clear goals, support for reasoned risk taking, sufficient resources, frequent and constructive feedback, collaboration and fair reward and recognition. When management controls align those practices, then they might enhance the perception of meaningful work. Prior literature regarding the use of controls as either enabling or coercive suggests that an enabling system is one that is flexible and allows employees to determine the best way to achieve or exceed multiple goals. In a coercive system, employees are given multiple goals, they are instructed how to achieve them and should not deviate from them (Ahrens & Chapman, 2004; Mundy, 2010; Wouters & Wilderom, 2008). Coercive control systems might produce strategic behaviours or gaming and lead to decreased well-being (Franco-Santos & Doherty, 2017; Van De Voorde et al., 2012), stress (Fogarty et al., 2000), mistrust, unfairness or inequalities (Franco-Santos & Otley, 2018). Employees in an enabling system feel more empowered and committed to their goals than employees in a coercive system. As a result, they derive more meaning from their jobs (Burney et al., 2017). Following this argumentation and reflecting the recent discussion about unintended consequences of coercive control systems we rise our first proposition:

Proposition 1: *The use of enabling controls will enhance the perception of meaningful work.*

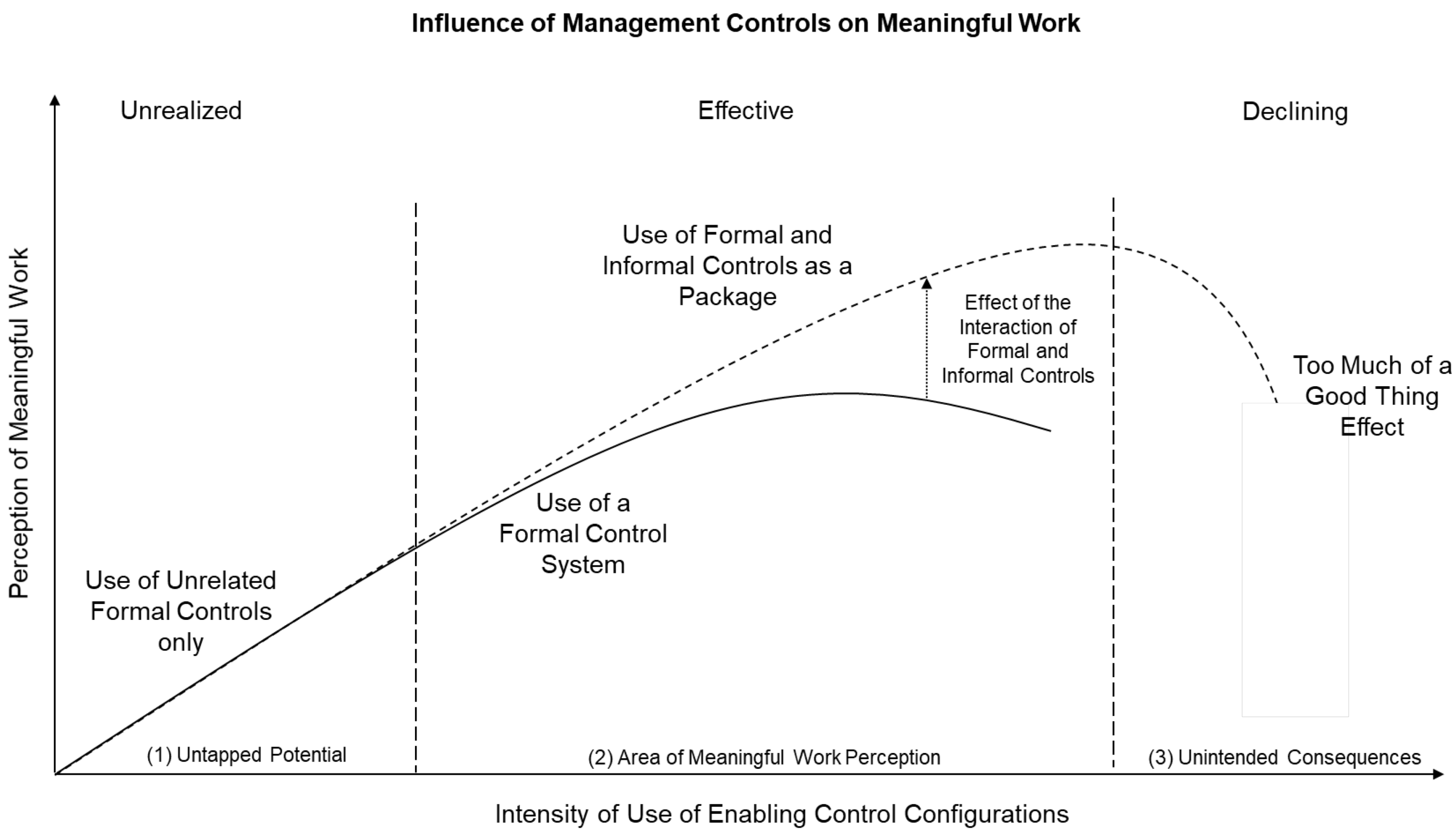

Figure 5 Conceptual Model of the Relationship Between Control Intensity and Meaningful Work

7.2. Influence of Formal Controls on the Perception of Meaningful Work

In terms of formal controls, this study draws on the LOC framework as it offers a broad typology for alternative uses of formal control systems by considering a range of controls and how they are used by management (Ferreira & Otley, 2009; Widener, 2007). Simons' beliefs controls are defined as enabling management controls (Mundy, 2010; Simons, 1995). They are intended to positively affect motivation and task coordination of individuals through the internalization of organizational values and purpose (Adler & Chen, 2011; Widener, 2007). However, there is substantive evidence that beliefs systems may not be effective unless strongly supported by alternative mechanisms like the other levers of control (Kruis et al., 2016; Speklé et al., 2017). The meaningful work literature argues that the perception of meaningful work is not fully realized unless management implements a variety of control practices that interact to enhance all aspects of meaningful work (Amabile & Pratt, 2016; Bailey et al., 2017; Cartwright & Holmes, 2006). It is noted that a limited knowledge about the contribution of one's work, not getting the appropriate resources and clear goals, a destructive work culture, an overemphasis on the status quo or the disregard of problems can hinder one's personal growth (Amabile & Pratt, 2016). This might lead to the negative experience of untapped potential which is related to meaninglessness of work (De Boeck et al., 2019). Even if the provision of freedom is intended by management, it can be perceived as too much flexibility and may result in inefficiencies, resource wastage, stress due to unclear priorities and ultimately a decline of motivation and performance (Heggen & Sridharan, 2021). Formally stated:

Proposition 2: *The use of unrelated formal control levers will not enhance the perception of meaningful work.*

Diverse mechanisms are needed to enable the perception of meaningful work (Amabile & Pratt, 2016). The complementary use of all levers of control as a management control system might positively affect the perception of meaningful work. The literature suggests that the power of the levers of control resides in how they complement each other when used together in a balance according to the organizational contingencies and the control targets (Kruis et al., 2016; Mundy, 2010; Simons & Dávila, 2000). As mentioned earlier, the meaningful work construct is usually categorized in either meaningfulness at work as work-centric meaningfulness and meaningfulness in working as worker-centric meaningfulness (Michaelson et al., 2014; Pratt & Ashforth, 2003; Wrzesniewski, 2003). The LOC framework might support meaningfulness at work and meaningfulness in working. On the one hand, the beliefs and interactive levers offer shared vison and community, and higher levels of autonomy, skill variety, task significance by allowing employees a freedom of choice in selecting their courses of action. On the other hand, the diagnostic and boundary levers provide structure by placing limits on inappropriate behaviours, setting clear expectations, and giving resources and feedback. Thus, we expect that the interdependent use of all four levers of control will enhance the employee's perception of meaningful work.

Proposition 3: *The use of the levers of control can enhance the perception of meaningful work.*

7.3. Influence of Informal Controls on the Perception of Meaningful Work

Simons' LOC framework offers a broad perspective how different controls work together (Kruis et al., 2016; Mundy, 2010; Widener, 2007). However, it has been criticized for not giving sufficient emphasis to informal controls (Ferreira & Otley, 2009). Therefore, it is unlikely that the LOC framework, as a formal control system, can explain all the mechanisms that are needed to fully enhance the perception of meaningful work. Informal controls are less well-defined practices, routines, social relationships, culture, links or loose connections between individuals that facilitate free-flowing open and flexible communication, structures and decision processes (Chenhall et al., 2010). Widener (2007) already mentioned that the combined use of the levers of control is more likely to be powerful when there is a consensus among members on the fundamental values and purpose of the organization. Other scholars see the use of formal and informal controls as a package as most effective (Ferreira & Otley, 2009; Gerdin et al., 2019; Malmi & Brown, 2008). As the systems view (although its dominance in the literature) has been criticized for its complexity and minor practicability (Merchant & Otley, 2020). In a package of controls, both control categories are used simultaneously, loosely coupled within an organization and are even able to stretch positive outcomes (Pfister & Lukka, 2019). A concrete example is mentioned by Evans and Tucker (2015) in case of beliefs controls. Beliefs controls are the formal controls like the vison, mission, or value statements to encourage a certain behaviour. However, they are not entirely effective, if these beliefs are not or insufficiently proclaimed by management in their daily interactions with employees. The meaningful work literature states as well, that meaningful work is strongly influenced by authentic and transformational leaders (Grant, 2012) as well as an empowering organizational culture (Ashforth et al., 2016; Bailey et al., 2017). Thus, we rise our next proposition:

Proposition 4: *The package use of the levers of control (formal controls) and informal enabling controls (such as organizational culture) can stretch the perception of meaningful work.*

7.4. Influence of the Intensity of the Used Controls on the Perception of Meaningful Work

The enhancing relationship between management controls and the perception of meaningful work may have a limit when controls are used too intensely (even if they are meant to be enabling), as indicated by the inverted u-shaped relationship in Figure 5. If individuals are overwhelmed by the volume and scale of the control environment, they are likely to perceive a lack of self-control over their situation (Lips-Wiersma & Wright, 2012), feel monitored (Stein et al., 2019) or pressured (Bunderson & Thompson, 2009). This leads to a TMGT effect (Pierce & Aguinis, 2013), that comes with a trade-off between the benefits and drawbacks of the control use and causes a shift from meaningful to meaningless work. For example, Tessier and Otley (2012) stated that beliefs controls can be perceived as enabling, but they can also be used by management as constraints (integrity, honesty, transparency, etc.). Thus, we deviate the following proposition:

Proposition 5: *The enabling interaction effect of formal and informal controls to enhance the perception of meaningful work decreases after a certain intensity of their use (TMGT-effect).*

8. Discussion and Conclusion

We view this research as a first attempt to investigate the relationship between the use of management controls and the perception of meaningful work. The perception of meaningful work is an important driver of employee motivation, engagement (Allan et al., 2019; Barrick et al., 2015) and individual performance (Hackman & Oldham, 1980; Humphrey et al., 2007; Wrzesniewski, 2003) which also influence organizational performance (Gartenberg et al., 2019). We illustrate in a conceptual model, that a package use of enabling formal and informal controls is most suitable to fully enhance the perception of meaningful work, which in turn can contribute to achieve organizational goals. On the contrary, meaningful work can shift to meaninglessness work when the management control use is not effective. Therefore, the design as well as the intensity of use of management controls is of particular importance.

Understanding how management controls are most effective is an important managerial as well as research issue as usually high investments are required to design them. First, our findings reveal that the meaningful work perception can be managed using sufficient interactions of enabling management controls. The perception of meaningful work will not be realized if controls are unrelated and specific practices are not executed by management. This happens, when employees are not getting the appropriate resources or clear goals, when a destructive work culture ignores problems or when management sets an overemphasis on the status quo (Amabile & Pratt, 2016; Boeck et al., 2019). This hinders one's personal growth and might lead to the negative experience of untapped potential by employees

Second, the interaction of formal and informal controls used in a control package may fully empower the perception of meaningful work and even stretch the effects of the mere use of a formal control system. The relevance of informal controls is increasingly highlighted in the management accounting literature (Evans & Tucker, 2015; Gerdin et al., 2019; Pfister & Lukka, 2019). The meaningful work literature also emphasizes the relevance of organizational culture and leadership aspects to enable meaningful work (Bailey et al., 2017). Practitioners should therefore reflect which informal control practices could be activated to support formal control systems to fully enhance the employee' perception of meaningful work.

Third, our findings reveal that meaningful work has limits and a too intense control use might impair the perception of meaningful work. That happens if individuals cannot regulate their responses to set controls (Lips-Wiersma & Wright, 2012, p. 661) i.e., feel monitored (Stein et al., 2019), have restricted autonomy (Ryan & Deci, 2000) or feel pressured (Amabile & Pratt, 2016; Bunderson & Thompson, 2009). We illustrate that the perception of meaningful work can decrease after a specific peak leading to a TMGT effect, even when management controls are intended to enable meaningful work. The control use needs to be flexibly adapted to prevent unintended consequences, if practitioners mention a decrease of work meaningfulness,

This study places special emphasis on how management controls enable the perception of meaningful work and offers important implications to the management control literature. First, we add knowledge to the growing stream of literature that suggests that it matters how controls are perceived by employees to influence behavioural outcomes (Mahama & Cheng, 2013; Speklé et al., 2017; Tessier & Otley, 2012). Especially, we contribute to the stream that regards enabling control configurations (Ahrens & Chapman, 2004; Franco-Santos & Doherty, 2017; Wouters & Wilderom, 2008).

Second, we contribute to the stream of management accounting literature that examines the LOC framework (Kruis et al., 2016; Speklé et al., 2017; Widener, 2007). We propose that the levers of control framework as a management control system is an enabling mechanism that enhances both, meaningfulness at work and meaningfulness in working. Our theoretical findings add to research on design attributes of the LOC framework, i.e. interaction effects (Ferreira & Otley, 2009) and the intensity of its use (Speklé et al., 2017).

Third, we contribute more broadly to the research that examines the configurations of formal and informal controls as a package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Gerdin et al., 2019; Malmi & Brown, 2008; Pfister & Lukka, 2019). Similar to the findings of

Pfister and Lukka (2019), we argue that the involvement of informal controls can stretch the effect of a merely formal control use. In case of meaningful work, we emphasize the influence of organizational culture and leadership practices to fully enhance meaningful work perceptions.

Fourth, we provide a conceptual model for a nonlinear, inverted u-shaped relationship between the intensity of use of controls and meaningful work perceived by employees. Many economic theories predict curvilinear functions for individual utility and for organizational costs and profits, and some psychology theories predict u-shaped curves, as well. However, these relations are rarely represented in the management accounting research. Empirical studies often induce linearization by limiting the range of evidence collected (e.g. choosing typical cases rather than extreme cases for qualitative studies) or by transforming quantitative data to meet the assumptions of linear statistical models (Luft & Shields, 2003). Thereby, these studies often do not meet theoretical predictions (Burkert et al., 2014; Pierce & Aguinis, 2013)

We follow calls of the recent management accounting literature to consider capturing non-linear models (Bedford, 2020; Burkert et al., 2014; Luft & Shields, 2003) and contribute to a small but growing stream of accounting literature that focus on nonlinear relationships (Gordon & Smith, 1992; Heggen & Sridharan, 2021; Sturman, 2003; Voußem et al., 2016). Thus, our model provides important insights for the design, interactions, and intensity of the use of management controls to enhance the perception of meaningful work which becomes more and more important in organizational practice. Our insights can also be extended to other behavioural outcomes.

This study is not free of limitations. First, to examine the meaningful work concept, we used bibliometric analyses and a structured literature review method. Bibliometric analyses rely on high levels of abstraction and require the judgement of the researcher in determining the technical parameters of the output. Moreover, bibliographic methods quantify citations without concerning the intention of the authors citation behaviour, as there is no distinction between confirmative or critical citations (van Eck & Waltman, 2014). The second limitation lies in the use of the Scopus database, which might not capture all work, relevant for the topic. Regarding the structured literature review, we might have missed some relevant work e.g., articles that have been published in a journal outside of our list of selected journals. Third, the discussion about management control design choices might also be not complete and we might have missed important research streams that influence the development of our conceptual model and the propositions. For example, in case of formal controls, we only rely on the LOC framework and omit other frameworks from the management accounting literature (Merchant & Van der Stede, 2012; Otley, 1999; Ouchi, 1979).

We also offer avenues for future research. The development of our conceptual model is based on the findings from the literature review. A future study could examine how management control design and use choices affect the perception of meaningful work empirically. Further research could also involve cultural differences that might influence the relationship between the use of management controls and the perception of meaningful work. Malmi et al. (2020) recently demonstrate that cultural values and preferences significantly influence the management control use. The authors find differences even in western cultural regions. Therefore, more caution is needed when making cross-cultural generalizations about the design and the intended effects of management controls. Concerning the current development to big data and quantification in the professional and private life (Mennicken & Espeland, 2019), it is important to further study these effects on the perception of meaningful work, as well. A recent study from Stein et al. (2019) makes a first attempt to investigate data driven approaches and their consequences on the meaningful work perception of employees. The authors find among others that if management has only a narrow understanding of datification and the design of appropriate accountability systems, then the perception of meaningful work is likely to be hindered (Stein et al., 2019). We did not capture the aspects of datification in this study. However, we see a huge demand for future studies in this filed to examine the monitoring, transparency, and governance aspects of the use of big data in relation to the perception of meaningful work.

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Appendix

Appendix A

Table A.1 illustrates the sample characteristics of the structured literature review. A summary (Tables A.2 - A.4) of the review illustrates the main attributes and of the 90 found studies including the authors' names, date, and the journal the study was published, the area of research, underlying theory or theories used, methods of data collection and country and industry where the research took place.

Table A.1
Sample Characteristics: Research Method and Journal Categorization

	Strategy and General Management Journals	Organizational Behaviour and Psychology Journals	Accounting Journals	**Total**
Literature Review	6	3	0	**9**
Archival	3	4	0	**7**
Conceptual	6	6	2	**14**
Analytical / Modelling	2	0	0	**2**
Survey	12	8	11	**31**
Experimental	1	1	1	**3**
Qualitative	9	3	8	**20**
Mixed Methods	1	1	2	**4**
Total	**40**	**26**	**24**	**90**

Table A.2: Summary of Selected Studies in Strategy and General Management Research

Author(s)	Year	Journal	Area of Research	Underlying Theories	Context / Scope	Method of Data Collection	Country of the Study	Industry of the Study
Allen, Blake et al.	2019	Journal of Management Studies	Meaningful work	Job characteristics theory	meaningful work outcomes	Meta analysis		
Ashforth, Blake. et al.	2016	Academy of Management Review	Personal identification in organizations	Organizational behaviour	The relationship between identification and organizational and personal outcomes	Conceptual		
Bailey, C. et al.	2017	Human Resource Management Review	Meaningful work and existential labour	Job characteristics theory, leadership	Job design to perceive meaningful work	Conceptual		
Barrick, Murry et al.	2013	Academy of Management Review	Purposeful work behaviour	Motivation theories	Personality, higher order goals and job characteristics	Conceptual		
Barrick, Murry et al.	2015	Academy of Management Journal	Collective organizational engagement	Job characteristics theory and leadership theories	Performance improvement trough organizational engagement	Survey	USA	Credit unions
Bode, Christiane.; Singh, Jasjit.	2018	Strategic Management Journal	Prosocial participation of employees	Self-determination theory	CSR involvement in management strategy	Interviews and survey	Italy	Consulting
Brammer, Stephen; Millington, Andrew	2008	Strategic Management Journal	Financial and corporate social performance	Stakeholder theory	Improvement of financial performance	Archival data	U.K.	Different industries
Brammer, Stephen et al.	2015	Group & Organization Management	Effects of CSR on employees	Cognition theories	Influence of corporate ability	Survey	Spain	Communication
Bunderson, Stuart J; Thompson, Jeffery A.	2009	Administrative Science Quarterly	Meaningful work, calling	Job characteristics theory and behavioural theories	The positive and negative effects of "calling"	Interviews	USA, Canada	Zoo
Carton, Andrew M.	2018	Administrative Science Quarterly	Sensemaking and meaningful work	Leadership and job characteristics theory	Transformational leadership of day-to-day job activities	Archival data	USA	Space industry
Carton, Andrew M. Lucas, Brian J.	2018	Academy of Management Journal	Leadership and vision communication	communication theories	Overcoming blurry vision bias	Experiment	UK	
Cartwright, Susan Holmes, Nicola	2006	Human Resource Management Review	Meaningful work and employee engagement	Job characteristics theory	Meaningful work framework	Conceptual		
Colbert, Amy. et al.	2016	Academy of Management Journal	Employee motivation	Positive work relationships theory	Work relationships	Survey	USA	Different industries
De Boeck, Giverny, et al.	2019	Journal of Management Studies	Untapped potential	Job characteristics theory	Opportunities to realize future work selves	Survey	Belgium	Different industries

Dutton, Jane. et al.	2010	Academy of Management Review	Positive work-related identities	identity theory	Organizational influence in positive identity construction	Literature review		
Fineman, Stephen	2006	Academy of Management Review	Positiveness at work	Organizational behaviour	Research of positiveness at work and in HR practices	Literature review		
Florian, Mona et al.	2019	Journal of Management Studies	Meaningful work	Sensemaking theory	Context factors of meaningfulness of work	Case Study	Germany	Volunteer work
Franco-Santos, Monica; Doherty, Noeleen	2017	International Journal of Human Resource Management	Performance management systems	Agency theory and stewardship theory	Wellbeing trough enabling controls	Survey	UK	Universities
Franco-Santos, Monica Otley, David	2018	International Journal of Management Reviews	Performance management systems	Agency theory and stewardship theory	Identifying unintended consequences of PMS	Literature review		
Grant, Adam	2007	Academy of Management Review	Job design and employee motivation	Job characteristics theory	Positive contribution effects	Literature review		
Grant, Adam	2012	Academy of Management Journal	Transformational leadership	Leadership theories	Motivation to performance by beneficiary contract	Survey	USA	Government
Henderson, Rebecca Van den Steen, Eric	2015	American Economic Review	Corporate purpose	Principal agent theory	Improvement of corporate reputation	Analytical modelling		
Hollensbe, Elaine et al.	2014	Academy of Management Journal	Corporate purpose	Behaviour theories	Research directions to study purpose	Conceptual		
Kempster, Steve. et al.	2011	Leadership	Transformational leadership	Sensemaking theory	The role of purpose in leadership	Case study	USA	Health services
Lin, W., Koopmann, J., & Wang, M.	2020	Journal of Management	Extra role behaviour at work	Organizational citizenship behaviour	Psychological conditions and effects of helping behaviour over time	Survey	China	IT company
Lips-Wiersma, M.; Wright, S	2012	Group & Organization Management	Meaningful work scale development	Motivation theory	Fostering meaningful work in organizations	Multiple case studies	New Zealand	Different industries
Martikainen, S.-J., Kudrna, L., & Dolan, P.	2021	Group & Organization Management	Narrative investigation of affective eudaimonia	Narrative theory	Narratives of meaningful and meaningless work moments	Interviews	UK	Different industries
Müller M. et al.	2019	European Management Journal	Meaningful work	Sensemaking theory	Perception of meaningful work without direct contact to beneficiaries	Case study	European country	Hospital laboratory
Nilsson, Warren	2015	Academy of Management Review	Positive institutional work	Institutional theory	Relationship between institutional work and social purpose	Literature review		
Rich, Bruce L. et al.	2010	Academy of Management Journal	Job engagement and performance	Motivation theories	Antecedents and effects of job engagement	Survey	USA	Public authorities

Robertson, K. M. et al.	2020	Academy of Management Review	Meaningful work perception through social relationships	Social networks theory	Model development of three network types (entrepreneurial, clique, and community-of-practice)	Conceptual		
Rodell, Jessica B.	2013	Academy of Management Journal	Meaningful work	Agency theory	Effects of volunteering	Multiple case studies	USA	Volunteer
Schaubroeck, John et al.	2012	Academy of Management Journal	Ethical leadership	Organizational culture	Ethical behaviour as a part of corporate culture	Survey	USA	U.S. Army
Simons, Robert	1994	Strategic Management Journal	Levers of Control Framework	Contingency theory	Strategic change and organizational renewal	Case Study	USA	Different industries
Spreitzer, Gretchen M.	1996	Academy of Management Journal	Psychological empowerment	Institutional theory	Span of control and psychological empowerment	Survey	Various countries	Different industries
Stein, Mari-Klara et al.	2019	Journal of Management Studies	Meaningful work and datification	Sensemaking theory	Consequences of data-driven management approaches	Multiple case studies	USA	Universities
Thakor, Anjan V.; Quinn, Robert E.	2013	ECGI Working Paper Series in Finance; Finance	Principal agency utility maximization	Principal agent theory	Economic consequences of traditional business goals and a higher purpose	Analytical modelling		
Treppner, Bennet. et al.	2018	Academy of Management Journal	Transformational leadership	Person–environment-fit	Leadership effects	Survey	USA	Different industries
Van De Voorde, Karina et al.	2012	International Journal of Management Reviews	Performance management and wellbeing	Social exchange theory	Organizational performance relationship	Literature review		
Vogel, Ryan et al.	2016	Academy of Management Journal	Value congruence and employee engagement	Job characteristics theory	Job crafting activities	Survey	USA	Different industries

Table A.3: Summary of Selected Studies in Organizational Behaviour and Psychology Research

Author(s)	Year	Journal	Area of Research	Underlying Theories	Context / Scope	Method of Data Collection	Country of the Study	Industry of the Study
Amabile, Teresa M. Pratt, Michael G.	2016	Research in Organizational Behavior	Creativity	Sensemaking theory	Conceptual model of creativity in organizations	Conceptual		
Bauman, Christopher W. & Skitka, Linda J.	2012	Research in Organizational Behavior	CSR and job satisfaction	Need and behaviour theories	Miro level influences of CSR	Conceptual		
Brieger, S., et al.	2019	Journal of Business Ethics	CSR and employee work addiction	Social identity theory, social exchange theory	Influence of CSR, org. identification, and meaningfulness on work addiction	Survey (archival)	Switzerland	Different industries
Brieger, S. A. et al.	2021	Journal of Business Ethics	Wellbeing of entrepreneurs	Social value creation	Creation of social value positively effects work meaningfulness, wellbeing	Survey (archival)	Germany, Switzerland	Different industries
Deeg, M. D., & May, D. R.	2021	Journal of Business Ethics	Effects of ethical (moral) work behaviour	Self-determination theory, affective events theory	Positive benefits for individuals who incorporate professional moral courage	Survey	USA	Non-profit sector
Foulk, Trevor A. et al.	2019	Journal of Applied Psychology	Purposeful work behaviour	Self-determination theory	Employee motivation	Survey	India	Different industries
Gartenberg, Claudine et al.	2019	Organization Science	Corporate purpose	Principal agent theory, motivation theory	Financial performance improvement by enhancing purpose and clarity	Archival survey data	USA	Different industries
Grant, Adam	2008	Journal of Applied Psychology	Task significance	Expectancy theory, motivation theory	Task significance and performance relationship	Field experiments	USA	Fundraising Lifeguards
Gregori, P., et al.	2021	Journal of Business Research	Environmental entrepreneurship	Institutional logics, social identity theory	Emotions in identity work, and meaningfulness in entrepreneurship	Qualitative	Austria	Different industries
Humphrey, Stephen et al.	2007	Journal of Applied Psychology	Motivational work design features	Job characteristics theory	Work design and job satisfaction	Meta analysis		
Iatridis, K., et al.	2021	Organization Studies	Meaningful work in emerging professions	Social identity theory	Formation of three distinct professional identities by meaningful work	Qualitative	Greece	CSR consulting
Kristof, Amy L.	1996	Personnel Psychology	Person-organization fit	Principal agent theory	Outcomes of P-O-fit	Literature review		
Lips-Wiersma, M. et al.	2020	Journal of Business Ethics	Antecedents of meaningful work	Organizational behaviour	Effects of fairness, leadership, and worthy work on meaningful work	Survey	International	Different industries

Lips-Wiersma, Marjolein; Morris, Lani	2009	Journal of Business Ethics	Management of meaningful work	Need and behaviour theories	Meaningful work categorization	Mixed methods - action research	USA and Netherlands	Different industries
Martela, Frank Pessi, Anne B.	2018	Frontiers in Psychology	Dimensions of meaningful work	Self-determination theory, job characteristics theory	Understanding of meaningful work	Literature review		
May, Douglas R. et al.	2004	Journal of Occupational and Organizational Psychology	Employee engagement	Self-determination theory, job characteristics theory	Antecedents of employee engagement	Survey	USA	Insurance company
Michaelson, Christopher	2021	Journal of Business Ethics	Meaningful work	Normative perspective	Approach of defining meaningful work	Conceptual		
Michaelson, Christopher et al.	2014	Journal of Business Ethics	Meaningful work	Pro-social behaviour	Connection of business ethics with organization studies	Literature review		
Nielsen, J., et al.	2020	Journal of Organizational Behavior	Work-family interface	Identity theory	Role of calling for job and life satisfaction	Survey	USA, Canada	Different industries
Oerlemans, Wido G. M.; Bakker, Arnold B.	2018	Journal of Applied Psychology	Motivating job characteristics, happiness at work	Job characteristic theory	Employees' reaction to perceived motivating job characteristics	Survey	The Netherlands	Different industries
Opoku-Dakwa, Akwasi et al.	2018	Journal of Organizational Behavior	CSR and employee engagement	Social cognitive theory	Employees as potential agents of social change, enabled by CSR	Conceptual		
Paterson, Ted et al.	2014	Journal of Organizational Behavior	Work positivity and individual enabling	Self-determination theory, social cognitive theory	Thriving at work as the joint experience of learning and vitality	Survey	USA	Different industries
Pratt, Michael Ashforth, Blake	2003	Positive Organizational Scholarship: Foundations of a new Discipline	Work as a source of meaning	Positive organizational behaviour	Conceptual understanding of meaningful work	Conceptual		
Rosso, B. D. et al.	2010	Research in Organizational Behavior	Meaningful work pathways	Self-determination theory, job characteristics theory	Underlying mechanisms of meaningful work	Conceptual		
Sonenshein, Scott et al.	2013	Organization Science	Organizational striving	Sensemaking theory	Progressive self-change in organizations	Multiple case studies		
Wong, S. I. et al.	2020	Journal of Occupational and Organizational Psychology	Digital labour	Career construction theory	Conditions to perceive meaningful work for microwork employees	Survey	International	Platform organizations (MTurk, Clickworker)

Table A.4: Summary of Selected Studies in Accounting Research

Author(s)	Year	Journal	Area of Research	Underlying Theories	Context / Scope	Method of Data Collection	Country of the Study	Industry of the Study
Adler, Paul S. Chen, Xiaoling	2011	Accounting, Organizations and Society	Creativity and control	Perceived locus of causality	Conflict between creativity and control	Conceptual		
Bedford, David S.	2015	Management Accounting Research	Use of management control configurations	Configuration theory	Simultaneous balance between exploration and exploitation	Survey	Australia	Different industries
Bedford, David S. et al.	2016	Accounting, Organizations and Society	Management control effectiveness and strategy	Complementarity theory	Effectiveness of MC in different strategic contexts	Survey	Australia	Different industries
Chenhall, Robert; Langfield-Smith, Kim.	2003	Journal of Management Accounting Research	Role of reward systems and trust in strategic change	Contingency theory	Effectiveness of MCS and change management	Case study	USA	Manufacturing
Davila, Antonio. et al.	2017	Journal of Management Accounting Research	MCS in creative organizations	Sensemaking theory	MCS and creativity	Multiple case studies	Europe	Fashion
Drake, Andrea, R. et al.	2007	Behavioral Research in Accounting	Empowerment and motivation of non-management employees	Behavioural accounting	Antecedents of motivation and financial performance	Experiment	USA, Canada, Asia, Europe	
Evans, M., & Tucker, B. P.	2015	Qualitative Research in Accounting & Management	Management controls and environmental change	Complementarity theory	Organizational change	Case study	Australia	Energy
Ferreira, Aldónio. and Otley, David, T.	2009	Management Accounting Research	Development of a holistic performance management system	Contingency theory	Simplification of performance management and management control systems	Multiple case studies	Portugal	
Fogarty, Timothy, J. et al.	2000	Behavioral Research in Accounting	Antecedents and consequences of burnout in accounting	Role stress model	Functional and dysfunctional aspects of role stressors	Survey	USA	Accounting
Grabner, Isabella	2014	The Accounting Review	Incentive systems in a creativity dependent company	Complementarity theory	Conflict between creativity and control	Survey	Germany, Austria, Switzerland	Different industries
Groen, Bianca, A. C. et al.	2012	Management Accounting Research	Employee performance	Theory of planned behaviour	Co-development of performance measurements	Multi method	Netherlands	Beverage
Hall, Matthew	2008	Accounting, Organizations and Society	Behavioural consequences of PMS	Behaviour theories	Improvement of individual performance	Survey	Australia	Different industries

Henri, Jean-François	2006	Accounting, Organizations and Society	Organizational culture	Contingency theory	Influence of organizational culture on the design and use of control systems	Survey	Canada	Different industries
Kruis, Anne-Marie et al.	2016	Management Accounting Research	Balance of levers of control framework	Configuration theory	Configuration of controls in relation of the strategic objective	Survey	Netherlands	Different industries
Mahama, Habib Cheng, Mandy M.	2013	Behavioral Research in Accounting	Managers' enabling perceptions in relation to cost systems	Behavioural theories	Costing systems and empowerment	Survey	Australia	Different industries
Malmi, Teemu Brown, David A.	2008	Management Accounting Research	Management control systems as a package	Configuration theory	Control design	Conceptual		
Morales, Jeremy	2019	Management Accounting Research	Search for meaningful work through symbolic categories	Behavioural theories	Symbolic categorization	Multiple case studies	UK	Different industries
Mundy, Julia	2010	Accounting, Organizations and Society	Enabling use of MCS	Complementarity theory	Balanced use of Levers of Control Framework	Multiple case studies	UK	Financial
Pfister, Jan; Lukka, Kari	2019	The Accounting Review	Management controls and motivation	Self-determination theory	Relevance of personnel and culture controls	Case Study	Finland	IT
Speklè, Roland, F. et al.	2017	Behavioral Research in Accounting	Creativity and control	Self-determination theory	Control system use to drive empowerment and creativity	Survey	The Netherlands	Different industries
Tillmann, Katja Goddard, Andrew	2008	Management Accounting Research	Management control use for organizational sense-making	Sense-making theory	Perception and use of strategic management accounting	Grounded theory development	Germany	chemicals
Tuomela, Tero-Seppo	2005	Management Accounting Research	Interplay of Levers of Control Framework	Complementarity theory	Levers of Control Framework use for business strategy	Multiple case studies	Finland	Different industries
Voußem, Ludwig et al.	2016	Management Accounting Research	Fairness perception of annual bonus payments	Equity theory	Behavioural management accounting	Survey	Germany, Austria, Switzerland	Different industries
Widener, Sally	2007	Accounting, Organizations and Society	Associations of control use to attention and learning	Contingency theory, complementarity theory	Antecedents of control use and costs and benefits	Survey	USA	Different industries

Appendix B

Cluster 1: Meaningfulness can arise from the roles in that people perform (Deeg & May, 2021; Dutton et al., 2010; May et al., 2004; Spreitzer, 1996). Roles go beyond individual job tasks, and include sets of norms and expectations concerning the behaviour and identity of the employee, relating to “who I am” rather than “what I do” (Bailey et al., 2017) or “why am I here?” (Lips-Wiersma & Wright, 2012). Morales (2019) finds, that management accountants build symbolic categories to create a bridge between what they do and who they are, to secure a feeling of meaningfulness. Practices that best typify meaningful work are those that nurture callings. When one’s work is a calling, it is seen as the sum of “socially” valuable activities that are pleasurable (Pratt & Ashforth, 2003). A qualitative study of zookeepers noted that those with a sense of calling were more willing to sacrifice money, time, and physical comfort or well-being for their work (Bunderson & Thompson, 2009).

Pratt and Ashforth (2003) draw on social identity theory to show how individuals' membership in valued groups can enhance the perception of meaningful work through raised levels of self-esteem. They suggest that the creation of family-like dynamics at work such as through fostering care and connection between people can promote solidarity and cohesion. Chatman et al. (1991) point out that when employees have consistent values with the organization, the culture of the organization could contribute to the employees’ working morale, their promises to the company, and their efficiency or performance. Brickson (2007) suggests that employees’ perceived congruence between their identities and the identity orientation of their organization (i.e., individualistic, relational, or collectivistic) plays a role in the meaning of their work. Colbert et al. (2016) indicates that positive workplace relationships increase perceptions of meaningfulness. Duchon and Plowman (2005) argue that a meaningful work climate is a set of perceptions that workers have about the local work unit, how it is managed, and how workers relate to each other. This climate enhances workplace spirituality and improves work unit performance. Many authors agree that meaningful work is highly associated with strong value-driven organizational cultures and spirituality where personal identification or individual-organization value congruence is identified as a principal source of meaningfulness (Ashforth et al., 2016; Bailey et al., 2017; Brickson, 2005, 2007; Chatman et al., 1991; Kristof, 1996; Robertson et al., 2020).

Cluster 2: Interactions with beneficiaries are motivating because they highlight the prosocial impact that work can have on others (Brieger et al., 2021; Grant, 2007, 2008; Lin et al., 2020; Rodell, 2013; Rosso et al., 2010). Grant (2008)’s theory of prosocial motivation further proposes that meaningful work tasks are those that provide service to society or the community and contribute to the sense of a greater good or higher purpose. Furthermore, Colbert et al. (2016) find empirically that giving to others is positively related to perceptions of meaningful work. Lately, the meaningful work perception of entrepreneurs, who may face various challenges in establishing their business, has been discussed in some studies (Brieger et al., 2021; Gregori et al., 2021). Entrepreneurs who perceive that their work has a positive direct effect on beneficiaries and creates social value, rate higher on work meaningfulness and engagement (Brieger et al., 2021). Entrepreneurial engagement in environmental businesses further relates to positive work identities and the perception of meaningful work (Gregori et al., 2021). However, research also argues that altruistic motivation is not the only driver for social contribution. Employees also expect that altruism would lead to private benefits such as developing skills to enhance career prospects (Bode & Singh, 2018) and according to Grant (2008), social contribution is more likely to improve job performance for employees with strong prosocial values than for employees with weak prosocial values.

Cluster 3: The perception of meaningful work is positively influenced when the individual perceives higher levels of autonomy, skill variety, task significance and task identity (Hackman & Oldham, 1980; Oerlemans & Bakker, 2018), which, in turn, contributes positively to motivation, performance, and satisfaction (Rosso et al., 2010). When employees experience their work as meaningful (i.e., significant, challenging, and complete), the potential for that work to be internally motivating is greatly improved because employees feel that their work matters (Hackman & Oldham, 1976, 1980). Especially, employees who experience making a difference or impact (Grant, 2007, 2008; Pratt & Ashforth, 2003) are associated with higher levels of work motivation (Foulk et al., 2019; Hackman & Oldham, 1980; Humphrey et al., 2007), i. e. autonomous motivation (Ryan & Deci, 2000), engagement and productivity (Grant, 2008; Kahn, 1990).

Cluster 4: Researchers have explored that certain leadership styles can influence the degree to which work is perceived as meaningful (Gartenberg et al., 2019; Kempster et al., 2011; Rosso et al., 2010; Schaubroeck et al., 2012) and particularly emphasize meaningful work related to transformational leadership practices (Carton & Lucas, 2018; Tepper et al., 2018). Moreover, different studies show that if employees experience meaningful work their engagement increases (Allan et al., 2019; Barrick et al., 2015; Humphrey et al., 2007; Kahn, 1990; May et al., 2004). In a current meta-analysis of meaningful work, Allan et al. (2019) find among others, that meaningful work highly correlates with work engagement, commitment, and job satisfaction and has moderate to large correlations with life satisfaction, life meaning and general health.

Individuals are further not passive respondents, they help create meaning that express and confirm their desired sense of self (Pratt & Ashforth, 2003). Extra-role behaviour (Lin et al., 2020) job crafting (Sonenshein et al., 2013; Vogel et al., 2016) or sensemaking (Müller et al., 2019; Tillmann & Goddard, 2008) are methods to enhance the perception of meaningful work by changing the parameters of one’s job to suit personal needs, preferences, and abilities that can lead to more meaningfulness. As a result, psychological empowerment (Drake et al., 2007; Hall, 2008), thriving (Paterson et al., 2014), employee well-being (Franco-Santos & Doherty, 2017; Van De Voorde et al., 2012) and individual performance (Hackman & Oldham, 1980; Humphrey et al., 2007; Wrzesniewski, 2003) are positively affected.

Article 2

Management Control Packages and the Perception of Meaningful Work in the Management Accounting Function

Janine Burghardt

Klaus Möller

10. Abstract

This study examines whether the use of management controls can be a sensegiving mechanism to facilitate the perception of meaningful work in management accountants' work contexts. Meaningful work is a critical individual well-being factor and serves as an organizational performance indicator. Driven by digitalization, management accountants experience a role change which leads to individual uncertainty. Therefore, management accountants engage in sensemaking activities to perceive meaningful work. Organizations may use a package of formal and informal management controls to give sense and to facilitate the perception of meaningful work. To explore the use of management controls, we apply configuration theory and conduct fuzzy set qualitative comparative analysis (fsQCA) within a cross-sectional survey sample of 277 management accountants. We find that particularly configurations of beliefs and interactive controls together with an organizations' high commitment in environmental corporate social responsibility (CSR) activities facilitate management accountants' meaningful work perceptions. We contribute to research on formal and informal control configurations as a package and to research on meaningful work in changing work contexts by exploring the management accounting function.

Keywords: meaningful work, formal and informal controls as a package, configuration theory, fuzzy set qualitative comparative analysis, management accounting

JEL Classifications: C83, D21, M12, M14, M40

11. Introduction

Management accountants as an organizational service function are significantly integrated into the operations of their employing organization, and they are largely responsible for organizational performance management. Thus, a better understanding which conditions make management accountants more enthusiastic, more motivated, and more proactive at work is highly important for any organization. The management accounting practice as well as the literature is extensively dealing with the role change of the management accountant function (Byrne & Pierce, 2007, 2018; Goretzki & Messner, 2019; Goretzki et al., 2013; Järvenpää, 2007; Morales, 2019). This role change often leaves management accountants with feelings of uncertainty (Byrne & Pierce, 2007; Morales & Lambert, 2013; Puyou, 2018; Wolf et al., 2020) and they engage in sensemaking activities to make their work more relevant and meaningful (Heinzelmann, 2018; Morales & Lambert, 2013; Taylor & Scapens, 2016). This study aims to understand how organizations can facilitate an environment for management accountants that enables their perception of meaningful work by using different configurations of management controls.

Meaningful work is the subjective desirable experience of work as purposeful and significant (e.g. Lips-Wiersma et al., 2016; Pratt & Ashforth, 2003; Rosso et al., 2010). For some, work may provide little meaning beyond the income that it generates, but the accumulating research demonstrates that many people want their work to matter in a deeper, more existential sense (Allan et al., 2019; Lips-Wiersma et al., 2016; May et al., 2004). On organizational level, the individual perception of meaningful work is associated with higher organizational work engagement (Allan et al., 2019; Barrick et al., 2015; May et al., 2004; Rich et al., 2010) and performance (Gartenberg et al., 2019; Hackman & Oldham, 1980; Wrzesniewski, 2003). Research on meaningful work suggests organization-level sensegiving practices such as clear goals, sufficient resources, transformational leadership, frequent and constructive feedback, a collaborative culture, and an organizational vision to facilitate meaningful work (Amabile & Pratt, 2016; Cartwright & Holmes, 2006; Pratt & Ashforth, 2003).

By now little is known about the influences of management controls in relation to the perception of meaningful work. A growing control literature suggests that it matters how controls are perceived, and that employees' outcomes depend on whether management controls are providing valuable information and giving employees freedom for own choices of their actions or whether they are seen as communicating restrictions and limits (Ahrens & Chapman, 2004; Burney et al., 2017; Franco-Santos & Doherty, 2017; Speklé et al., 2017). Research also begun to highlight the positive effects of the interaction between informal controls and formal management controls working together as a control package (Evans & Tucker, 2015; Ferreira

& Otley, 2009; Malmi & Brown, 2008; Otley, 1999). In organizational practice, different formal and informal control configurations may be used simultaneously within an organization, in different combinations, at different times and to different extents (Ferreira & Otley, 2009). Therefore, there is evidence that any set of control practices within an organization is more likely to have the form of a package rather than a totally coherent system (Merchant & Otley, 2020). It has been further argued by Malmi and Brown (2008, p. 288) that gaining a broader understanding of management control systems as a package may facilitate the development of better theory of how to design a range of controls to support organizational objectives, control activities, and drive organizational performance.

Therefore, we apply configuration theory and empirically test which combinations of formal and informal controls as a package facilitate the perception of meaningful work for management accountants. To collect the data, we rely on a cross sectional survey of management accountants from Germany, the German speaking part of Switzerland, Liechtenstein, and Austria. The survey method is especially useful for obtaining data on respondents' perceptions, attitudes, and beliefs that drive their behaviours (Speklé & Widener, 2018). We use fsQCA for the analyses and aim to overcome the shortcoming of multivariate approaches when analysing multiple interactions (Fiss, 2011; Ragin, 2000, 2008). Configurational approaches like qualitative comparative analysis (QCA) are becoming increasingly popular in different research areas to offer new insights of causally complex issues (e.g. Bedford et al., 2016; Frambach et al., 2016; Greckhamer, 2011; Pappas & Woodside, 2021). In configurational analyses the focus shifts from the analysis of net effect of a single characteristic on outcomes to the analysis of multiple configurations associated with an outcome (Frambach et al., 2016). This gives us the possibility to overcome the problems in investigating complex control packages by using survey data (Malmi & Brown, 2008).

The results of the fsQCA analyses show that the package use of formal and informal controls is a suitable sensegiving mechanism for management accountants to perceive meaningful work (Maitlis & Christianson, 2014; Rouleau, 2005). Especially, combinations of beliefs and interactive controls together with a perceived environmental CSR commitment of the employing firm are core conditions for the outcome meaningful work. If companies provide knowledge workers with sufficient shared values and these employees can learn through efficient interactions and feedback, it contributes strongly to their perception of meaningful work. The use of formal controls can even be stretched when employees work in companies that have a responsible corporate social responsibility (CSR) culture. The latter finding addresses research that likewise found that meaningful work is realized by commitment to beneficiaries that goes beyond individual tasks and jobs (Aguinis & Glavas, 2019; Brieger et al., 2019; Grant, 2007; Meynhardt et al., 2018). We also find that management accountants perceive meaningful work even when organizations hardly use sensegiving controls. This finding adds to former studies that show that knowledge workers find their work particularly meaningful when they can shape their work themselves and self-determination is particularly pronounced (Bode & Singh, 2018; Lips-Wiersma et al., 2016).

This study contributes to research on control packages of formal and informal controls which argues that multiple combinations of controls as interchangeable elements are equally effective leading to an outcome of interest (Bedford, 2020; Erkens & Van der Stede, 2015; Evans & Tucker, 2015; Ferreira & Otley, 2009; Malmi & Brown, 2008). Thereby, we add to the recent discussions that control practices within an organization are more likely to have the form of a package rather than a totally coherent system (Bedford, 2020; Malmi & Brown, 2008; Merchant & Otley, 2020). By using fsQCA, this study aims to mitigate the weaknesses of variance-based methods when it comes to analysing configurations. As such, this study provides novel insights in the management accounting research stream and follows recent approaches (Bedford et al., 2016; Erkens & Van der Stede, 2015). Our findings also contribute to the literature that focusses on the use of the levers of control (Heinicke et al., 2016; Henri, 2006; Kruis et al., 2016; Mundy, 2010; Widener, 2007). Our study shows that the combined implementation of beliefs and interactive controls is positively related to the perception of meaningful work as a behavioural outcome on individual level.

Moreover, we contribute to research on meaningful work by empirically testing its antecedents. Bailey et al. (2019) mentioned that the organizational behaviour field lacks empirical studies on the steering of meaningful work, and despite its highly inter-disciplinary and fragmented nature, we have not been able to find research regarding the association of management controls to the perception of meaningful work. This study also adds to prior CSR research that highlights the positive effects on individual level when employees perceive themselves as working for an environmentally responsible organization (Aguinis & Glavas, 2019; Glavas & Kelley, 2014; Meynhardt et al., 2018).

The reminder of the paper is organized as follows. The section “Literature background” provides an overview of contemporary literature on meaningful work and on how management controls can work as sensegiving mechanisms for management accountants. The section “Research method” discusses the research method and measurement of the variables. The analyses and results are presented in the “Results” section. Finally, discussions of the results, limitations, and further research avenues are provided in the section “Discussion and conclusion”.

12. Literature Background

12.1. Meaningful Work

Meaningful work is defined as the value of a work goal or purpose judged in relation to individual ideals or standards (Allan et al., 2019; Lips-Wiersma & Wright, 2012; May et al., 2004; Pratt & Ashforth, 2003; Spreitzer, 1996).[4] To distinguish meaningful work from other related constructs such as engagement, satisfaction or commitment, research proposes that the mentioned attributes are proximal outcomes of meaningful work (Allan et al., 2019; Kahn, 1990; Michaelson et al., 2014; Steger et al., 2012). Therefore, over the last decades several management theories have recognized the importance of meaningful work as an antecedent variable for many positive work related traits such as work motivation (Foulk et al., 2019; Hackman & Oldham, 1980; Humphrey et al., 2007) i.e. autonomous motivation (Ryan & Deci, 2000), work behaviour (Bunderson & Thompson, 2009), engagement (Barrick et al., 2015; Humphrey et al., 2007; Kahn, 1990; May et al., 2004; Schneider et al., 2018), psychological empowerment (Drake et al., 2007; Hall, 2008), thriving (Paterson et al., 2014), employee well-being (Franco-Santos & Doherty, 2017; Van De Voorde et al., 2012), creativity (Amabile & Pratt, 2016) and performance (Gartenberg et al., 2019; Humphrey et al., 2007; Wrzesniewski, 2003).

Prior meaningful work literature has connected diverse theory streams to explain how people perceive meaningful work. The construct was first integrated in organizational studies in relation to the job characteristics theory (Hackman & Oldham, 1976, 1980), which identifies conditions that are necessary for people to be intrinsically motivated to show high performance at work.

Grant (2007, 2008) extended the idea of the job characteristics theory and suggests that meaningful work is not merely received from job dimensions but also addresses individuals' interactions and relationships with other persons or groups, both within and outside the workplace. He argues that employees are likely to engage in the pursuit of making positive contributions when they perceive that their actions have an impact on beneficiaries, which provides them with a sense of efficacy (Grant, 2007).

[4] Some authors differentiate between "meaning" and "meaningfulness" (Lepisto & Pratt, 2017; Lysova et al., 2019; Pratt & Ashforth, 2003; Rosso et al., 2010). Meaning, according to Pratt and Ashforth (2003), is the output of having made sense of something, as an individual interpretation what work means, or the role work plays, in the context of one's life (e.g., work is a paycheck, a higher calling, something to do), whereas meaningful work is work experienced as particularly significant and holding more positive meaning for individuals (Pratt & Ashforth, 2003, p. 311). Meaningful work is further described as a process rather than a continuous psychological state (Bailey et al., 2017). People have many episodic experiences at work that are meaningful or meaningless, which they integrate into a belief system about the significance of their work (Allan et al., 2019, p. 502).

Martela and Pessi (2018) broaden that view and argue that next to serving to others, self-realization as a sense of autonomy, authenticity, and self-expression at work also plays a significant role to perceive meaningfulness. Feeling capable to engage in self-determined actions is integral to the self-determination theory (Deci & Ryan, 2000). This theory suggests that individuals perceive a higher work motivation when they can achieve three fundamental goals: striving for competence, autonomy, and relatedness. In addition to these three basic goals, other theories have shown that individuals are also inspired to engage in status-striving behaviours, such as seeking power (Barrick et al., 2013). Research of Bode and Singh (2018) shows that employees are often also focused on private benefits when participating in social initiatives. Corporate social engagement can therefore sometimes be seen as a career management tool where employees expect private career benefits such as developing skills to enhance their career prospects (Bode & Singh, 2018).

Pratt and Ashforth (2003) propose that employees find meaningfulness from memberships and identification with co-workers by building a community. That refers to social identity theory (Ashforth & Mael, 1989), which suggests that if individuals identify with a group, the group becomes a significant part of their self-concept and facilitate meaningfulness (Ashforth & Mael, 1989; Rosso et al., 2010; Wrzesniewski, 2003).

All in all, the literature shows two streams of how an employee can find their work to be meaningful (Lepisto & Pratt, 2017; Michaelson et al., 2014; Pratt & Ashforth, 2003). One stream focuses on enriching tasks and roles, providing autonomy, offering feedback and facilitate learning which (Amabile & Pratt, 2016; Barrick et al., 2013; Hackman & Oldham, 1976). The other stream focuses on enriching memberships by building cultures and identities, visionary leadership practices or by contributing to a greater community (Carton, 2018; Grant, 2007, 2012; Tepper et al., 2018). In the case of knowledge workers, research further propose that individuals who are able to define their work in line with their personal interests or work which they can shape themselves is particularly important for perceiving meaningfulness (Bode & Singh, 2018; Iatridis et al., 2021; Lips-Wiersma et al., 2016). In the next section we focus on the management accounting function and how individuals in changing work environments perceive meaningful work.

12.2. Search for Meaningfulness in the Management Accounting Function

The management accounting function is an organizational service function that entails financial information analysis and decision support to the general management (Horngren et al., 2015). Lately, many academic studies as well as practitioners have noted widening organizational roles for management accountants (Byrne & Pierce, 2007; Goretzki et al., 2013; Horton & Wanderley, 2018; Järvenpää, 2007) often referred to a business partner role (Burns

& Baldvinsdottir, 2005; Goretzki et al., 2013; Morales & Lambert, 2013). This role is associated with the assimilation of accounting information with indicators of non-financial performance to create value and facilitate greater efficiency or business improvement (Horton & Wanderley, 2018). On organizational level, the change to more business orientation is seen as a positive development as the intensified interaction between management accountants and general managers contributes to a better interpretation and evaluation of financial information for managerial decision making (Byrne & Pierce, 2007; Hartmann & Maas, 2011). However, the business partner identity often remains fragile and leaves management accountants with an insecure feeling of still not being there (Goretzki & Messner, 2019). Therefore, management accountants have to cope with uncertainty (Byrne & Pierce, 2007; Morales & Lambert, 2013; Puyou, 2018; Wolf et al., 2020). Besides, management accountants are often stigmatized by a negative image compared to other professions in an organization for their focus on costs without value creation (Byrne & Pierce, 2007; Hiller et al., 2014). Morales (2019, p. 257) puts it in a nutshell: "Overall, management accountants' identity appears as a fragile project of the self, emerging out from struggles for recognition that impact material practices but also involve discursive struggles and debates about the meaning of work."

Generally, individuals show stronger identification with positive and prestigious work settings that fulfil their basic needs for self-esteem and self-enhancement (Dutton et al., 1994). Therefore, changing work conditions often lead to loss of work meaningfulness when changes create contradictions and paradoxes for members (Bailey et al., 2017; De Boeck et al., 2019; Florian et al., 2019). To compensate this struggle, employees choose to adopt deep existential acting strategies to alter their perceptions of their work context (Bailey et al., 2017) such as sensemaking (Lüscher & Lewis, 2008; Weick, 1995). Sensemaking takes place when individuals face with ambiguity and complexity (Weick, 1995) like threats to the work context (Maitlis & Christianson, 2014). Morales (2019) found sensemaking activities in interviews with management accountants from various working contexts who produce a highly standardised, coherent idea of their occupation, its values, and the general orientation by building "symbolic categories". They usually downplay the proximity to the financial accounting teams, the technical aspects, and the routine tasks of their work. On the other hand, they emphasise the human dimensions when interacting with management. Moreover, Lepistö et al. (2018) illustrated that management accountants who work in a shared service centre (usually highly stigmatized as dirty work) use sensemaking activities by refocusing and reframing their work to develop more self-esteem. Research suggests that workers in undesirable jobs derive meaning from such reframing strategies (Ashforth & Kreiner, 1999; Kreiner et al., 2006). However, some recent studies reveal that it may be problematic when individuals are left to their own resources to reframe their work, as it can cause stress and harm their physical and mental health (Bailey et al., 2017; Bunderson & Thompson, 2009; Florian et al., 2019).

Therefore, in order to facilitate management accountants' perception of meaningful work, it is not enough to rely only on their own agency. Organizations need to offer appropriate management controls that facilitate meaningful work and give sense to management accountants in their changing work contexts.

12.3. Sensegiving with Management Controls to Perceive Meaningful Work

Sensegiving is the attempting process to influence the sensemaking and meaning creation of others toward a preferred redefinition of their organizational reality (Gioia & Chittipeddi, 1991). It is not only a top down process as those receiving sensegiving have their own interpretations of it (Sonenshein, 2010). Actors at any organizational level (and outside of the organization) can engage in sensegiving activities (Maitlis & Christianson, 2014). The literature even issued negative effects when sensegiving is only restricted to managerial controls (Corley & Gioia, 2004; Gioia & Chittipeddi, 1991; Maitlis & Christianson, 2014). Sensegiving rather needs a positive valence by an enabling and engaging work environment that guides sensemaking of individuals to facilitate and bolster own agency to perceive meaningful work (Maitlis & Christianson, 2014).

This study addresses how the use of management controls can give sense to management accountants to influence their perception of meaningful work in their changing work contexts.

Management controls include all devices and systems that managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives and strategies (Malmi & Brown, 2008, p. 290). This also includes employee empowerment (Hall, 2008) and motivation (Drake et al., 2007). We refer to the control literature that focus on design choices of controls (Bedford, 2020; Gerdin, 2020; Grabner & Moers, 2013; Kruis et al., 2016; Malmi & Brown, 2008) and also highlight the ongoing use of management controls to be effective (Ferreira & Otley, 2009; Merchant & Otley, 2020; Wouters & Wilderom, 2008). We therefore define the design as the plan ("the What") and the use as the implementation ("the How") of control practices. We specifically propose that management controls with an enabling purpose, in a package use of formal and informal control practices are most effective to facilitate sensegiving for perceiving meaningful work, see Figure 6.

We develop that model to illustrate how sensegiving by management can stimulate individual sensemaking. We draw on the recent discussion of Merchant and Otley (2020) who call for a better understanding of how good practices in management control system design and use can be developed to create performance-enabling environments.

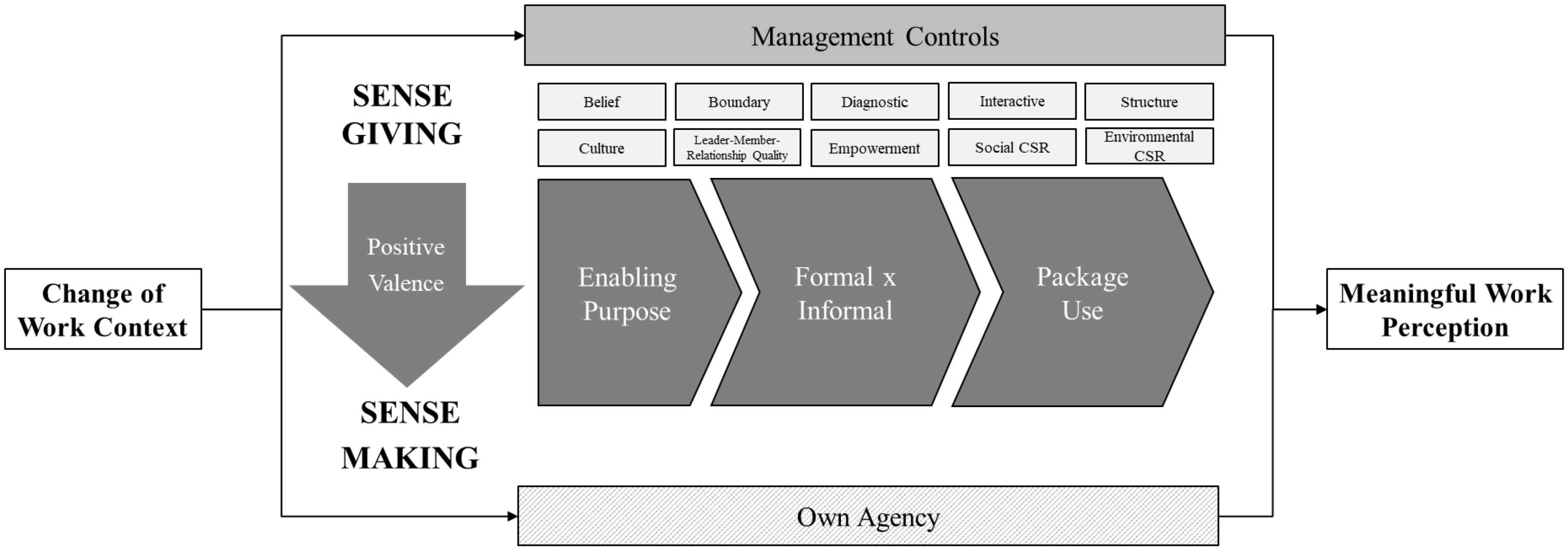

Figure 6 Theoretical Model

Enabling purpose: Ahrens and Chapman (2004) were the first who translated the typology of Adler and Borys (1996) of coercive and enabling organizational bureaucracy into the control literature. Enabling controls are those that are flexible and allow employees to determine the best way to achieve or exceed multiple goals. They are characterized by participative development processes and the sharing of best practice routines, capturing organizational learning, and facilitating knowledge sharing throughout the organization (Heggen & Sridharan, 2021; Wouters & Wilderom, 2008). Employees in an enabling system feel more empowered and committed to their goals than employees in a coercive system, and as a result derive more meaning from their jobs (Burney et al., 2017; Tessier & Otley, 2012). In a coercive system on the other hand, employees are given multiple goals, they are told how to achieve them and are instructed not to deviate from them (Ahrens & Chapman, 2004; Mundy, 2010; Wouters & Wilderom, 2008). When organizations seek to manage employees' experienced meaningfulness through processes of directive control without self-determination, it leads to negative outcomes such as inauthenticity and meaninglessness (Deci & Ryan, 2000; Fineman, 2006; Franco-Santos & Otley, 2018; Lips-Wiersma & Morris, 2009).

Formal and informal controls: It is noted, that sensegiving does not only occur with formal, vertical processes but the literature also highlights the importance of the social context for meaning construction of individuals (Maitlis & Christianson, 2014; Rouleau, 2005). Guided sensemaking occurs when several different parties have the legitimacy, expertise, and opportunity to drive sensemaking (Maitlis & Christianson, 2014). Meaningful work is further strongly influenced by authentic and self-driven leaders (Grant, 2012) as well as an empowering organizational culture (Ashforth et al., 2016; Bailey et al., 2017).

Therefore, we propose that managerial sensegiving to perceive meaningful work is a combination of formal and informal control practices. Formal control mechanisms include formal organizational practices e.g., comprehensive performance measurement and evaluation processes, incentive compensation systems, behavioural constraints, or detailed standard operating procedures (Merchant & Van der Stede, 2012). Informal controls are characterized by less well-defined practices, social relationships, links or loose connections between individuals that facilitate free-flowing, open and flexible communication and structures (Chenhall et al., 2010).

Control package use: While much prior management accounting research focused on formal control systems e.g., the levers of control framework (Kruis et al., 2016; Simons, 1995; Speklé et al., 2017; Widener, 2007), current research begun to examine informal controls that interact with formal management control systems working together as a control package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Malmi & Brown, 2008; Otley, 1999). In general, two perspectives of the control design evolved in the literature. One approach claims that control practices form a control system, when these practices are interdependent and the design choice has taken the interdependencies, i.e., complements and substitutes into account (Grabner & Moers, 2013). The other approach starts with an aggregate investigation of management control practices to identify which management control practices are likely to act as complements or substitutes and then couple these controls independently as a control package (Bedford, 2020; Bedford et al., 2016; Malmi & Brown, 2008). Evidence from the literature suggests that any set of control practices within an organization is more likely to have the form of a package rather than a totally coherent system (Merchant & Otley, 2020). The concept of a package points to the fact that different control systems are often introduced by different interest groups at different times. Thus, controls in their entirety should not be defined holistically as a single system, but instead as a package of systems (Malmi & Brown, 2008). Different formal and informal control configurations may be used simultaneously within an organization, in different combinations, at different times and to different extents as interchangeable elements (Bedford, 2020; Ferreira & Otley, 2009). Research noted for example how organizational culture (Evans & Tucker, 2015; Heinicke et al., 2016; Henri, 2006) or personnel controls (Gerdin et al., 2019; Pfister & Lukka, 2019) interact with formal systems. These combinations are even able to stretch the positive outcomes of formal controls (Pfister & Lukka, 2019).

12.4. Controls Used in This Study

The controls used in this study are diverse formal and informal controls which can be applied loosely connected, adopting the package perspective. Malmi and Brown (2008) argued that there are diverse tools, systems, and practices that managers have available to formally and informally direct employees. Therefore, the selection cannot be too narrow as there is a risk that some controls may go unnoticed and existing links to other controls may obscure the research findings (Malmi & Brown, 2008).

We use beliefs, boundary, diagnostic and interactive control systems as formal controls that form the levers of control (LOC) framework by Simons (1995). This is a holistic system of formal management controls and a prominent approach that is frequently cited (Heinicke et al., 2016; Kruis et al., 2016; Mundy, 2010; Speklé et al., 2017; Tessier & Otley, 2012; Widener, 2007). Previous literature assumes that when all four levers the LOC framework are used together then it creates an enabling control environment (Adler & Chen, 2011; Heggen & Sridharan, 2021; Tessier & Otley, 2012). However, it has been criticized for not giving sufficient emphasis to other controls (Ferreira & Otley, 2009). Thus, it is unlikely that the four levers of control can explain all the mechanisms that are needed to fully facilitate the perception of meaningful work. We also examine organizational structure as a formal control. Organizational structure has often been characterized as a contingency variable in prior studies. However, we refer to Malmi and Brown (2008) who regard organizational structure as an administrative control as it is a mechanism that managers can use and alter. Informal controls in this study include group culture, leader-member-relationship quality, empowerment, and social and environmental CSR. The used formal and informal controls are based on prior evidence from the management accounting and organizational behaviour literature regarding to the perception of meaningful work.

12.4.1. Formal Controls

Beliefs controls signal the core values to employees, in order to inspire and motivate them to take initiative in searching for opportunities, making decisions, and devising solutions to problems consistent with the organization's values (Mundy, 2010; Simons, 1994). **Boundary controls** set restrictions or minimum requirements on employee behaviours to focus the attention to critical operations, which does not necessarily mean a reduction of empowerment or motivation (Adler & Chen, 2011). **Diagnostic controls** communicate targets on critical performance measures that serve to guide behaviours and provide feedback to facilitate learning. The controls are intended to give employees structure that influence feelings of competence (Speklé et al., 2017). **Interactive controls** communicate new ways to strategically position of the organization. Employees become aware of where potential opportunities and threats may arise and are motivated to be proactive in searching for new opportunities and guarding against threats (Simons, 1995). Both levers, diagnostic and interactive controls include the same feedback and measurement systems (e.g., balanced scorecards and budgets), they only differ in the use of the levers (Simons, 1995). In order to facilitate the perception of meaningful work for management accountants in their changing work contexts, beliefs and interactive levers may offer higher levels of vision, autonomy, skill variety and task significance. Diagnostic and boundary levers provide structure by placing limits on inappropriate behaviours, setting clear expectations, and giving resources and feedback.

The perception of meaningful work might also be facilitated by the **organizational structure**. We use the established operationalization as a continuum from mechanic to organic structures (Bedford et al., 2016; Burns & Stalker, 1961; Covin et al., 2001) whereas mechanistic structures are characterized by centralized decision making, authority, strict adherence to formally prescribed rules and procedures, and carefully constructed reporting and workflow relationships. Organic structures are characterized by decentralized decision making, organizational adaptiveness and flexibility, open communications, and self-determination. From the meaningful work perspective, organic structures might work as a sensegiving mechanism, as the literature points out that the perception of meaningful work can be hindered, when employees are not given enough autonomy (Hackman & Oldham, 1980; Ryan & Deci, 2000), or when the management sets limits on how to meet project goals, restricts the idea flow or overreacts to problems (Amabile & Pratt, 2016). If individuals feel pressured or too monitored then their perception of their work might shift from meaningful to meaningless (Bailey et al., 2017; Lips-Wiersma & Morris, 2009; Lips-Wiersma & Wright, 2012; Stein et al., 2019).

12.4.2. Informal Controls

The **group culture** within organizational teams is important to perceive meaningful work, as well, as co-worker related norms are most effective to influence employees' behaviour, attitudes, and the emotional dimensions of work (Ashforth & Mael, 1989; Kahn, 1990; May et al., 2004). Pratt and Ashforth (2003) draw on social identity theory to show how individuals' membership in valued groups through raised levels of self-esteem can enhance the perception of meaningful work. Colbert et al. (2016) also indicate that positive workplace relationships increase perceptions of meaningfulness. From the management accounting field, Lepistö et al. (2018) find that a strong group culture is also a significant neutralizer of the image of dirty work which management accountants often perceive. Müller et al. (2019) identified the importance of interactions to co-workers who face same work-related difficulties in perceiving meaningful work when they have no direct contact to beneficiaries. Altogether, social interventions can therefore be effective in helping to bridge the gap between the desire for meaningful work and the current experience of work for employees (Lips-Wiersma et al., 2016). Next, **psychological empowerment** refers to an individual's intrinsic motivation or a psychological reaction towards a work environment (Spreitzer, 1995, 1996). It reflects the feelings about the own ability to influence how work can be done (Deci & Ryan, 2000; Hackman & Oldham, 1980; Oerlemans & Bakker, 2018). In terms of the changing work context of management accountants, empowerment can be facilitated when management accountants get more resources or more rights or when other actors show that they care about their opinions (Hiller et al., 2014). Further, individuals feel safer to engage themselves more fully, try out novel ways of doing things, discuss mistakes and learn from these behaviours when there is a strong **leader-member-relationship quality** with their direct supervisors (Ashforth & Mael, 1989; Edmondson, 2004; May et al., 2004). Good leadership can align followers' sensemaking activities in a particular direction (Carton & Lucas, 2018; Tepper et al., 2018).

Organizations that are committed to **CSR** activities integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis that go beyond its economic interest (Brieger et al., 2019; Turker, 2009). CSR can offer an opportunity for individuals who are facing work depletion, boredom, or even career stagnation to reengage to their work because it expands the notion of work to go outside of one's particular job (Aguinis & Glavas, 2019). Prior research found that employees who perceive themselves as working for an environmentally or socially responsible organization show higher levels of organizational commitment (Brieger et al., 2019; Glavas & Kelley, 2014; Turker, 2009), engagement (Opoku-Dakwa et al., 2018), creative effort (Brammer et al., 2015), performance (Glavas & Kelley, 2014) and they are more satisfied with their jobs and lives in general (Bauman & Skitka, 2012; Glavas & Kelley, 2014; Meynhardt et al., 2018). Interactions with beneficiaries are motivating because they highlight the prosocial impact that work can have on others (Colbert et al., 2016; Grant, 2007, 2008; Rodell, 2013; Rosso et al., 2010). Organizational CSR activities seem particularly promising as a source of meaningful work for the members of an organization who explicitly comprise caring for others and the environment (Glavas & Kelley, 2014). Organizational CSR commitment can be distinguished between embedded and peripheral CSR (Aguinis & Glavas, 2013). Embedded CSR means that it is integrated within an organization's strategy as well as in daily operations. Peripheral CSR is implemented as an initiative that is not part of a firm's core activities (Aguinis & Glavas, 2013). Most organizations engage in CSR to some degree on the continuum between peripheral and embedded. Therefore, we see CSR commitment more as an informal than a formal control practice.

13. Research Method

The control package perspective builds upon configuration theory which premises that multiple combinations of antecedent conditions are equally effective leading to an outcome of interest (Ragin, 2014; Ragin & Fiss, 2008). Therefore, we employ fsQCA to explore which configurations of formal and informal controls as a package facilitate the perception of meaningful work for management accountants. We aim to overcome some challenges in empirically studying management control packages as these are often very large and complex systems (Malmi & Brown, 2008). Qualitative comparative analysis (QCA), which was first introduced by Charles Ragin in 1989, is a method to analyse multiple cases to identify "recipes" of causal conditions associated with case membership in an outcome set (Ragin, 2008). Although, QCA was developed to analyse small numbers of cases, the method is also frequently applied for large number samples of archival or survey-based data (Fiss, 2011; Greckhamer, 2016; Greckhamer et al., 2013).

QCA combines qualitative and quantitative approaches, but it differs substantially from traditional methods of quantitative analysis that are usually variance-based, whereas QCA is an asymmetric data analysis technique based on Boolean logic and determines causal paths (Ragin, 2014). This logic facilitates to study the different configurations of control packages. Usually, control interactions are being research by using traditional multivariate analytical methods. However, these approaches are less suitable at capturing complex configurations among the independent and dependent variables. The use of interaction effects is limited to two-way or occasionally three-way effects as higher-order interactions are difficult to interpret and are likely to result in multicollinearity (Fiss et al., 2013). Instead, QCA can identify different configurations of conditions and their relation to specific outcomes of interest (Ragin, 2008) and it allows making comparisons across a much larger number of configurations (Erkens & Van der Stede, 2015; Fiss, 2011; Greckhamer et al., 2013).

To indicate the membership of a condition in an outcome set, two types of QCA are usually used - crisp set QCA (csQCA) and fuzzy set QCA (fsQCA). In csQCA, set memberships are evaluated in a dichotomous (‘‘crisp’’) manner. Cases are classified as either ‘‘fully in’’ (1) or ‘‘fully out’’ (0) of the sets (Greckhamer et al., 2013). FsQCA, which is used in this study, examines the relative importance of conditions by calculating the degree of membership in a range of 0 to 1 and gives the opportunity to gain deeper and richer insights into the data (Fiss, 2011; Pappas & Woodside, 2021; Ragin, 2000; Ragin & Fiss, 2008).

13.1. Sampling Strategy and Survey Design

The data for the empirical analysis was collected through a cross sectional survey, as survey methods are suitable to map current practices in the field, which can provide insights regarding striving research topics (Speklé & Widener, 2018). A random selection of 2,500 individual firms that meet the following three criteria were identified from the database “Orbis”. First, all firms are situated in Germany, the German speaking part of Switzerland, Liechtenstein, and Austria. We choose these countries as they share a common language and similar cultural and institutional backgrounds which prevents potential biases caused by different cultural characteristics or distinct institutional settings (Hartmann, 2005). Second, we included all firms with a minimum of 100 employees and EUR 10 million in revenues. Third, we excluded public administrations, banks, and insurance companies. We contacted randomly one member of the control department per firm.

We used the online questionnaire tool “Unipark” for our survey. The cover letter of the questionnaire explained the relevance of the study and emphasized the anonymity and privacy of the respondents. Contact information of the research team was provided to give the opportunity to ask questions or to give feedback if desired. The survey questions have been randomized. To reduce complexity of the study only a limited number of items were displayed on the screen at a time and a progress bar indicated the headway of the participant. We sent a direct invitation message with a short description of the research topic individually via a career network website. When people were willing to participate, we provided the link to the survey by a direct e-mail. To increase the response rate, we offered a few incentives like an executive summary and free participation for an executive education seminar at the university. In case of no response to the first invite, we sent a reminder e-mail ten days after the first contact. The data collection took place between April and August 2020. 295 completed surveys (11.8 percent) returned. Eighteen responses came from non-profit firms and were excluded from our study. This leaves us with 277 useable observations. 76 percent of the participants are male, 24 percent are female, 65 percent are below the age of 40 years and 35 percent are 40 years old or older. Further, 33 percent are in a leading position and 67 percent are non-leading management accountants. Respondents have been working from 1 to 30 years in their profession with an average of 8.33 years. The company sizes are well mixed from 100 to more than 2,500 employees with 27 percent of companies employing between 250 and 499 employees. Demographic information is displayed in Table 3.

We conducted three checks for non-response bias using Mann-Whitney-U-Tests to address the issue of the low response rate of this survey and to check the robustness of the sample (Speklé & Widener, 2018; Van der Stede et al., 2005). First, the construct means between the first and last 20 percent of received surveys are compared. We found no significant differences ($p > 0.05$). Second, the size and sales of respondent firms are compared to the sample population. No significant differences were identified ($p > 0.05$). Third, we classified respondents as early or late (reminder E-mail was sent) and compared the means and again found no significant differences ($p > 0.05$) between early and late respondents.

Moreover, as we rely on cross-sectional data, we checked for common-method bias because the dependent and independent variables are measured by a common source (Chang et al., 2010; Podsakoff et al., 2003; Podsakoff et al., 2012). First, the survey instrument was extensively pre-tested to assess consistency in the interpretation and to remove ambiguity in item wording. We pre-tested it with (a) seven academics in the management control discipline to ensure correspondence between our theory and the measurement of our constructs (content validity-feedback interviews) and with (b) three practitioners to ensure a general understanding of the survey items, and to remove any undue complexity in item wording. Furthermore, as we translated the questionnaire into German language, we used back-translation to compare translations with the original text for quality and accuracy of the meaning between the source and target texts by using a separate independent translator, who had no knowledge of or contact with the original text. Furthermore, we guaranteed complete anonymity of the respondents (Chang et al., 2010) and psychologically separated the measurement of the dependent and independent variables by using buffer items in the questionnaire as a proximal separation (Podsakoff et al., 2012).

Table 3 Demographic Data

	n	%	Mean	Min.	Max.	Std. Dev.
Panel A: Number of employees						
100 - 250	52	18.77%				
250 - 499	75	27.08%				
500 - 999	44	15.88%				
1000 - 2499	46	16.61%				
2500 +	60	21.66%				
Total	277	100.00%				
Panel B: Industry description						
Consumer goods	20	7.22%				
Machinery and plant engineering	29	10.47%				
Chemicals and allied products	15	5.42%				
Electrical engineering and equipment	14	5.05%				
Automotive manufacturing	29	10.47%				
Metal production and fabricated metal products	16	5.78%				
Other manufacturing industry	30	10.83%				
Construction	6	2.17%				
Retail	24	8.66%				
Transportation and communications services	10	3.61%				
Other services, media and IT	22	7.94%				
Other	62	22.38%				
Total	277	100.00%				
Ownership						
Family-owned firms	102	36.82%				
Non-family firms	175	63.18%				
Total	277	100.00%				
Panel C: Sample statistics						
Gender						
Male	210	75.81%				
Female	67	24.19%				
Total	277	100.00%				
Age						
20 - 30	56	20.22%				
30 - 40	123	44.40%				
40 - 50	64	23.10%				
50 - 60	33	11.91%				
60+	1	0.36%				
Total	277	100.00%				
Tenure						
years in the current function	-	-	8.33	1	30	6.81
years in the current company	-	-	5.64	1	35	5.71
years with the current manager / superior	-	-	3.35	1	22	3.12
Total	-	-	-	-	-	-
Leading function	92	33.21%				
Non-leading function	185	66.78%				
Total	277	100.00%				

Note: Percentages may not add up to 100% due to rounding errors.

In addition, we used three statistical tests. First, we conducted a Harman's single-factor test. We performed an unrotated, principal components factor analysis with all manifest variables and extracted factors with eigenvalues larger than one. This resulted in 10 factors with Eigenvalues greater than one and a cumulative variance of 0.73. The first factor explains less than half of the overall variance of 0.29 implying that single-source bias is no significant concern (Podsakoff et al., 2003). Second, we performed the unmeasured latent method factor technique. We added an additional latent factor to the model and allowed all the manifest variables to load on both their theoretical constructs as well as on the latent method factor to assess the amount of variance in the measurement model (Braumann et al., 2020). The results of this procedure indicated that the model fit was improved. The variance explained by the newly added latent variable amounted to 0.28, which is below the recommended cut-off value of 0.5 (Hair et al., 2014; Podsakoff et al., 2003). Third, we employed the marker variable method. We included respondents age as a marker variable that is unrelated to our variable of interest, meaningful work (Podsakoff et al., 2012). The marker variable is not significantly related to any of the variables in the model (Podsakoff et al., 2012). The partial correlations between the variables of interest remained statistically significant while controlling for the marker variable (Podsakoff et al., 2012).

13.2. Variable Measurement

This study aims to investigate the individual perception of meaningful work by management accountants. Formal and informal controls may facilitate these perceptions. Therefore, all variables are intended to measure individual level responses. The variables for this study are based on previously validated, reliable constructs. Each variable is measured with multiple items. Refinements were made in case of reverse coded items which have been removed, in order to reduce complexity of the questionnaire (Dillman et al., 2014). Previous studies have further demonstrated that reverse coded items often lead to unexpected factor structures (Weijters et al., 2013). All items are measured on established and validated 7-point Likert scales. The scales are anchored by 1 "strongly disagree" to 7 "strongly agree" unless reported otherwise. Means are used to create all constructs that will be transformed into fuzzy scores for the fsQCA analyses. We empirically establish construct validity using the tests suggested by Nunnally and Bernstein (1994). Since we are interested in management accountants' interpretation of their organizational reality, our constructs are all perceptual. This is also the case for the dependent variable meaningful work.

In formative constructs the directionality runs from the indicators to the construct (Bisbe et al., 2007; Rossiter, 2002). Principal component analysis (PCA) and variance inflation factors (VIFs) are used to evaluate the validity of formative constructs. PCA reveals that all weights are positive and above 0.20 (Hair et al., 2014). Multicollinearity is examined through the calculation of VIFs. The highest VIF is 4.96, which is below the general tolerance of 10 (Hair et al., 2014). The validity of reflective constructs is assessed through factor analysis, correlation analysis, and Cronbach's Alpha. The factor analysis is conducted with maximum-likelihood extraction and oblique rotation to provide support for unidimensionality for each construct. All Cronbach's alpha coefficients range from 0.78 to 0.95 and are higher than the minimal recommended value of 0.60 (Hair et al., 2014). Thus, the variables show high internal consistency and reliability. Descriptive statistics and construct validity for all reflective constructs are shown in Table 4.

In order to apply fsQCA, constructs must first be coded into conditions for example, the construct "meaningful work" into the condition "high meaningful work". The other variables are coded similarly (Pappas & Woodside, 2021). Second, the conditions need to be transformed into calibrated (fuzzy) sets in the assessment of whether a case is more in or out of the set of high meaningful work (Fiss et al., 2013; Ragin, 2008). This study applies the direct method of calibration (Ragin, 2008). For Likert scales, previous studies often used the endpoints of the scale to indicate the membership, i.e., 7 (full membership), 1 (full non-membership) and 4 (crossover point) as thresholds (e.g., Fiss, 2011; Greckhamer, 2016). The crossover point is the point of the highest ambiguity, i.e. fuzziness (Ragin, 2008).[5] We use the endpoints of the Likert scales (1 – 7) unless there is evidence to change these calibration parameters (Bedford et al., 2016; Greckhamer et al., 2018; Pappas & Woodside, 2021).

We integrate high meaningful work (the outcome) and 10 input conditions into our study and follow the recommendations of Ragin (2008) to limit the number of causal conditions to maximal 10 conditions regarding to reasons of complexity. As this study is case-oriented instead of variable-oriented, control variables are not part of the analysing method (Greckhamer et al., 2013; Ragin, 2000, 2008). All construct measures are illustrated in the Appendix of this study.

[5]To avoid theoretical difficulties of analyzing sets with membership scores of exactly 0.5, we added a 0.001 constant to all fuzzy scores (Fiss, 2011; Greckhamer, 2016).

Table 4 Descriptive statistics and construct validity of reflective constructs [a,b,c,d,e]

	n	Min.	Max.	Mean	Std. Dev.	Loading	Cronbachs Alpha
MW	277	-2.52	1.59	0.00	1.00	(0.45)	0.84
Special meaning of work	277	1	7	5.10	1.55	**0.60**	
Contribution to the community	277	1	7	4.57	1.60	**0.76**	
Sense of pride to work for the firm	277	1	7	4.76	1.54	**0.94**	
Proud to tell others of working for the firm	277	1	7	4.56	1.60	**0.90**	
Clear expectations of management	277	1	7	4.92	1.48	**0.41**	
Management has a clear view of goals	277	1	7	4.66	1.65	**0.55**	
Availability of resources and equipment	277	1	7	5.00	1.59	**0.28**	
DIAG	277	-3.21	1.33	0.00	1.00	(0.78)	0.95
Identification of critical performance variables	277	1	7	5.14	1.45	**0.85**	
target setting for critical performance variables	277	1	7	5.22	1.41	**0.89**	
Monitor progress toward critical performance targets	277	1	7	5.21	1.38	**0.93**	
Provide information to correct deviations from present performance targets	277	1	7	5.27	1.48	**0.86**	
Review key areas of performance	277	1	7	5.38	1.38	**0.88**	
STRUC	277	-1.96	2.08	0.00	1.00	(0.48)	0.80
Typical communication of control information is very open	277	1	7	4.16	1.58	**0.35**	
Degree of accessibility of operational information is free	277	1	7	4.01	1.56	**0.64**	
Content of work-related communication between top management and subordinates is information and idea sharing, consultative, advice giving	277	1	7	3.52	1.60	**0.82**	
Operating management philosophy favours emphasis on giving the most say to the expert in a given situation even if this means bypassing formal line authority	277	1	7	3.38	1.50	**0.78**	
Operating management philosophy favours emphasis on initiative and adaptation to the local situation	277	1	7	3.68	1.44	**0.77**	
GROUPCULT	277	-2.99	1.28	0.00	1.00	(0.56)	0.78
A team environment describes the work environment	277	1	7	5.3	1.48	**0.67**	
Loyalty is important in the work environment	277	1	7	5.53	1.37	**0.78**	
Morale is important in the work environment	277	1	7	4.98	1.46	**0.79**	
EMPOW	277			0.00	1.00	(0.77)	0.94
I have significant autonomy in determining how I do my job.	277	1	7	5.15	1.31	**0.81**	
I decide on my own how to go about doing the work.	277	1	7	5.48	1.28	**0.94**	
I have many possibilities for independence and freedom in how to do my job.	277	1	7	5.52	1.30	**0.92**	
I am allowed to make important decisions about how to operate.	277	1	7	5.31	1.37	**0.83**	
I am allowed a high degree of initiative.	277	1	7	5.64	1.28	**0.87**	

Table 4 (continued)

LMX	277	-2.65	1.30	0.00	1.00	(0.72)	0.93
Cordial	277	1	7	4.48	1.60	**0.79**	
Friendly	277	1	7	5.29	1.55	**0.84**	
Open	277	1	7	5.26	1.63	**0.88**	
Trusting	277	1	7	5.25	1.72	**0.92**	
Close	277	1	7	4.19	1.66	**0.80**	
CSR	277	-1.99	1.92	0.00	1.00	(0.55)	0.91
Contributing to the well-being of employees	277	1	7	4.79	1.42	**0.55**	
Contributing to the well-being of customers	277	1	7	5.78	1.30	**0.38**	
Contributing to the well-being of suppliers	277	1	7	4.09	1.30	**0.50**	
Contributing to the well-being of the community	277	1	7	4.66	1.57	**0.70**	
Environmental issues are integral to the strategy	277	1	7	3.93	1.75	**0.93**	
Addressing environmental issues is integral to the daily operations	277	1	7	3.90	1.78	**0.94**	
Engagement in environmental protection	277	1	7	4.29	1.68	**0.86**	
Short-term goal achievement while staying focused on environmental impact	277	1	7	3.92	1.55	**0.84**	
SOCSR	277	-2.64	1.72	0.00	1.00	(0.49)	0.79
Contributing to the well-being of employees	277	1	7	4.79	1.42	**0.77**	
Contributing to the well-being of customers	277	1	7	5.78	1.30	**0.65**	
Contributing to the well-being of suppliers	277	1	7	4.09	1.30	**0.62**	
Contributing to the well-being of the community	277	1	7	4.66	1.57	**0.75**	
ENVCSR	277	-1.80	1.84	0.00	1.00	(0.80)	0.94
Environmental issues are integral to the strategy	277	1	7	3.93	1.75	**0.93**	
Addressing environmental issues is integral to the daily operations	277	1	7	3.90	1.78	**0.95**	
Engagement in environmental protection	277	1	7	4.29	1.68	**0.86**	
Short-term goal achievement while staying focused on environmental impact	277	1	7	3.92	1.55	**0.84**	

a Extraction method: Maximum-Likelihood.
b Rotation method: Oblimin.
c The variance extracted for each factor analysis is reported in parentheses in the top line of each table.
d Bold indicates the loadings of the items that are used for the final measurement of the construct (> 0.30).
e See Appendix A for complete wording of the items.

Meaningful work: Meaningful work is measured across six items that are derived from the construct "purpose-clarity" by Gartenberg et al. (2019) which originally consists of four purpose measures and three clarity measures. The construct is based on a reflective measurement model and all items load significantly (>0.28) on a single factor (Var. 45.2%, α = 0.84). The construct refers to former research on meaningful work (Cameron 2003, Pratt and Ashforth 2003, Grant 2008), which is often distinguished between meaningfulness in working and meaningfulness at work, where the former refers to the degree that tasks are meaningful, and the latter to one's membership in the organization (Pratt and Ashforth 2003). To strengthen the validity of the construct, we correlate it with an additional single item question that asks respondents if their work is meaningful to them. We find a positive correlation ($r = 0.59$; $p < 0.01$) indicating that the construct is valid.

Beliefs control systems: Beliefs systems (BELIEF) are measured with four questions on a 7-point Likert Scale from 1 “very low extent” to 7 “very high extent”. It is based on a formative measurement model and derived from Bedford (2015). Some of the items are based on those used by Widener (2007) other additional items were created based on the descriptions of Simons (1994, 1995). Previous studies indicate that beliefs systems are defined by (1) the formal documentation of core values of the firm, (2) the active communication of core values (3) the commitment of core values and firm objectives, and (4) the inspiration and guidance of core values in the search for new opportunities (Simons, 1994, 1995).

Boundary control systems: Boundary systems (BOUND) are measured across four items that are derived from Bedford (2015) and based on a formative measurement model. The items scale on a 7-point Likert Scale from 1 “very low extent” to 7 “very high extent”. Bedford (2015) referred on analyses of Simons (1994, 1995) who revealed that boundary systems contain four constitutive dimensions: (1) definition of appropriate conduct, (2) limitation of search and experimentation, (3) active communicated by top management, and (4) use of sanctions to subordinates who engage in activities outside stated boundaries irrespective of the outcome. According to Bedford (2015), these attributes are defining facets of the construct rather than manifestations of a latent construct.

Diagnostic control systems: To measure diagnostic control systems (DIAG) five items are used through a reflective measurement model. The items scale on a 7-point Likert Scale from 1 “very low extent” to 7 “very high extent”. They are derived from Bedford (2015) who adapted the items from Widener (2007) and Henri (2006). Factor analysis shows loadings >0.85 of all items on a single factor (Var. 78%, $\alpha = 0.95$). To create a measure of membership in the set high diagnostic control use, we coded membership as fully out for a Likert score of 3 and fully in for a Likert score of 7. The crossover point is set at a Likert score of 5. We decided to use these calibration parameters as the mean (5.24) and standard deviation (1.29) indicate that almost all firms in the sample place a high emphasis on diagnostic controls which makes it more meaningful to adjust the calibration (Bedford et al., 2016).[6] Theoretically, the high emphasis on diagnostic controls is plausible as this control system is widely used to provide structure and to monitor employee’ behaviour (Simons, 1995).

Interactive control systems: Interactive control systems (INTER) are based on the formative measurement model of Bedford (2015). It was originally defined by Bisbe et al. (2007). The construct is measured across five items that scale on a 7-point Likert Scale from 1 “very low extent” to 7 “very high extent”. The five dimensions are (1) intensive use by top management, (2) intensive use by operating managers, (3) face-to-face challenge and debate,

[6] Similar high emphasis on diagnostic controls has been found in previous empirical studies, as well (e.g., Heinicke et al., 2016; Kruis et al., 2016; Speklé et al., 2017; Widener, 2007).

(4) focus on strategic uncertainties, and (5) non-invasive, facilitating, and inspirational involvement (Bedford, 2015).

Organizational structure: We measure organizational structure (STRUC) as the decentralization of decision rights. The measure is derived from Bedford et al. (2016) and consists of five questions on a 7-point Likert Scale which reflects a continuum from mechanistic to organic organizational structure. All items load significantly (>0.35) on a single factor (Var. 48%, α = 0.80).

Empowerment: Psychological empowerment (EMPOW) is measured with five items from Speklé et al. (2017) who adapted the items from Hall (2008) and Spreitzer (1995). Empowerment assesses the independence and freedom that respondents have in their jobs, i.e., the perception that they can make choices in their work. To calibrate high empowerment, we used the thresholds: full membership (7), full non-membership (3), and the crossover point (5) as the mean (5.42) and standard deviation (1.18) indicate that management accountants in general perceive more self-determination than average.

Group culture: Group culture (GROUPCULT) is measured through a reflective measurement model that is derived from Kruis et al. (2016) and Heinicke et al. (2016). Factor analysis shows loadings >0.67 of all items on a single factor (Var. 56%, α = 0.79).

To calibrate high group culture, we used the thresholds: full membership (7), full non-membership (3), and the crossover point (5) as the mean (5.27) and standard deviation (1.20) indicate a generally higher emphasis on cohesion, teamwork, and emphasis on team norms.

Leader-member-relationship quality: Leader-member-relationship quality (LMX) refers to the relationship towards ones' superior as cordial, friendly, open, trusting, and close. It is derived from Ashford et al. (1998) and scales on a 7-point Likert Scale from 1 "not at all descriptive of our relationship on average" to 7 "very descriptive of our relationship on average". All items load significantly (>0.79) on a single factor (Var. 72%, α = 0.93).

CSR: Organizational CSR commitment (CSR) is derived from Glavas and Kelley (2014) and is measured across four social and four environmental items. As recommended by Glavas and Kelley (2014), we created two separate four-item factors for social responsibility (CSRS) and for environmental responsibility (CSRE), both with significant loadings (CSRS: Loadings >0.62, Var. 49%, α = 0.79; CSRE: Loadings >0.84, Var. 80%, α = 0.94). By using both the social and environment constructs, we can explore the specific impact of each factor on meaningful work, that can be relevant for additional analyses. The social CSR items focus on the different stakeholders of a company and the environmental CSR items represent the embeddedness of CSR in the strategy and daily operating practices of the organization (Glavas & Kelley, 2014).

To observe the interaction of all variables, we use a bivariate Pearson correlation analysis. The correlation matrix, shown in Table 5, presents plausible associations between the constructs. No correlations are above 0.7. Thus, we found no evidence of multicollinearity. Meaningful work is positively correlated with all the used independent constructs.

13.3. Data Analyses

We used the fs/QCA 3.0 software package for all data analyses (Ragin & Davey, 2016). All calibrated measures have been inserted into the so-called truth table. It represents all logically possible combinations of the included theoretical conditions (Greckhamer et al., 2013). These conditions are allocated to a single row based on their fuzzy set membership scores in the outcome set of high meaningful work. After the allocation, the truth table assesses which combinations if any lead to high meaningful work. This requires the specification of minimum frequency and consistency thresholds (Fiss, 2011; Greckhamer et al., 2018).

Frequency indicates the number of cases that need to be observed in a truth table row for having valid empirical evidence. A higher frequency threshold means that each configuration refers to more cases in the sample, but this also reduces the coverage of the sample (Pappas & Woodside, 2021). Accordingly, a lower frequency threshold increases the coverage of the sample, although each combination refers to fewer cases in the sample. The sample size of this study is 277, so the threshold is set at three following the suggestions of Fiss (2011). All combinations with a smaller frequency are removed from further analyses. Afterwards, the truth table is sorted by raw consistency. Consistency refers to the degree to which cases correspond to the set-theoretic relationships expressed in a solution (Bedford et al., 2016; Fiss, 2011). It is like the p-value in regression analysis (Bedford et al., 2016). In this study a consistency threshold of 0.90 is selected, as the minimum consistency threshold should not be below 0.80 (Ragin, 2008).

Table 5 Bivariate Correlations (Pearson)

Variable	1	2	3	4	5	6	7	8	9	10
1. MW										
2. BELIEF	0.472***									
3. BOUND	0.314***	0.561***								
4. DIAG	0.386***	0.423***	0.349***							
5. INTER	0.554***	0.537***	0.444***	0.646***						
6. STRUC	0.400***	0.263***	0.163***	0.157***	0.327***					
7. GROUPCULT	0.542***	0.299***	0.201***	0.372***	0.374***	0.194***				
8. EMPOW	0.446***	0.159***	0.034	0.234***	0.227***	0.335***	0.421***			
9. LMX	0.496***	0.238***	0.153**	0.220***	0.297***	0.373***	0.467***	0.469***		
10. CSRS	0.555***	0.487***	0.283***	0.263***	0.318***	0.355***	0.506***	0.260***	0.320***	
11. CSRE	0.552***	0.349***	0.335***	0.181***	0.305***	0.335***	0.404***	0.231***	0.301***	0.640***

Note: This table shows estimated correlations between constructs. ∗: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$ (two tailed).

In the final step, fsQCA computes three solutions based on Boolean algebra, namely the complex solution, the parsimonious solution, and the intermediate solution. The solutions differ regarding the involvement of simplifying assumptions, called counterfactuals (Fiss, 2011; Greckhamer, 2011, 2016; Pappas & Woodside, 2021). The complex solution excludes counterfactual cases and presents all the possible combinations of conditions when traditional logical operations are applied. Parsimonious and intermediate solution sets integrate counterfactuals. Parsimonious solutions include all counterfactuals and present the most important conditions which cannot be left out from any solution. These are called "core conditions" (Fiss, 2011). They are identified automatically by the software (Pappas & Woodside, 2021). The intermediate solution is obtained when performing counterfactual analysis on the complex and parsimonious solutions including only theoretically plausible counterfactuals by using existing theoretical knowledge (Greckhamer, 2011; Ragin, 2008). The researcher chooses if one of the conditions should be considered as "present", "absent", or "present or absent" in explaining the outcome (Fiss, 2011; Pappas & Woodside, 2021). This study did not include easy counterfactuals. In other words, complex and intermediate solutions are the same. The applied algorithm then determines the commonalities among the combinations that explain the outcome variable based on Boolean algebra. The conditions can be present or absent in a solution, or conditions can be redundant, called "do not care" conditions. Core conditions indicate a strong causal relationship with the outcome. They are surrounded by peripheral elements that support the core conditions but have a weaker relationship with the outcome variable (Bedford et al., 2016; Fiss, 2011; Pappas & Woodside, 2021). That leads to conditions being identified as sufficient and necessary to explain the outcome or insufficient on their own but necessary parts of the solution (Fiss, 2011).

14. Results

14.1. Main Analyses

Table 6 shows the solutions of the fsQCA analysis. The solutions are presented by using the generally accepted notation where solid circles (●) refer to the presence of a condition and crossed-out circles (⊗) show its absence (Ragin & Fiss, 2008).[7] Large circles indicate core conditions that occur in parsimonious and intermediate solutions, and small circles refer to peripheral conditions that occur in intermediate but not parsimonious solutions. Blank spaces in a solution indicate a "do not care" situation, where the absence or presence of a condition

[7] In case of organizational structure solid circles (●) refer to the use of organic structural controls while crossed-out circles (⊗) refers to the use of mechanistic structural controls (Bedford et al., 2016).

has no effect of the outcome (Fiss, 2011; Greckhamer, 2016). Solutions are grouped by their core conditions.

Table 6 also reports consistency and coverage measures (Greckhamer et al., 2018; Ragin, 2008). The overall coverage describes the extent to which the outcome of interest is explained by the configurations. This is comparable with the R-square statistics in regression-based methods (Pappas & Woodside, 2021). The higher a configuration's coverage, the more empirically relevant is a configuration for reaching the outcome of interest. Zero is the lowest and one is the highest possible coverage score. The coverage of the overall solution is 0.64. This shows a good amount of explanatory power of the conditions for high meaningful work (Ragin, 2008). A strong configuration's consistency implies strong evidence for a configuration being related to high meaningful work, which is comparable to a p-value in regression methods (Erkens & Van der Stede, 2015). All configurations exhibit high consistency values of at least 0.93, with the overall solution consistency at 0.90, indicating that the configurations are strongly related to high meaningful work (Ragin, 2008).

The solutions of the fsQCA results in six equally effective configurations for high meaningful work. The first four solutions 1a – 1d highlight management control packages with core combinations of high beliefs systems, high interactive control systems and high environmental CSR commitment as a mix of formal and informal controls to be effective for the meaningful work perception of management accountants. Other formal control practices are present peripheral conditions that complement the core controls. The other informal controls are present, absent, or redundant controls in the solutions 1a – 1d. Solution 2 does not show any core conditions. Only a combination of boundary, diagnostic and interactive control systems are present peripheral conditions. The rest of the conditions should be absent for management accountants' perception of meaningful work.

In the third solution, combinations of high beliefs systems and high environmental CSR commitment are also core conditions. However, unlike in solutions 1a – 1d, interactive systems are not core elements but absent conditions in this set. Only boundary systems and social CSR commitment are present complementary conditions. All other controls need also to be absent for high meaningful work perceptions.

Table 6 Results of fsQCA for High Meaningful Work

		1a	1b	1c	1d	2	3
Formal Controls							
	Beliefs systems	●	●	●	●	⊗	●
	Boundary systems	•	•	•	•	•	•
	Diagnostic systems	•	•	•	•	•	⊗
	Interactive control systems	●	●	●	●	•	⊗
	Organizational structure (organic)	•	•	•	•	⊗	•
Informal Controls							
	Group culture	•	•	•	•	⊗	⊗
	Empowerment		⊗	•	•	⊗	⊗
	Leader-member-relationship quality		⊗	⊗	•	⊗	⊗
	Social CSR commitment	•	•	•		⊗	•
	Environmental CSR commitment	●	●	●	●	⊗	●
	Consistency	0.951	0.939	0.969	0.975	0.935	0.927
	Raw coverage	0.494	0.423	0.427	0.408	0.368	0.372
	Unique coverage	0.011	0.011	0.005	0.011	0.036	0.031
Overall solution consistency				**0.9**			
Overall solution coverage				**0.64**			

14.2. Sensitivity Analyses

QCA solutions can be considered to be robust if slightly different inputs lead to similar enough findings in terms of necessity and sufficiency (Greckhamer et al., 2018). To check for the robustness of the findings above, we changed calibration thresholds to a standard calibration[8] which slightly changes the findings' consistency (0.86) and coverage (0.58) but does not affect core conditions or the configurations found for high identity fit substantially. This is in line with previous analyses in the field (Fiss, 2011; Greckhamer et al., 2018). Table 7 shows the alternative standard calibrations. Again, six solutions are presented. Combinations of beliefs systems, interactive systems and environmental CSR commitment are still present as core conditions. Additionally, boundary systems, diagnostic systems and social CSR commitment serve as core conditions. Like in the main analyses, organizational structure, group culture, empowerment and leader-member-relationship quality are peripheral conditions for high meaningful work perceptions.

Next, we perform analyses with configurations for the absence of meaningful work. The logic of QCA is causally asymmetric (Fiss, 2011). Therefore, the set of causal conditions leading to the presence of an outcome is usually different from the set of conditions leading to the absence of an outcome (Fiss, 2011; Ragin, 2000). This understanding is different from standard regression analyses. In such analyses, predicting the absence of an outcome is always part of the analysis because of the symmetry of relationships in regression models (Fiss, 2011). The absence of high meaningful work is coded as the negation of the measure of high meaningful work described above (full membership set at 1, full non-membership set at 7, crossover point set at 4). The fuzzy set analysis of the absence of high meaningful work indicated no consistently identifiable solution. This consistent with an asymmetric understanding of causality in configurations (Ragin, 2000). In other words, there are many different paths that lead to the perception of meaningless work but only a few that lead to meaningful work. For management control research, it demonstrates a need for a shift towards building and testing theories that allow for asymmetry of the effects of management control practices, as recommended by Erkens and Van der Stede (2015).

Prior QCA literature indicated that supplementary analyses of traditional quantitative methods like regression or cluster analyses often offer limited additional insights to be complementary robustness tests (Erkens & Van der Stede, 2015; Fiss, 2011). Therefore, we did not include variance-based analyses in this study.

[8] 7 = full membership, 1 = full non-membership, 4 = crossover point

Table 7 Results of fsQCA for High Meaningful Work with Standard Calibration

Formal Controls	1a	1b	1c	2	3	4
Beliefs systems	●	●	●	●		•
Boundary systems	●	●	●	●	•	•
Diagnostic systems	●	●	⊗	⊗	⊗	●
Interactive control systems	●	●	●		●	•
Organizational structure (organic)	•	•	•	•	•	•
Informal Controls						
Group culture	•		⊗	⊗	⊗	⊗
Empowerment	•	⊗	⊗	⊗	⊗	⊗
Leader-member-relationship quality	•	⊗		⊗	⊗	⊗
Social CSR commitment	●	●	●	●	⊗	⊗
Environmental CSR commitment	●	●	●	•	●	⊗
Consistency	0.992	0.949	0.929	0.911	0.907	0.902
Raw coverage	0.171	0.273	0.399	0.398	0.422	0.246
Unique coverage	0.032	0.017	0.029	0.034	0.063	0.014
Overall solution consistency			**0.86**			
Overall solution coverage			**0.58**			

15. Discussion and Conclusion

This study addresses whether the use of management controls can give sense to management accountants to influence their perception of meaningful work in their changing work contexts. Prior research reveals that individuals reframe their work in shifting contexts to sustain their sense of meaningfulness (Ashforth & Kreiner, 1999; Kreiner et al., 2006). However, it is often not enough to rely only on own agency (Bailey et al., 2017; Florian et al., 2019). Organizations need to offer appropriate management controls that facilitate meaningful work and give sense to management accountants in their changing work contexts. We refer to the control literature that regards design and use choices of controls (Bedford, 2020; Gerdin, 2020; Grabner & Moers, 2013; Kruis et al., 2016; Malmi & Brown, 2008) and propose that controls with an enabling purpose, in a package use of formal and informal control practices are most effective to facilitate meaningful work. The package perspective relies on configuration theory, that premises that multiple combinations of antecedent conditions are equally effective for leading to an outcome of interest (Ragin, 2014; Ragin & Fiss, 2008). We apply fsQCA to overcome the empirical problems of investigating control packages with our survey data (Malmi & Brown, 2008).

The results of our analyses show that the combinations of formal and informal controls as a package are suitable sensegiving mechanisms for management accountants (Maitlis & Christianson, 2014; Rouleau, 2005). More specific, beliefs and interactive controls together with the organizational commitment to environmental CSR activities are core controls in most solutions that lead to high perceptions of meaningful work. The first set of results can be interpreted as follows. Beliefs controls signal the core values of the organization and motivate management accountants to take initiative in searching for opportunities, making decisions, and devising solutions to problems consistent with organizational values (Mundy, 2010; Simons, 1994). Interactive controls communicate new ways of thinking and facilitate innovation. Employees become aware of where potential opportunities and threats may arise and are motivated to be proactive in searching for new opportunities and guarding against threats (Simons, 1995). Both controls in interaction facilitate meaningful work by offering higher levels of vision, autonomy, skill variety, task significance and motivation. Additionally, management accountants perceive their work as most meaningful when their employing organizations care for the environment. This adds to the understanding of the process of experienced meaningfulness by going beyond individual tasks and jobs (Aguinis & Glavas, 2019; Brieger et al., 2019; Meynhardt et al., 2018). Working in an organization that commits itself to environmental CSR activities adds to a positive own self-concept for individuals as an attractive image (Aguinis & Glavas, 2019; Brammer et al., 2015). Thus, when an organization contributes to the common good through responsible behaviours, its employees may gain more recognition in society (Meynhardt et al., 2018). Second, we find one solution that does not show any core conditions to facilitate the perception of meaningful work. Although boundary systems, diagnostic systems and interactive control systems are present, this result shows that management accountants even perceive meaningful work when organizations hardly use sensegiving controls. This result is in line with former studies that show that knowledge workers find their work particularly meaningful when they can shape their work themselves and self-determination is particularly pronounced (Bode & Singh, 2018; Lips-Wiersma et al., 2016). The third set of solutions highlights the combination of beliefs systems and environmental CSR commitment of the firm as core conditions, as well. Boundary systems, an organic structure and social CSR commitment serve as present peripheral conditions. All other controls are absent in this set.

The findings add valuable knowledge to the management accounting and meaningful work literature. First, we demonstrate that several configurations of formal and informal controls as a control package (Malmi & Brown, 2008) facilitate the perception of meaningful work. Thereby, we add to the recent discussions that control practices within an organization are more likely to have the form of a package rather than a totally coherent system (Bedford, 2020; Malmi & Brown, 2008; Merchant & Otley, 2020). Most management accounting studies may assume coherent control systems rather than control packages to be effective. However, the coupling of management controls may change over time or because of organizational contingencies and coherence is the exception and not the rule (Merchant & Otley, 2020). The package perspective builds upon configuration theory that premises that multiple combinations of antecedent conditions are equally effective leading to an outcome of interest (Ragin, 2014; Ragin & Fiss, 2008). By using fsQCA, this study aims to mitigate the weaknesses of variance-based methods when it comes to analysing configurations. As such, this study provides novel insights in the management accounting research stream and follows recent approaches (Bedford et al., 2016; Erkens & Van der Stede, 2015).

Second, the findings contribute to the literature that focusses on the advantages of the use of control levers (Kruis et al., 2016; Mundy, 2010; Widener, 2007). It adds knowledge to the dual interactions of the levers. This stream has priorly mostly studied interactions between diagnostic and interactive controls e.g., in innovation contexts (Bedford, 2015; Müller-Stewens et al., 2020). Our study shows that the combined implementation of beliefs and interactive controls is positively related to the perception of meaningful work as an individual behavioural outcome. However, we want to consider the sequence of adoption of these controls to be important for maximizing benefits (Bedford, 2020). Widener (2007) argued that shared beliefs contribute to developing the conditions necessary for an effective use of interactive controls. Therefore, unless beliefs systems are in place for enough time to affect a change in organizational values, the complementarity between beliefs and interactive control levers may not occur (Bedford, 2020).

Third, we contribute to the meaningful work research stream by empirically testing meaningful work antecedents and follow calls from Bailey et al. (2017). The results contribute to prior research that argues that meaningful work is not merely received from job characteristics but also addresses actions that have an impact on beneficiaries. We show that management accountants, who conduct financial information analysis and decision support to the general management as an organizational service function, perceive meaningful work not only by work-centric elements (Amabile & Pratt, 2016; Barrick et al., 2013; Hackman & Oldham, 1976) but they also perceive meaningful work, when the employing organization contributes to a greater community (Carton, 2018; Grant, 2007, 2012; Tepper et al., 2018). Furthermore, self-determination is an integral component in the meaningful work perception of management accountants. This finding adds to studies that focus on knowledge workers that have likewise found strong associations between self-determination and the perception of meaningful work (Bode & Singh, 2018; Iatridis et al., 2021; Lips-Wiersma et al., 2016).

Fourth, our results show that perceived environmental commitment of a firm contributes to high meaningful work for management accountants. This adds to previous CSR research that highlights the positive effects on individual level when employees perceive themselves as working for an environmentally responsible organization (Bauman & Skitka, 2012; Glavas & Kelley, 2014; Meynhardt et al., 2018; Turker, 2009).

Many management implications can be drawn from our findings. Management accountants as well as many other organizational functions are facing changing work contexts which might lead to a loss of meaningfulness (Florian et al., 2019). Organizational sensegiving approaches can facilitate a sense of meaning (Gioia & Chittipeddi, 1991). However, too often sensegiving results in negative effects in practice when it is only restricted to top-down control for certain change processes (Corley & Gioia, 2004; Gioia & Chittipeddi, 1991; Maitlis & Christianson, 2014). Organizational sensegiving needs instead a positive valence by an enabling work environment that guides sensemaking of individuals (Maitlis & Christianson, 2014). By employing the package perspective, our study shows that diverse formal and informal controls which can be applied loosely connected at different times and in different extents are most effective to enhance the perception of meaningful work for management accountants. Therefore, management can apply diverse tools rather than design a complex system. Especially the use of informal controls is quickly and flexibly approachable with certain leadership practices.

Our study emphases the enabling use of beliefs and interactive control systems together with an honest commitment to environmental responsibility by organizations. Management accountants as knowledge workers also perceive their work as particularly meaningful, when they can shape their work themselves (Bode & Singh, 2018; Lips-Wiersma et al., 2016).

CSR commitment expands the work context from being primarily financially driven to incorporate also other components to individuals' perception of meaningful work (Aguinis & Glavas, 2019). Prior empirical evidence supports the notion that employees are more satisfied with their jobs and lives, and are less willing to quit their jobs, when working for a socially responsible organization (Brieger et al., 2019; Glavas & Kelley, 2014; Hansen et al., 2011; Meynhardt et al., 2018). At the same time, previous research has shown that service to others is not always a purely altruistic behaviour. Often employees are also focused on private benefits when participating in social initiatives (Bode & Singh, 2018; Iatridis et al., 2021). On the contrary, CSR commitment can in some situations be perceived as being an extra role task and leads to role strain which is negatively related to meaningful work (Aguinis & Glavas, 2019; Brieger et al., 2019). This situation can be referred to a too-much-of-a-good-thing (TMGT) effect (Pierce & Aguinis, 2013), that comes with a trade-off between the benefits and drawbacks of managerial sensemaking activities (management controls) and causes a shift from meaningful to meaningless work.

Like most studies, our results need to be interpreted in the context of their potential limitations. First, we use a cross sectional survey of management accountants. Thereby, we only measure respondents' individual perceptions of how they perceive their work as meaningful. These results do not give any information about the work performance of employees. Further, cross-sectoral studies are not spared from common drawbacks (Speklé & Widener, 2018), that we tried to mitigate by using diverse robustness checks. We see no reason to expect systematic bias across variables and the likelihood of common method bias is low. Second, QCA studies are not necessarily generalizable as this is depended upon the initial construction of the study sample and the incorporation of any simplifying assumptions (Greckhamer et al., 2018). As the sample of this study is based on random data, we checked for the appropriateness to mitigate the likelihood of errors. We also left out easy counterfactuals as simplifying assumptions. Another limitation concerns the measures of the CSR constructs. The measures of environmental CSR picture more the strategic/operative level of the company towards the environment where the social CSR measures reflect the well-being of different stakeholders (Glavas & Kelley, 2014). Thereby, the social CSR questions are not be completely interpretable as social actions to beneficials in the community (Grant, 2007).

Despite the limitations, the aim of this study is to create a better understanding of the possibilities for companies to facilitate their employees (in this case management accountants) higher perceptions of meaningful work, as a sensegiving mechanism in changing work contexts. The empirical results of the fsQCA analyses indicate that the combination of formal and informal controls as a control package provides optimal solutions. The combinations of beliefs and interactive controls together with the perceived environmental CSR commitment are at the core of this.

Our paper proposes several avenues for future research. We did not investigate own sensemaking activities incorporating to the external processes for perceiving meaningful work. Former studies illustrate a positive effect of employee involvement e.g., job crafting on their motivation and even individual performance (Groen et al., 2012; Groen et al., 2017). The co-development of performance measures has found to help employees in routinely discussions with managers for addressing any problems, favourable or unexpected events, actions taken, improvement ideas, and so forth (Groen et al., 2017). Thereby, a future study can investigate the involvement of individual level agency in facilitating meaningful work. A future study can also investigate how controls can be applied as concrete practices to facilitate the meaningful work perception as this study has a rather holistic focus. To validate our findings, future studies can complement our results with the application of other research methods such as experimental and longitudinal methods. Further, a future study can empirically focus on the TMGT effect to follow calls of recent management accounting literature to consider capturing non-linear models (Bedford, 2020; Burkert et al., 2014; Luft & Shields, 2003). Our results might also be driven by specifics of the German speaking management accounting function or might be influenced by characteristics of our sample with respect to firm size and industry structure which could be complemented by studies in other cultural areas.

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Appendix

Survey instrument items

	Items	Anchors
1	**Meaningful Work**	*Likert Scale 1-7: 1 = Strongly Disagree and 7=Strongly Agree*
	Meaningfulness at work / Purpose	
1.1	My work has special meaning, this is not just a job.	
1.2	I feel good about the ways we contribute to the community.	
1.3	When I look at what we accomplish, I feel a sense of pride.	
1.4	I'm proud to tell others I work here.	
	Meaningfulness in working /Clarity	
1.5	Management makes its expectations clear.	
1.6	Management has a clear view of where the organization is going and how to get there.	
1.7	I am given the resources and equipment to do my job.	
2	**Belief control systems**	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
	To what extent. . .	
2.1	Are the values, purpose and direction of the company codified in formal documents? (e.g., mission/value statements, credos, statements of purpose)	
2.2	Does top management actively communicate core values to subordinates?	
2.3	Are formal statements of values used to create commitment to the long-term vision of top management?	
2.4	Are formal statements of values used to motivate and guide subordinates in searching for new opportunities?	
3	**Boundary control systems**	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
	To what extent. . .	
3.1	Are codes of conduct or similar statements relied upon to define appropriate behaviour?	
3.2	Are there policies or guidelines that stipulate specific areas for, or limits on, opportunity search and experimentation?	
3.3	Does top management actively communicate risks and activities to be avoided by subordinates?	
3.4	Are sanctions or punishments applied to subordinates who engage in risks and activities outside organizational policy, irrespective of the outcome?	
4	**Diagnostic control systems**	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
	To what extent does the top management team use budgets and performance measures for the following	
4.1	Identify critical performance variables (i.e., factors that indicate achievement of current strategy)	
4.2	Set targets for critical performance variables	
4.3	Monitor progress toward critical performance targets	
4.4	Provide information to correct deviations from present performance targets	
4.5	Review key areas of performance	
5	**Interactive control systems**	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
	To what extent does the top management team use budgets and performance measures for the following	
5.1	Provide a recurring and frequent agenda for top management activities	
5.2	Provide a recurring and frequent agenda for subordinate activities	
5.3	Enable continual challenge and debate of underlying data, assumptions and action plans with subordinates and peers	
5.4	Focus attention on strategic uncertainties (i.e., factors that may invalidate current strategy or provide opportunities for new strategic initiatives)	
5.5	Encourage and facilitate dialog and information sharing with subordinates	

6	**Structure**	*Likert Scale 1-7*
6.1	Indicate how control information is typically communicated in your company	1 = through highly structured, formal channels of communication; 7 = through very open, informal channels of communication
6.2	Indicate the accessibility of operational information in your company	1 = highly restrictive access to important operational information; 7 = free flow of important operational information throughout the SBU
6.3	Indicate the content of work-related communication between top management and subordinates	1 = top management decisions and mandates, instructional, direction giving; 7 = information and idea sharing, consultative, advice giving
6.4	In general, the operating management philosophy in my company favours	1 = emphasis on giving the most say in decision making to formal line managers; 7 = emphasis on giving the most say to the expert in a given situation even if this means bypassing formal line authority
6.5	In general, the operating management philosophy in my company favours	1 = emphasis on specialisation and top-level coordination; 7 = emphasis on initiative and adaptation to the local situation
7	**Group Culture**	*Likert Scale 1-7: 1=Strongly Disagree and 7=Strongly Agree*
7.1	A team environment describes my work environment	
7.2	Loyalty is important in my work environment	
7.3	Morale is important in my work environment	
8	**Empowerment**	*Likert Scale 1-7: 1=Strongly Disagree and 7=Strongly Agree*
8.1	I have significant autonomy in determining how I do my job.	
8.2	I decide on my own how to go about doing the work.	
8.3	I have many possibilities for independence and freedom in how to do my job.	
8.4	I am allowed to make important decisions about how to operate.	
8.5	I am allowed a high degree of initiative.	
9	**Leader-Member Relationship Quality** *Please scale your relationship to your supervisor*	*Likert Scale 1-7: 1 "not at all descriptive of our relationship on average" and 7 "very descriptive of our relationship on average"*
9.1	Cordial	
9.2	Friendly	
9.3	Open	
9.4	Trusting	
9.5	Close	
10	**Organizational commitment to CSR** *Social*	*Likert Scale 1-7: 1=Strongly Disagree and 7=Strongly Agree*
10.1	Contributing to the well-being of employees is a high priority at my organization.	
10.2	Contributing to the well-being of customers is a high priority at my organization.	
10.3	Contributing to the well-being of suppliers is a high priority at my organization.	
10.4	Contributing to the well-being of the community is a high priority at my organization.	
	Environmental	
10.5	Environmental issues are integral to the strategy of my organization.	
10.6	Addressing environmental issues is integral to the daily operations of my organization.	
10.7	My organization takes great care that our work does not hurt the environment.	
10.8	My organization achieves its short-term goals while staying focused on its impact on the environment.	

Article 3

The Reconstruction of a Professional Identity - Evidence from the Management Accounting Function

Janine Burghardt

17. Abstract

This study investigates which configurations of organizational level and group level mechanisms support an identity fit for management accountants in the changing management accounting profession. It aims to complement recent qualitative management accounting research. This stream just begun to use role and identity theory to investigate role expectations, conflicts, and coping strategies of management accountants. By using an institutional lens, this study builds on configuration theory and employs a fuzzy set qualitative comparative analysis (fsQCA) to indicate all possible configurations of formal and informal management controls that legitimize management accountants' identity reconstruction. The analyses are based on the results of a cross-sectional survey of 277 management accountants from Germany, Austria, Switzerland, and Liechtenstein. The results show that a strong group culture and high psychological safety on the group level are relevant conditions for a high identity fit. Further, the configurations differ regarding the career stages of management accountants. This study contributes to research on identity reconstruction and to research on formal and informal control configurations as a control package.

Keywords: management accountant, identity fit, formal and informal controls, configuration theory, fuzzy set qualitative comparative analysis

JEL Classifications: C83, D21, M12, M14, M40

18. Introduction

According to the recent World Economic Forum's Future of Jobs report, most professions are affected by digitalization. The report predicts that 50 percent of all professions will change in a certain way by 2025 as the use of digitalization increases (Schwab & Zahidi, 2020). Driven by this trend, there is also a lively practical and scientific discourse about the changing role of management accountants from a traditional bookkeeping and reporting function to become a finance business partner with a consulting focus and changing characteristics such as deeper business knowledge and higher information technology skills (Byrne & Pierce, 2007; Goretzki et al., 2013; Järvenpää, 2007). In theory, this change is seen as a positive development of the profession (Byrne & Pierce, 2007; Hartmann & Maas, 2011). However, in practice, the business partner role often remains fragile and management accountants find themselves uncertain of their organizational identity which leads to identity conflicts on individual level (Byrne & Pierce, 2018; Lepistö et al., 2018; Morales & Lambert, 2013). To overcome these conflicts, management accountants initiate change efforts in a particular direction to gain a match between their strengths, personality, and work preferences with their current roles i.e., an identity fit (Horton et al., 2014; May et al., 2004).

Prior research suggests that reducing conflicts and ambiguities has positive effects on management accountants' job satisfaction and commitment (Shafer et al., 2002; Sorensen & Sorensen, 1974). Further, identity conflicts have been found to increase the likelihood of dysfunctional behaviour like job mitigation (Sorensen & Sorensen, 1974) and even profit manipulation (Lambert & Sponem, 2005) or misreporting (Maas & Matějka, 2009). Therefore, the reduction of identity conflicts is not only of individual but also of organizational concern.

A growing number of studies in the management accounting research stream investigates change efforts to overcome identity conflicts of the management accountant (Byrne & Pierce, 2018; Goretzki & Messner, 2019; Morales & Lambert, 2013). This study adds to the findings of prior literature and focuses on the realization of an identity fit perceived by management accountants. Most of the previous studies restricted their focus of analysis on single dimensions of responses to the identity conflict and do not reflect the variety of factors in interaction that might support an identity fit. Therefore, I use an institutional lens (Abrahamsson et al., 2011; Goretzki et al., 2013; Taylor & Scapens, 2016) and apply configuration theory (Ragin, 2014; Ragin & Fiss, 2008) to identify which combinations of formal (organizational level) and informal (group level) management controls help to gain legitimacy for the reconstruction of the aspired identity fit of management accountants in order to be able to shape their role effectively. In doing so, I follow calls of the identity literature for a better understanding of multilevel mechanisms for the identity reconstruction in the organizational context (Ashforth et al., 2011; Chreim et al., 2007; Dutton et al., 2010; Horton et al., 2014; Lok, 2010).

This quantitative and set theoretic approach (Ragin, 2008) is different from prior mostly qualitative studies which can be classified into two directions. On the one hand, studies observe individual sensemaking activities to reframe the own identity (e.g. Heinzelmann, 2018; Morales, 2019; Morales & Lambert, 2013; Puyou, 2018). On the other hand, studies focus on institutional work to gain legitimacy for the desired identity in the organization (e.g. Goretzki et al., 2017; Goretzki & Messner, 2019; Goretzki et al., 2013). Individual sensemaking with reframing strategies, however, does not provide avenues for actual change, instead individuals accept their identity and play down the undesirable features while focusing on the aspirational aspects of their work (Goretzki & Messner, 2019; Morales & Lambert, 2013). Identity research suggests that gaining legitimacy is the most important step in the reconstruction of an identity (Creed et al., 2002). Initially, individuals need to be willing to reconstruct their identity (Abrahamsson et al., 2011; Goretzki et al., 2013). Then the key aspect of the identity work is the legitimization of the aspired identity by other organizational actors to facilitate the institutionalization of the identity reconstruction (Goretzki et al., 2013; Järvenpää, 2009). To support this institutionalization diverse mechanisms on organizational and group level might be relevant.

Research in the field of organizational behaviour has already introduced diverse mechanisms that are positively related to an identity fit (Alvesson & Willmott, 2002; Ashforth & Mael, 1989; Dutton et al., 1994; Dutton et al., 2010; May et al., 2004). The management accounting research also just begun to identify mechanisms that initiate identity work to foster an identity fit (Goretzki & Messner, 2019; Goretzki et al., 2013; Järvenpää, 2007; Taylor & Scapens, 2016). This study investigates the interactions of formal management controls like diagnostic, interactive, boundary and beliefs controls, the organizational structure as well as job clarity with informal management controls like group culture, leader-member-relationship quality, and psychological safety. These different mechanisms that have been found to be relevant independently may also contribute to an identity fit in a configuration.

I employ fuzzy set qualitative comparative analysis (fsQCA) within a large-scale sample of 277 management accountants from Germany, Switzerland[9], Liechtenstein, and Austria. In doing so, I introduce a novel method of analysis in the research stream on management accountants' identity reconstruction, as most of the previous studies rely on case study data (Goretzki et al., 2013; Lepistö et al., 2018; Morales & Lambert, 2013) or draw conceptional relationships that have not been tested empirically (Horton & Wanderley, 2018).

[9] The sampling choice was driven by the common language (German). Therefore, the Swiss sub sample only includes firms from the German-speaking part of Switzerland.

In general, configuration theory premise that multiple combinations of antecedent conditions are equally effective leading to an outcome of interest (Greckhamer et al., 2018; Pappas & Woodside, 2021). In this case, different configurations of formal and informal controls as a control package may support the identity fit of management accountants in the process of identity reconstruction. Configuration approaches such as fsQCA have become increasingly popular in various research areas in recent years (e.g. Bedford et al., 2016; Frambach et al., 2016; Greckhamer, 2011; Pappas & Woodside, 2021). Qualitative comparative analysis (QCA) is used to identify logically simplified statements that describe different configurations of conditions and their relation to specific outcomes of interest (Ragin, 2008). The advantage of the use of QCA is that it does not require researchers to pre-specify which solution is examined. Instead, QCA allows making comparisons across a much larger number of configurations than it would be possible using traditional quantitative methods as for example interactions in regression-based analyses (Erkens & Van der Stede, 2015; Fiss, 2011; Greckhamer et al., 2013).

The results of this study show that there are multiple, equally effective ways to support an identity fit for management accountants. Within the overall sample, the results show high emphasis on informal controls as several solutions present a combination of a strong group culture and high psychological safety as especially relevant to support an identity fit. As such, this research adds to the literature from the field of organizational behaviour, where a strong group culture and supportive and trustworthy relationships are seen as highly effective in influencing employees' perceptions that they are able to self-express at work (Edmondson, 1999; Kahn, 1990; May et al., 2004). Moreover, the results complement prior findings from qualitative research on management accounts’ identity work (Goretzki et al., 2013; Järvenpää, 2007; Lepistö et al., 2018)

The data also indicates combinations of high job clarity and high leader-member-relationship quality. These findings address prior discussions on changing management accounting practices, often related to the business partner role, and their influence on individuals’ identities. Identity conflicts often occur when management accountants have only limited clarity on how new practices are aligned with their understandings of their inner self (Goretzki et al., 2013; Järvinen, 2009; Morales & Lambert, 2013). Besides, individuals feel safer to engage themselves more fully, try out novel ways of doing things, discuss mistakes and learn from these behaviours when they are in supportive leader-member relationships (Edmondson, 2004; May et al., 2004). Prior case study research also highlighted the eminent role of supervisors of management accountants as a key promoter in their identity reconstruction, when supportive relationships are present (Goretzki & Messner, 2019; Goretzki et al., 2013; van der Steen, 2022).

The results of the full sample analysis reveal that most formal controls are periphery conditions. However, supplementary analyses indicate that the absence of formal controls lead to the absence of an identity fit, as well. Formal controls are therefore important for the initial realization of an identity fit. The interaction with informal controls then strengthens the legitimization by highlighting the social interactions that are important for an identity fit. In doing so, this study offers directions to include more informal controls in the management accounting research area (Evans & Tucker, 2015; Ferreira & Otley, 2009; Pfister & Lukka, 2019).

Next, this study finds differences in the configurations of controls regarding different career stages in the finance function. I conduct these sub-sample analyses as the primary activities of management accountants are found to differ depending on their hierarchical job positions (Horton et al., 2020) and may influence the configurations of support mechanisms for the identity reconstruction, as well. Junior management accountants are usually more involved in simpler tasks which are undertaken repeatedly without much involvement in strategic accounting decisions. Senior management accountants are usually responsible for the implementation of the accounting strategy and communicate to both lower and higher career stages. The high ranked functions (like the CFO) are involved in organizational level decisions and are responsible for the whole accounting department (Goretzki & Messner, 2019; Horton et al., 2020). To support the identity fit for junior management accountants, a combination of organizational level as well as group level mechanisms is required. Particularly, a combination of interactive controls, an organic organizational structure and a strong group culture support the identity fit. In case of senior management accountants and the leading functions only informal controls and the absence of certain formal controls like boundary controls respectively diagnostic controls are supportive core combinations to facilitate a high identity fit. These results are of high practical relevance in developing individual control packages for each career stage that benefit the specific needs of their different job responsibilities and attitudes (Horton et al., 2020). The sub-sample results also highlight the need to involve more informal controls on group level (Pfister & Lukka, 2019).

This study goes beyond previous research in several important ways. I identify which combinations of conditions support a high identity fit. The results address that support mechanisms for an identity fit do not work in isolation but are rather an interplay in triggering identity work on organizational and group level. The study further complements prior case study research by discussing the importance of positive relationships between management accountants and other organizational members to strengthen the management accountants' identity, especially the relationships to general managers (Byrne & Pierce, 2018; Morales & Lambert, 2013) and their supervisors (Goretzki et al., 2013; Taylor & Scapens, 2016). Thereby, I contribute to research on the identity reconstruction of management accountants

(Abrahamsson et al., 2011; Goretzki & Messner, 2019; Horton & Wanderley, 2018) and to research on formal and informal control configurations as a control package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Gerdin et al., 2019; Malmi & Brown, 2008; Pfister & Lukka, 2019).

I also add knowledge to the literature stream by introducing a new method of analysis. The use of fsQCA allows to show causal relationships within a large-N sample as most of the former studies rely on case study data (Goretzki et al., 2013; Lepistö et al., 2018; Morales & Lambert, 2013) or draw conceptional relationships (Horton & Wanderley, 2018).

This research is also of particular importance for various professions that are affected by role change. From the findings on management accountants' identity reconstruction, implications can also be made for other organizational functions that need to engage in identity work.

The reminder of the paper is organized as follows. The section "Conceptional Background and Theory Development" provides an overview of the current state of research regarding management accountants' identity fit and my suggestions of support mechanisms. The section "Method" discusses the research method and measurement of the variables. The analyses and results are presented in the "Results" section. Finally, discussions of the result, limitations, and further research avenues are provided in the section "Discussion and Conclusion".

19. Conceptional Background and Theory Development

19.1. Management Accountants' Work Roles

Management accountants' organizational roles are commonly observed as performing a service function that entails information analysis and decision support (Horngren et al., 2015). In most countries, their professional role is not officially regulated by professional associations but rather shaped within the organization or based on the occupational identity (Ahrens & Chapman, 2000).[10] Lately, related to current megatrends such as digitalization and the implications of AI, many academic studies as well as practitioners have noted changing organizational roles for management accountants (Byrne & Pierce, 2007; Goretzki et al., 2013; Horton & Wanderley, 2018; Järvenpää, 2007) often referred to a business partner role (Burns & Baldvinsdottir, 2005; Goretzki et al., 2013; Morales & Lambert, 2013).

[10] e.g. in the German speaking region (in contrast to the UK and USA), management accountants do not need a clearly defined training certificate to work in the occupation, instead "Controlling" (Management Accounting) has been part of the university curricula in business administration and consequently part of the general management education (Goretzki et al., 2013; Messner et al., 2008).

Research usually distinguishes between the traditional “bean counter” role and the more modern business partner role (Burns & Baldvinsdottir, 2005; Goretzki et al., 2013; Morales & Lambert, 2013). The “bean counter” role is typically associated with cost control, data accumulation, financial data analysis and reporting, as well as controlling operational managers with reference to their key financial objectives. On the other hand, the business partner role is associated with the assimilation of accounting information with indicators of non-financial performance to create value, facilitate greater efficiency or business improvement (Horton & Wanderley, 2018). Likewise, widely noted in the literature, this typology displays two extremes (Horton & Wanderley, 2018; Wolf et al., 2020). In practice, management accountants’ roles are often more complex. They usually operate in hybrid roles with dual or multiple functions, and their level of business involvement reflects multiple points on a continuum between lower and higher involvement (Horton & Wanderley, 2018).

Theoretically, the change to business orientation is seen as a positive development i.e. for managerial decision making (Byrne & Pierce, 2007; Goretzki et al., 2013; Hartmann & Maas, 2011; Wolf et al., 2015) or strategy formation (Erhart et al., 2017) as the intensified interaction between management accountants and general managers contribute to a proper interpretation and evaluation of financial information (Byrne & Pierce, 2007; Hartmann & Maas, 2011). At the same time, the role change can cause conflicts (Beehr & Newman, 1978; Katz & Kahn, 1978; Rizzo et al., 1970). On the one hand, the commitment of management accountants to meet the new business partner role requirements leads to increasing new competencies often without reducing old ones (Rouwelaar et al., 2021) and management accountants may not feel to be able to fulfil the new perceived expectations (Goretzki et al., 2013; Wolf et al., 2020). They may find themselves uncertain of their roles and their identity (Byrne & Pierce, 2007; Morales & Lambert, 2013; Puyou, 2018; Wolf et al., 2020) e.g. perceive a role conflict between supporting business-unit management processes and at the same time maintaining loyalty to financial compliance structures (Byrne & Pierce, 2018; Lambert & Sponem, 2012). Further, Goretzki and Messner (2019) display that the business partner identity often remains fragile and leaves management accountants with a continuing insecure feeling of still not being there.

On the other hand, in their traditional “bean counter” role, management accountants are often stigmatized by a negative image compared to other professions in an organization for their focus on costs and their seemingly suppression of innovation and creativity (Byrne & Pierce, 2007; Hiller et al., 2014). More business orientation might improve their image due to their involvement in value contribution (Wolf et al., 2020). Therefore, management accountants also struggle in positioning themselves between the business partner role, which is usually seen as “clean/good and prestigious” and their traditional role, with routine tasks seen as “dirty work”, that is not in line with the new role model (Hiller et al., 2014; Morales & Lambert, 2013; Parker

& Warren, 2017). According to Morales and Lambert (2013) following paradox happens: the more management accountants interact with the management (following the business partner role), the more "dirty work" is considered to be done by them. This leads to a role conflict related to underloaded expectations, where management accountants cannot express their full potential (Byrne & Pierce, 2007, 2018).

19.2. Roles and Identity

Generally, roles can be described as the outward specifications or expectations related to a position and they are closely connected to a person's identity (Chreim et al., 2007). The identity influences individual attitudes and behaviours (Ashforth & Mael, 1989; Chreim et al., 2007; Horton & Wanderley, 2018) and represents the answer to the question "Who am I?" (Pratt & Foreman, 2000). An identity fit refers to the match between an individual's values and skillsets and the requirements of a job (Kristof, 1996; May et al., 2004). When tasks and responsibilities match individual competencies, employees are more satisfied and engaged with their jobs (Kristof-Brown et al., 2005; May et al., 2004). Identity conflicts occur when the values, beliefs, norms and demands associated with one identity, conflict with those of another identity (Ashforth & Mael, 1989). This is the case when an individual's conceptualization of his or her professional role identity conflicts with an organization's collective vision of what this role entails (Goretzki et al., 2013; Horton & Wanderley, 2018). This discrepancy can result in low self-esteem (Taylor & Scapens, 2016). Hence, in conflicting situations the continuous rethinking of identities by individuals is necessary. Such processes depend on individual competencies and characteristics to attain a fit (Abrahamsson et al., 2011; Ahrens & Chapman, 2000; Horton & Wanderley, 2018; Morales & Lambert, 2013). Additionally, research has indicated that organizational logics and interactions with other actors are key factors to institutionalize new desired identities by legitimizing the external image of the identity (Chreim et al., 2007; Goretzki et al., 2013; Granlund & Lukka, 1998; Heinzelmann, 2018). This identity work is an on-going process of forming, repairing, maintaining, strengthening, or revising the identity to perceive an identity fit (Alvesson & Willmott, 2002).

19.3. Identity Work Through Own Sensemaking Activities

Individuals show stronger identification with positive and prestigious work identities that fulfil their basic needs for self-esteem and self-enhancement (Dutton et al., 1994). If there is a divergence, employees initiate own agency to alter their perceptions of their work identity (Ashforth & Kreiner, 1999) such as sensemaking (Weick, 1995). Sensemaking is the process through which individuals give meaning to ambiguous and complex situations like threats to the work identity (Maitlis & Christianson, 2014; Weick, 1995). Changes in organizational structures, roles and responsibilities create contradictions and paradoxes for members, that trigger sensemaking about what their jobs still entail (Lüscher & Lewis, 2008). Research suggests that workers in undesirable jobs derive meaning by reframing activities to transform repetitive and simple tasks to opportunities for development and improvement (Ashforth & Kreiner, 1999; Kreiner et al., 2006).

In case of the management accounting function, Morales (2019) indicated sensemaking when interviewing management accountants from various working contexts. They produced a highly standardised, coherent discourse on their profession, its values, and the general orientation by building "symbolic categories" to create a bridge between what they do and who they are. They usually played down the technical aspects and the routine tasks of their work and highlighted the strategic aspects of the interaction with the general management. Recent case study research by van der Steen (2022) shows how management accountants maintained their identity when after a merger the function was placed in a different building away from the headquarter. They made sense of their relocation by claiming their identity as independent advisors. However, sensemaking activities are not sufficient to change one's identity to retain an enduring identity fit. For a sustaining identity reconstruction, it also requires an outward legitimization of the identity by other actors (Goretzki et al., 2013; Järvenpää, 2009).

19.4. Identity Work through Institutionalization by Other Actors

Institutional theory understands identity change as institutional work (Lok, 2010). First, individuals need to be willing to reconstruct their identity (Abrahamsson et al., 2011; Goretzki et al., 2013). Besides, the external image of the identity needs to be accepted and legitimized by other organizational actors to facilitate the institutionalization of the identity reconstruction (Goretzki et al., 2013). Gaining legitimacy thus appears to be a key aspect when dealing with identity change (Goretzki et al., 2013; Järvenpää, 2009). Hiller et al. (2014) suggest that general managers can influence the prestige of professional groups in the company by providing more resources or more rights or by showing that they care about their opinion. Järvenpää (2007) observed several interventions by other actors that aim to support the institutionalization of the desired management accountants' identity such as the introduction of new accounting systems and accounting innovations, human resource management, the introduction of official value statements, as well as storytelling. Additionally, the existence of trusting relationships creates a sense of psychological safety that, in turn, reduces perceived image risk (Ashford et al., 1998). In this regard a trusting relationship to superiors is found to be helpful to strengthen management accountants aspired identities (Byrne & Pierce, 2018), e.g. when they are seen as role models (Goretzki et al., 2013; van der Steen, 2022).

19.5. Identity Fit Support Mechanisms

Taken the previous findings together, individuals can rely on different strategies to perceive an identity fit. They can use sensemaking activities to reframe the dirty aspects of their jobs (Lepistö et al., 2018; Morales, 2019). The reframing process, however, does not lead to an actual change of the identity, instead individuals accept their identity and play down certain undesirable features while focusing on the aspirational aspects (Goretzki & Messner, 2019; Morales & Lambert, 2013). To realize actual change and to institutionalize a desired identity (to gain a fit), the reconstruction of the undesired current identity needs to take place. Individuals need to engage in identity work to gain legitimacy by other actors who accept the desired identity. This study focuses on management controls and aims to investigate which different configurations of formal and informal controls are sufficient for facilitating the identity fit of management accountants in the process of identity reconstruction.[11] Management controls include all devices and systems that managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives (Malmi & Brown, 2008) which also involves support for employee well-being. Over the time, organizational behaviour research has introduced diverse mechanisms that are positively related to an identity fit (Alvesson & Willmott, 2002; Ashforth & Mael, 1989; Dutton et al., 1994; Dutton et al., 2010; May et al., 2004). The management accounting research also just begun to identify mechanisms that initiate identity work to foster an identity fit (Goretzki & Messner, 2019; Goretzki et al., 2013; Järvenpää, 2007; Taylor & Scapens, 2016). These different mechanisms that have been found to be relevant independently may also contribute to an identity fit in a configuration. Some scholars see the use of formal and informal controls as a package to be effective where both control categories are used simultaneously within an organization (Bedford et al., 2016; Evans & Tucker, 2015; Ferreira & Otley, 2009; Gerdin et al., 2019; Malmi & Brown, 2008). These combinations are even able to stretch positive outcomes of formal control systems (Pfister & Lukka, 2019).

I apply the package perspective of the use of management controls (Bedford, 2020; Malmi & Brown, 2008). Therefore, the mechanisms used in this study are diverse organizational level (formal) and group level (informal) controls which can be applied loosely connected at different times and in different extents, as Malmi and Brown (2008) argued that

[11] I focus in this study on management accountants' individual behavioural effects. Thereby, management accountants as employees in a firm are exposed by the applied management controls (rather than in their function of developing management controls). Thanks to Arthur Posch for this valuable comment.

there are diverse tools, systems and practices that managers have available to formally and informally direct employees. In doing so, the determined typology (as the one presented in this study) cannot be too narrow as there is a risk that some controls may go unnoticed and existing links to other controls may obscure the research findings (Malmi & Brown, 2008, pp., p. 295).

Formal controls on organizational level are diagnostic, interactive, boundary and beliefs systems, that have already been studied in diverse management accounting contexts (Müller-Stewens et al., 2020; Speklé et al., 2017; Widener, 2007). I also regard the organizational structure as well as job clarity as formal controls. These controls have been referred as administrative controls by Malmi and Brown (2008) and are also mechanisms that managers can use and alter in the process of control. Informal controls on group level are less well-defined practices, social relationships, links or loose connections between individuals that facilitate free-flowing open and flexible communication, structures and decision processes (Chenhall et al., 2010). Recent management control research begun to examine informal controls that incorporate with formal management controls (Evans & Tucker, 2015; Pfister & Lukka, 2019). I include group culture, leader-member-relationship quality, and psychological safety as those informal mechanisms that rely especially on leadership practices. A detailed overview of the selected management controls with evidence to be positively related to an identity fit from prior literature is shown in Table 8.

The package perspective builds upon configuration theory (Bedford, 2020). Therefore, a configurational approach is applied in this study to indicate relevant controls (Ragin, 2014; Ragin & Fiss, 2008). In general, configuration theory assumes that multiple combinations of antecedent conditions are equally effective in achieving a desired outcome (Greckhamer et al., 2018; Pappas & Woodside, 2021).

I propose that specific configurations of the aforementioned management controls facilitate the management accountants' identity fit. Whereas formal controls legitimize the external image of the management accountant in the organization, informal controls encourage its enactment on group level. This is because, in addition to the institutionalisation of the management accountant's image, identity work takes place primarily through interaction with other organizational members, especially superiors (Goretzki & Messner, 2019; Parker & Warren, 2017; van der Steen, 2022). I further assume that the support mechanisms have interaction effects, which is illustrated by the double arrow between the controls in the conceptual model illustrated in Figure 7.

Table 8 Identity-Fit Support Mechanisms

	Support mechanism	**Explanation**	**Authors**
Organizational level	Diagnostic control use	Diagnostic controls guide behaviours and provide feedback to facilitate employee learning (single loop). They are intended to give employees structure that influence feelings of competence. Thereby, the use of diagnostic controls reduces role ambiguity by setting clear goals.	Marginson et al. (2014), Speklé et al. (2017), Simons (1995)
	Interactive control use	Interactive control use expands opportunity-seeking and learning throughout the organization and helps to reduce role ambiguity through face-to-face interactions (double loop) and encourage discussion and debate.	Byrne and Pierce (2018), Marginson et al. (2014), Simons (1995), Widener (2007)
	Boundary control use	Boundary controls provide structure and set requirements on management accountants behaviour to focus the attention to critical operations which prevent overloaded expectations regarding their role.	Adler and Chen (2011), Byrne and Pierce (2018)
	Beliefs control use	Beliefs controls signal core values to management accountants, in order to inspire and motivate them to take initiative in searching for opportunities, making decisions, and devising solutions to problems consistent with the organization's values and encourage self-determination.	Deci (1971), Mundy (2010), Simons (1995)
	Organizational structure	Continuum from mechanic to organic structures whereas mechanistic structures are characterized by centralized decision making and authority. Organic structures are characterized by decentralized decision making, flexibility and self-determination.	Bedford et al. (2016), Covin et al. (2001), Deci (1971), Lepistö et al. (2018)
	Job clarity	Clear expectations about tasks have an important impact on individual identities. A balance towards the desired identity is mostly regulated by upper echelons that need to clarify and legitimize the tasks of the management accountant.	Byrne and Pierce (2018), Gartenberg et al. (2019), Goretzki et al. (2013), Järvinen (2009)
Group level	Group culture	Co-worker related norms are most effective to influence employees' actions. The culture within organizational groups is especially important as norms within groups tend to govern behaviour, attitudes, and the emotional dimensions of work.	Byrne and Pierce (2007), Kahn (1990), Lepistö et al. (2018), May et al. (2004)
	Leader-member relationship quality (LMX)	Individuals feel safer to engage themselves more fully, try out novel ways of doing things, discuss mistakes and learn from these behaviours when they are in supportive relationship with their supervisors.	Byrne and Pierce (2018), Goretzki and Messner (2019), May et al. (2004)
	Psychological safety	Psychological safety is defined as the feeling to be able to show oneself without fear of negative consequences to self-image, status, or career (in a group).	Ashford et al. (1998), Edmondson (1999), Kahn (1990), May et al. (2004), Morales and Lambert (2013)

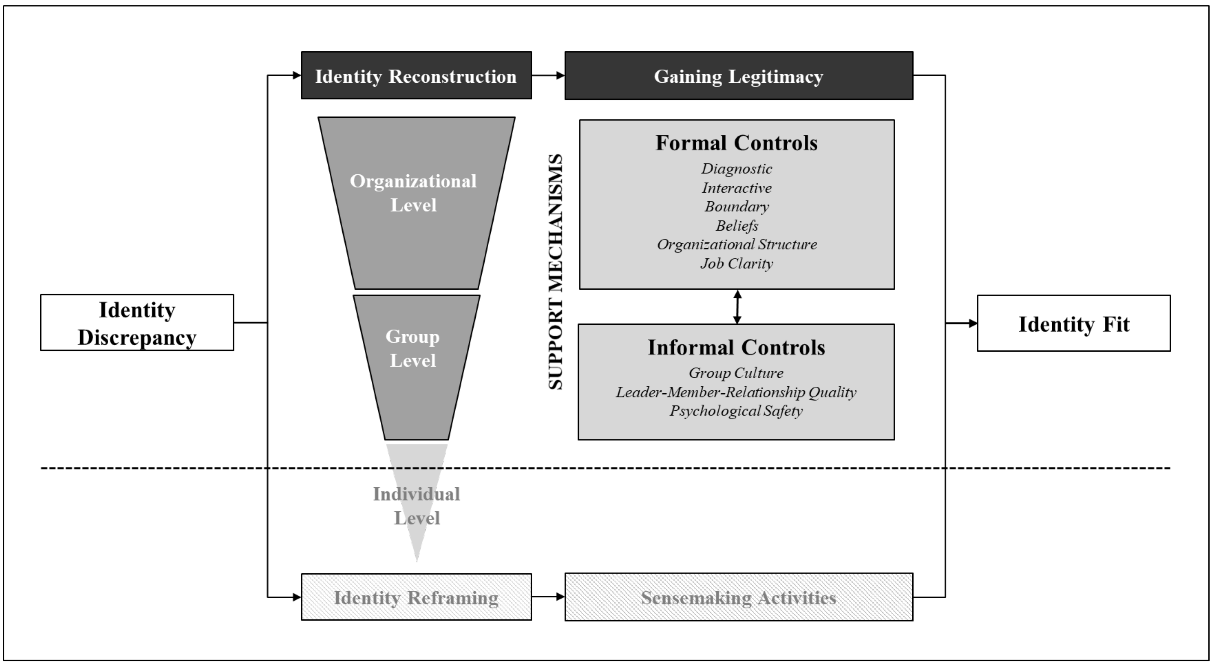

Figure 7 Identity Fit Model

20. Method

20.1. Data and Method

FsQCA is employed to determine which configurations of mechanisms contribute to an identity fit for management accountants. QCA, which was first introduced by Charles Ragin in 1989, is a method of analysing multiple cases to identify "recipes" of causal conditions associated with case membership in an outcome set (Ragin, 2008).[12] Data for this study was collected with a cross sectional survey. A random selection of 2,500 firms meeting the criteria were identified from the database Orbis (van Dijk, 2020). All firms are situated in Germany, the German speaking part of Switzerland, Liechtenstein, and Austria. These countries have been chosen as they share a common language and similar cultural and institutional backgrounds which prevent potential biases caused by different cultural characteristics or distinct institutional settings (Hartmann, 2005). All firms are included with a minimum of 100 employees and EUR 10 million in revenues. Public administrations, banks, and insurance companies are excluded. Randomly one management accountant per firm was contacted via a personal message on a career network website.[13] The online questionnaire tool Unipark (UNIPARK, 2020) was used and the survey was distributed by e-mail.[14] Data was collected

[12] QCA combines qualitative and quantitative approaches, but it differs substantially from traditional methods of quantitative analysis that are usually variance-based. Instead, QCA is an asymmetric data analysis technique based on Boolean logic and determines causal paths (Ragin, 2014). QCA is useful for inductive, deductive, and abductive approaches (Greckhamer et al., 2018; Pappas & Woodside, 2021) and has been used in diverse research fields including in at least two management accounting studies (Bedford et al., 2016; Erkens & Van der Stede, 2015). Although, it was developed to analyse small numbers of cases, the method is also frequently applied for large number samples of archival or survey-based data (Fiss, 2011; Greckhamer, 2016; Greckhamer et al., 2013). To indicate the membership of a condition in an outcome set, two types of QCA are usually used - crisp set QCA (csQCA) and fuzzy set QCA (fsQCA). In csQCA, set memberships are evaluated in a dichotomous (''crisp'') manner. Cases are classified as either ''fully in'' (1) or ''fully out'' (0) of the sets (Greckhamer et al., 2013). FsQCA, which is used in this study, examines the relative importance of conditions (in this case mechanisms of identity fit) by calculating the degree of membership in a range of 0 to 1 and gives the opportunity to gain deeper and richer insights into the data (Fiss, 2011; Pappas & Woodside, 2021; Ragin, 2000; Ragin & Fiss, 2008). Further, fsQCA captures the three elements of causal complexity - conjunction, equifinality, and asymmetry (Ragin, 2008). Conjunction means that conditions may not impact outcomes in isolation from one another. Equifinality implies that alternative combinations of conditions may be linked to an outcome. Asymmetry means that the conditions leading to the presence of an outcome of interest may be quite different from those leading to the absence of the outcome (Greckhamer, 2016). This view is different to the common correlational understanding of causality, in which causal symmetry is assumed and an inverse model would lead to a change of the sign of the coefficient (Fiss, 2011). FsQCA requires comprehensive knowledge of the examined variables (conditions and outcome) as well as of the underlying theory and context. Such knowledge is used for decisions throughout the analysis which includes data calibration, simplifying the multiple solutions, and interpreting the results (Pappas & Woodside, 2021).

[13] I searched for employees of the target firms and filtered for management accountants on that website. I did not specify any sub profession in the management accounting field as I aim to give a general picture of the management accounting profession.

[14]The cover letter of the questionnaire explained the relevance of the study and emphasized the anonymity and privacy of the respondents. Contact information of the corresponding researchers was provided to give the opportunity to ask questions or to give feedback if desired. The survey questions have been randomized. To reduce complexity of the study only a limited number of items were displayed on the screen at a time and a progress bar

from April to August 2020. In total 295 surveys (11.8 percent) returned. Eighteen of the completed surveys came from non-profit firms and were excluded from this study. This leaves 277 useable observations. 76 percent of the participants are male, 24 percent are female, 65 percent are below the age of 40 years and 35 percent are 40 years old or older. Further, 33 percent are in a leading position and 67 percent are non-leading management accountants. Demographic information is displayed in Table 9.

Three checks for non-response bias are conducted using Mann-Whitney-U-Tests to address the issue of the low response rate of this survey and to check the robustness of the sample (Speklé & Widener, 2018; Van der Stede et al., 2005). First, the construct means between the first and last 20 percent of received surveys were compared with no significant differences found ($p > 0.05$). Second, the size and sales of respondent firms were compared to the sample population. No significant differences were identified ($p > 0.05$). Third, respondents were classified as early or late (reminder E-mail was sent) and means were compared. No significant differences ($p > 0.05$) between early and late respondents were found.

Moreover, I checked for common method bias (CMB), as dependent and independent variables are measured by a common source (Podsakoff et al., 2003). I used procedural and statistical means to control for CMB (Chang et al., 2010; Podsakoff et al., 2003; Podsakoff et al., 2012). In terms of procedural means, (1) the survey instrument was extensively pre-tested to assess consistency in interpretation and to remove ambiguity in item wording.[15] (2) I guaranteed complete anonymity of the respondents (Chang et al., 2010) and (3) I psychologically separated the measurement of the dependent and independent variables by using buffer items in the questionnaire as a proximal separation (Podsakoff et al., 2012).

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indicated the headway of the participant. A few incentives like an executive summary as well as free participation of an executive education seminar at the university were offered to increase the response rate. In case of no response to the first invite, a reminder e-mail was sent ten days after the first contact.

[15] In developing the survey, various pretests have been executed: (a) I pretested the survey with seven academics in the management control discipline to ensure correspondence between my theory and the measurement of the constructs (content validity-feedback interviews) and (b) I pretested the survey with three practitioners to ensure a general understanding of survey items, and to remove any undue complexity in item wording. Furthermore, as I translated the questionnaire into German language, I used back-translation to compare translations with the original text for quality and accuracy of the meaning between the source and target texts by using a separate independent translator (who had no knowledge of or contact with the original text).

Table 9 Demographic Data

	n	%	Mean	Min.	Max.	Std. Dev.
Panel A: Number of employees						
100 - 250	52	18.77%				
250 - 499	75	27.08%				
500 - 999	44	15.88%				
1000 - 2499	46	16.61%				
2500 +	60	21.66%				
Total	277	100.00%				
Panel B: Industry description						
Consumer goods	20	7.22%				
Machinery and plant engineering	29	10.47%				
Chemicals and allied products	15	5.42%				
Electrical engineering and equipment	14	5.05%				
Automotive manufacturing	29	10.47%				
Metal production and fabricated metal products	16	5.78%				
Other manufacturing industry	30	10.83%				
Construction	6	2.17%				
Retail	24	8.66%				
Transportation and communications services	10	3.61%				
Other services, media and IT	22	7.94%				
Other	62	22.38%				
Total	277	100.00%				
Ownership						
Family-owned firms	102	36.82%				
Non-family firms	175	63.18%				
Total	277	100.00%				
	n	%	Mean	Min.	Max.	Std. Dev.
Panel C: Sample statistics						
Gender						
Male	210	75.81%				
Female	67	24.19%				
Total	277	100.00%				
Age						
20 - 30	56	20.22%				
30 - 40	123	44.40%				
40 - 50	64	23.10%				
50 - 60	33	11.91%				
60+	1	0.36%				
Total	277	100.00%				
Tenure						
years in the current function	-	-	8.33	1	30	6.81
years in the current company	-	-	5.64	1	35	5.71
years with the current manager / superior	-	-	3.35	1	22	3.12
Total	-	-	-	-	-	-
Leading function (Head of Controlling and CFOs)	92	33.21%	(Thereof 21 senior MAs)			
Non-leading function (junior and senior MAs)	185	66.78%				
Total	277	100.00%				

Note: Percentages may not add up to 100% due to rounding errors.

In term of statistical means, I conducted a Harman's single-factor test which suggest that a CMB is not a significant concern. Additionally, I complemented the Harman's single-factor test by the unmeasured latent method factor technique and the correlation-based marker variable method as two additional methods following the recommendations of Podsakoff et al. (2012). For the former, I added an additional latent method factor to the model (similar to the Harman's single factor test). Then, I allowed all the manifest variables to load on both their theoretical constructs as well as on the latent method factor to assess the amount of variance in the measurement model that is caused by measuring all of the items using the same survey instrument (Braumann et al., 2020). The results of this procedure indicated that the model fit was improved. The variance explained by the newly added latent variable amounted to 0.30, which is below the recommended cut-off value of 0.50 (Hair et al., 2014; Podsakoff et al., 2003). By employing the marker variable method, I included respondents age as a marker variable. The variable was not significantly corelated to any of the variables in the model (Podsakoff et al., 2012). The partial correlations between the substantive variables of interest remained statistically significant while controlling for the marker variable (Podsakoff et al., 2012).

20.2. Construct Measurement

The variables for this study are based on previously validated, reliable constructs. Each variable has been measured using multiple items. Refinements were made in case of reverse coded items which have been rephrased, in order to reduce complexity of the questionnaire following suggestions of Dillman et al. (2014). The items are measured on established and validated 7-point Likert scales. All scales were anchored by 1 "strongly disagree" to 7 "strongly agree" unless reported otherwise. Means are used to create all constructs that are further used for the fsQCA analyses. As fsQCA does not test for the robustness of the measures, I empirically establish construct validity using the tests suggested by Hair et al. (2014). The validity of reflective constructs is assessed through factor analysis, correlation analysis, and Cronbach's Alpha. The factor analysis is conducted with maximum-likelihood extraction and oblique rotation to provide support for unidimensionality for each construct. All Cronbach's alpha coefficients (ranging from 0.64 to 0.95) were higher than the minimal recommended value of 0.60, thus showing high internal consistency and reliability (Hair et al., 2014). Descriptive statistics and construct validity for all reflective multi-item constructs are shown in Table 10.

Table 10 Descriptive Statistics and Construct Validity of Reflective Constructs [a,b,c,d,e]

	n	Min.	Max.	Mean	Std. Dev.	Load-ing	Cronbachs Alpha
IDFIT	277	-2.69	1.49	0.00	1.00	(0.79)	0.94
Job fits self-image	277	1	7	4.97	1.47	**0.89**	
Job gives favored identity	277	1	7	5.10	1.41	**0.89**	
Work is satisfying	277	1	7	4.80	1.55	**0.92**	
Job fits future self-image	277	1	7	4.49	1.63	**0.85**	
DIAG	277	-3.21	1.33	0.00	1.00	(0.78)	0.95
Identification of critical performance variables	277	1	7	5.14	1.45	**0.85**	
target setting for critical performance variables	277	1	7	5.22	1.41	**0.89**	
Monitor progress toward critical performance targets	277	1	7	5.21	1.38	**0.93**	
Provide information to correct deviations from present performance targets	277	1	7	5.27	1.48	**0.86**	
Review key areas of performance	277	1	7	5.38	1.38	**0.88**	
STRUC	277	-1.96	2.08	0.00	1.00	(0.48)	0.80
Typical communication of control information is very open	277	1	7	4.16	1.58	**0.35**	
Degree of accessibility of operational information is free	277	1	7	4.01	1.56	**0.64**	
Content of work-related communication between top mgmt. and subordinates is information and idea sharing, consultative, advice giving	277	1	7	3.52	1.60	**0.82**	
Operating mgmt philosophy favours emphasis on giving the most say to the expert in a given situation even if this means bypassing formal line authority	277	1	7	3.38	1.50	**0.78**	
Operating mgmt philosophy favours emphasis on initiative and adaptation to the local situation	277	1	7	3.68	1.44	**0.77**	
CLARITY	277	-2.20	1.44	0.00	1.00	(0.42)	0.64
Clear expectations of management	277	1	7	4.92	1.48	**0.56**	
Management has a clear view of goals	277	1	7	4.66	1.65	**0.86**	
Availability of resources and equipment	277	1	7	5.00	1.59	**0.44**	
GROUPCULT	277	-2.99	1.28	0.00	1.00	(0.56)	0.78
A team atmosphere describes the work environment	277	1	7	5.3	1.48	**0.67**	
Loyalty is important in the work environment	277	1	7	5.53	1.37	**0.78**	
Morale is important in the work environment	277	1	7	4.98	1.46	**0.79**	
LMX	277	-2.65	1.30	0.00	1.00	(0.72)	0.93
Cordial	277	1	7	4.48	1.60	**0.79**	
Friendly	277	1	7	5.29	1.55	**0.84**	
Open	277	1	7	5.26	1.63	**0.88**	
Trusting	277	1	7	5.25	1.72	**0.92**	
Close	277	1	7	4.19	1.66	**0.80**	
PSYCHSAF	277	-3.54	1.02	0.00	1.00	0.61	0.94
Not afraid to be oneself at work	277	1	7	5.86	1.29	**0.72**	
Not afraid to express own opinions at work	277	1	7	5.68	1.31	**0.98**	
A friendly environment at work	277	1	7	5.44	1.38	**0.6**	

a Extraction method: Maximum-Likelihood.
b Rotation method: Oblimin.
c The variance extracted for each factor analysis is reported in parentheses in the top line of each table.
d Bold indicates the loadings of the items that are used for the final measurement of the construct (> 0.30).
e See Appendix 1 for complete wording of the items.

The validity of formative constructs is assessed through principal component analysis (PCA), and variance inflation factors (VIFs). PCA reveals all weights are positive and above 0.20. Very low or negative weightings can indicate that items are unrelated to the construct of interest, while highly correlated items suggest that multiple items are tapping into the same facet of the construct (Hair et al., 2014). Multicollinearity is examined through calculation of VIFs. The highest VIF is 4.96, which is below the general tolerance of 10 (Hair et al., 2014).

To apply fsQCA, several steps have to be conducted. First, constructs have to be coded into conditions. For example, "identity fit" is a construct that can be coded into the condition "high identity fit", as the presence of the condition "high identity fit" is of interest in this study. Similarly, I code the rest of the variables (Pappas & Woodside, 2021). Further, nine conditions that may explain high identity fit are used in this study. This is in line with Ragin's (2008) recommendations to limit the number of causal conditions to maximal ten conditions, as each additional condition doubles the number of logically possible configurations which also increases the difficulty of interpreting the findings (Greckhamer et al., 2013).

Second, the conditions need to be transformed into calibrated sets (fuzzy sets) regarding three thresholds of membership: full membership (1), full non-membership (0), and the crossover point (0.5). The crossover point is the point of maximum ambiguity (i.e., fuzziness) in the assessment of whether a case is more in or out of a set (Fiss et al., 2013; Ragin, 2008). This study applies the direct method of calibration (Ragin, 2008). A 0.001 constant has also been added to all fuzzy scores to avoid theoretical difficulties of analysing sets with membership scores of exactly 0.5 (Fiss, 2011; Greckhamer, 2016). For Likert scales, previous studies often used the endpoints of the scale to indicate the membership i.e., 7 (full membership), 1 (full non-membership) and the midpoint 4 (crossover point) as thresholds (e.g., Fiss, 2011; Greckhamer, 2016). I followed the practice unless I found evidence to change the calibration parameters (Bedford et al., 2016; Greckhamer et al., 2018; Pappas & Woodside, 2021).

Identity Fit: Identity fit (IDFIT) is the match between an individual's self-concept and his/her organizational role. It is measured through a reflective measurement model that was derived from May et al. (2004). Factor analysis shows loadings >0.85 of all items on a single factor (Var. 79%, $\alpha = 0.94$).

Diagnostic systems: To measure diagnostic control use (DIAG) five items are used through a reflective measurement model. The items scale on a 7-point Likert Scale from 1 "very low extent" to 7 "very high extent". They are derived from Bedford (2015) and were defined by Widener (2007) and Henri (2006).

Factor analysis shows loadings >0.85 of all items on a single factor (Var. 78%, $\alpha = 0.95$). To create a measure of membership in the set high diagnostic control use, I coded membership as fully out for a Likert score of 3 and fully in for a Likert score of 7. The crossover point is set at a Likert score of 5. I decided to use these calibration parameters as the mean (5.24) and standard deviation (1.29) indicate that almost all firms in the sample place a high emphasis on diagnostic controls which makes it more meaningful to adjust the calibration (Bedford et al., 2016).[16] Theoretically, the high emphasis on diagnostic controls is plausible as this control system is widely used to provide structure and to monitor employee' behaviour (Simons, 1995).

Interactive systems: Interactive control use (INTER) is based on the formative measurement model which is derived from Bedford (2015) and was developed by Bisbe et al. (2007). The construct is measured across five items that scale on a 7-point Likert Scale from 1 "very low extent" to 7 "very high extent". The five dimensions are (1) intensive use by top management, (2) intensive use by operating managers, (3) face-to-face challenge and debate, (4) focus on strategic uncertainties, and (5) non-invasive, facilitating, and inspirational involvement (Bedford, 2015).

Boundary systems: Boundary control use (BOUND) is measured across four items that are derived from Bedford (2015) and are based on a formative measurement model. The items scale on a 7-point Likert Scale from 1 "very low extent" to 7 "very high extent". Bedford (2015) referred on analyses of Simons (1994, 1995) who reveals that boundary systems contain four constitutive dimensions: (1) definition of appropriate conduct, (2) limitation of search and experimentation, (3) they are actively communicated by top management, and (4) use of sanctions to subordinates who engage in activities outside stated boundaries irrespective of the outcome. According to Bedford (2015), these attributes are defining facets of the construct rather than manifestations of a latent construct.

Beliefs system: Beliefs control use (BELIEF) is measured with four questions on a 7-point Likert Scale from 1 "very low extent" to 7 "very high extent" based on a formative measurement model derived from Bedford (2015). Some of the items are based on those used by Widener (2007) other additional items were created based on the descriptions of Simons (1994, 1995). Previous studies indicate that beliefs systems are defined by (1) the formal documentation of core values of the firm, (2) the active communication of core values (3) the commitment of core values and firm objectives, and (4) the inspiration and guidance of core values in the search for new opportunities (Simons, 1994, 1995).

Organizational Structure: Organizational structure (STRUC) is measured as the decentralization of decision rights as a reflective model. The measure is derived from Bedford et al. (2016) and consists of five questions on a 7-point Likert Scale which reflects a continuum from mechanistic to organic organizational structure. All items load significantly (>0.35) on a single factor (Var. 48%, $\alpha = 0.80$).

[16] Similar high emphasis on diagnostic controls has been found in previous empirical studies, as well (e.g., Heinicke et al., 2016; Kruis et al., 2016; Speklé et al., 2017; Widener, 2007).

Job Clarity: Job clarity (CLARITY) is the perception of working in an environment where management provides significant clarity around direction, job responsibilities, and resources. It is measured through a reflective measurement model that was derived from Gartenberg et al. (2019). Factor analysis shows loadings >0.44 of all items on a single factor (Var. 42%, α = 0.64).

Group Culture: Group culture (GROUPCULT) is measured through a reflective measurement model that was derived from Kruis et al. (2016) and Heinicke et al. (2016). Factor analysis shows loadings >0.67 of all items on a single factor (Var. 56%, α = 0.79). To calibrate high group culture, I used the thresholds 7 for full membership, 3 for full non-membership, and the crossover point is 5 as the mean (5.27) and standard deviation (1.20) indicate a generally higher emphasis on cohesion, teamwork, and emphasis on team norms.

Leader-member relationship quality: Leader-member relationship quality (LMX) is derived from Ashford et al. (1998). It refers to the relationship towards ones' superior as cordial, friendly, open, trusting, and close and scales on a 7-point Likert Scale from 1 "not at all descriptive of our relationship on average" to 7 "very descriptive of our relationship on average".[17] All items load significantly (>0.79) on a single factor (Var. 72%, α = 0.93).

Psychological safety: Psychological safety (PSYCHSAF) is developed by Kahn (1990). The construct is measured through a reflective measurement model. Factor analysis shows loadings >0.60 of all items on a single factor (Var. 61%, α = 0.94). To create a measure of membership in the set of high psychological safety, I coded membership as fully out for a Likert score of 3 and fully in for a Likert score of 7. The crossover point is at a Likert score of 5. I decided to use these calibration scores as the mean (5.66) and standard deviation (1.12) indicate that a generally higher perception of psychological safety.

As this study is case-oriented instead of variable-oriented, control variables are not part of the analysing method (Greckhamer et al., 2013; Ragin, 2000, 2008). All construct measures are illustrated in Appendix 1 of this study. The descriptive statistics and bivariate correlations are presented in Table 11.

[17] We removed "distant" from the original scale.

Table 11 Descriptive Statistics and Bivariate Correlations (Pearson)

Variable	Mean	Std Dev.	1	2	3	4	5	6	7	8	9
1. IDFIT	4.84	1.39									
2. DIAG	5.24	1.29	0.291***								
3. INTER	4.35	1.20	0.381***	0.646***							
4. BOUND	3.94	1.22	0.231***	0.348***	0.443***						
5. BELIEF	4.27	1.50	0.262***	0.423***	0.537***	0.561***					
6. STRUC	3.75	1.15	0.326***	0.157***	0.327***	0.163***	0.263***				
7. CLARITY	4.86	1.20	0.462***	0.441***	0.593***	0.272***	0.466***	0.351***			
8. GROUPCULT	5.27	1.20	0.569***	0.372***	0.374***	0.201***	0.299***	0.194***	0.418***		
9. LMX	4.89	1.44	0.551***	0.220***	0.297***	0.153*	0.238***	0.373***	0.468***	0.460***	
10. PSYCHSAF	5.66	1.12	0.561***	0.246***	0.301***	0.079	0.200***	0.363***	0.475***	0.478***	0.567***

Note: This table shows estimated correlations between constructs. ∗: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$ (two tailed).

20.3. Data Analysis

The next step is to insert the calibrated data into the truth table. The truth table is a chart with 2^k rows (k=number of included sets) which displays all logically possible combinations of the included theoretical attributes (Greckhamer et al., 2013). In this case, each support mechanism (formal and informal control) is allocated to a single row based on its fuzzy set membership scores in high identity fit. After the allocation, the truth table assesses which combinations lead to the outcome and which do not. This requires the specification of minimum frequency and consistency thresholds (Fiss, 2011; Greckhamer et al., 2018).

Frequency refers to the number of cases that need to be observed in a truth table row to be considered valid empirical evidence. A higher frequency threshold means that each configuration refers to more cases in the sample. However, this also reduces the percentage (i.e., coverage) of the sample that is explained by the retained configurations (Pappas & Woodside, 2021).[18] For samples larger than 150 cases the frequency threshold should be set at three or higher (Fiss, 2011). The sample size of this study is 277, therefore the threshold is set at three and all combinations with a smaller frequency are removed from further analyses.

Once configurations with low frequency are removed, the truth table is sorted by raw consistency. Consistency refers to the degree to which cases correspond to the set-theoretic relationships expressed in a solution and it is similar to the p-value in regression analysis (Bedford et al., 2016; Fiss, 2011). Regardless of the sample size, Ragin (2008) has suggested a minimum consistency threshold of 0.80. In this study a consistency threshold of 0.90 is selected. All analyses are conducted with the fs/QCA 3.0 software package (Ragin & Davey, 2016).

21. Results

21.1. Main Analysis

FsQCA computes three solutions. These solutions are complex solutions, parsimonious solutions, and intermediate solutions regarding the involvement of simplifying assumptions, called counterfactuals (Fiss, 2011; Greckhamer, 2011, 2016; Pappas & Woodside, 2021). The complex solution excludes counterfactual cases and presents all the possible combinations of conditions when traditional logical operations are applied. As this solution can be very large, the interpretation of the configurations of conditions is rather difficult and usually impractical (Greckhamer, 2011; Pappas & Woodside, 2021). For this reason, the solutions are simplified into parsimonious and intermediate solution sets which integrate counterfactuals. Parsimonious

[18] On the other hand, a lower frequency threshold increases the coverage of the sample, although each combination refers to fewer cases in the sample (Pappas & Woodside, 2021).

solutions include all counterfactuals and present the most important conditions which cannot be left out from any solution. These are called "core conditions" (Fiss, 2011) and are identified automatically by the software (Pappas & Woodside, 2021). The intermediate solution is obtained when performing counterfactual analysis on the complex and parsimonious solutions including only theoretically plausible counterfactuals using existing theoretical knowledge (Greckhamer, 2011; Ragin, 2008). The researcher chooses if one of the conditions should be considered as "present", "absent", or "present or absent", in explaining the outcome. The intermediate solution is part of the complex solution and includes the parsimonious solution (Fiss, 2011; Pappas & Woodside, 2021). A combination of intermediate and parsimonious solutions is reported in this study which has become best practice in QCA research (e.g., Bedford et al., 2016; Fiss, 2011; Greckhamer et al., 2018; Greckhamer et al., 2013). However, easy counterfactuals are not included. In other words, in this case complex and intermediate solutions are the same.

To receive the results, an algorithm based on Boolean algebra is applied by the software. This determines the commonalities among the combinations that explain the outcome variable and leads to conditions being identified as sufficient and necessary to explain the outcome or insufficient on their own but necessary parts of the solution.[19] The conditions can be present or absent in a solution, or conditions can be redundant, called "do not care" conditions. Core elements indicate a strong causal relationship with the outcome, and peripheral elements indicate a weaker relationship (Fiss, 2011; Pappas & Woodside, 2021). The results that follow are presented by using the generally accepted notation where solid circles (●) refer to the presence of a condition and crossed-out circles (⊗) designate its absence (Ragin & Fiss, 2008).[20] Large circles indicate core conditions that occur in parsimonious and intermediate solutions, and small circles refer to peripheral conditions that occur in intermediate but not parsimonious solutions. Blank spaces in a solution indicate a "do not care" situation (Fiss, 2011; Greckhamer, 2016). The solutions of the main analysis are shown in Table 12.

[19] called INUS conditions - insufficient but necessary part of a condition which is itself unnecessary but sufficient for the result (Fiss, 2011).

[20] In case of organizational structure solid circles (●) refer to the use of organic structural controls while crossed-out circles (⊗) refers to the use of mechanistic structural controls (Bedford et al., 2016).

Table 12 Results of fsQCA for High Identity Fit

	Solutions			
Organizational level mechanisms	1	2	3a	3b
Diagnostic systems	●	●	⊗	●
Interactive control systems	●	●	⊗	●
Boundary systems	●	●	⊗	●
Beliefs systems	●	●	⊗	⊗
Organizational structure (organic)	●	●	●	●
Job clarity	⬤	●	⊗	⊗
Group level mechanisms				
Group culture	●	⬤	⬤	⬤
Leader-member-relationship quality	⬤		●	●
Psychological safety		⬤	⬤	⬤
Consistency	0.92	0.92	0.92	0.94
Raw coverage	0.42	0.41	0.34	0.35
Unique coverage	0.04	0.04	0.05	0.01
Overall solution consistency		**0.88**		
Overall solution coverage		**0.53**		

Solutions are grouped by their core conditions. Set theoretic consistency and coverage measures are also reported (Greckhamer et al., 2018; Ragin, 2008). The overall coverage describes the extent to which the outcome of interest may be explained by the configurations and is comparable with the R-square statistics reported in regression-based methods (Pappas & Woodside, 2021). The higher a configuration's coverage, the more empirically relevant is a configuration for reaching the outcome of interest (with zero being the lowest and one being the highest possible coverage score). The coverage of the overall solution is 0.53, indicating a solid portion of high identity fit membership (Ragin, 2008). Further, the higher a configuration's consistency, the stronger is the evidence for a configuration being related to high identity fit. All configurations exhibit high consistency values of at least 0.92, with the overall solution consistency at 0.88 and indicate that the configurations are strongly related to high identity fit (Ragin, 2008).

The results of the fsQCA show four equally effective configurations of identity fit support mechanisms. The first configuration combines the presence of high job clarity and high leader-member-relationship quality, along with the complementary conditions of high diagnostic, interactive, beliefs, boundary controls and an organic organizational structure as formal controls. High group culture is a complementary present informal control condition. Psychological safety is a redundant condition in the first solution. The second configuration combines the presents of a high group culture together with high psychological safety as core conditions. The presence of all formal controls supports the configuration of the core conditions. The combinations of high group culture and high psychological safety are core conditions in the solutions 3a and 3b, as well. The solutions only differ regarding the absence or presence of certain formal controls.

21.2. Subsample Analysis

Several subsample analyses are conducted to get a better understanding of how the different identity fit support mechanisms work regarding the levels of seniority of management accountants. The primary activities of management accountants are found to differ depending on their hierarchical job position (Horton et al., 2020) which also influences the need for different skills (Rouwelaar et al., 2021). This might influence the configurations of support mechanisms for the identity reconstruction, as well. Junior management accountants are usually more involved in simpler nature of the tasks undertaken repeatedly without much involvement in strategic accounting decisions (e.g., transaction processing, recording, and basic reporting including purchase to pay, order to cash, and record to report processes). Senior management accountants, usually in the middle management ranks are responsible for the implementation of the accounting strategy. They communicate to lower-level employees and share information and ideas to higher career stages like the Head of Accounting or the CFO. The latter mentioned high ranked functions are involved in organizational level decisions and are responsible for the whole accounting department (Goretzki & Messner, 2019; Horton et al., 2020).

Table 13 shows the different fsQCA configurations in three subsamples regarding the tree career stages of the management accountants in this study. The results show that there is only one solution for junior management accountants to support a high identity fit. A combination of interactive controls, an organic organizational structure and a high group culture are the core conditions in this configuration. The configuration exhibits a high consistency value of 0.91 and a solution coverage of 0.49. In case of the senior management accountants, three equally effective configurations are presented with an overall consistency of 0.9 and an overall solution coverage of 0.62. Solutions 2a and 2b indicate that the absence of boundary controls together with a high emphasis of group culture is effective to support a high identity fit with other formal and informal controls present or absent as complementary controls. Solution 3 suggests a combination of a high group culture and a high leader-member-relationship quality.

Table 13 Results of fsQCA for High Identity Fit per Job Level

	Solutions					
	Junior MA (n=185)	*Senior MA (n=21)*			*Head of Accounting / CFO (n=71)*	
Organizational level mechanisms	1	2a	2b	3	4	5
Diagnostic systems	●	⊗	●	⊗	⨂	⨂
Interactive control systems	⬤	⊗	⊗	⊗	⊗	●
Boundary systems	●	⨂	⨂	●	⊗	●
Beliefs systems	●	⊗	●	●	⊗	●
Organizational structure (organic)	⬤	●	●	●	⊗	●
Job clarity	●	⊗	⊗	●	⊗	●
Group level mechanisms						
Group culture	⬤	⬤	⬤	⬤	●	⊗
Leader-member-relationship quality		●	⊗	⬤	⬤	⬤
Psychological safety		⊗	●	●	⬤	⬤
Consistency	0.91	0.92	0.94	0.94	0.9	0.92
Raw coverage	0.49	0.44	0.46	0.41	0.39	0.38
Unique coverage	0.49	0.09	0.11	0.05	0.09	0.08
Overall solution consistency	**0.91**		**0.9**		**0.9**	
Overall solution coverage	**0.49**		**0.62**		**0.47**	

The solutions 4 and 5 for the subgroup of the Head of Accounting / CFO career stage indicate both a high emphasis of the combination of the core conditions high leader-member-relationship quality and psychological safety together with the absence of diagnostic controls to support a high identity fit for that group. The configuration exhibits a high consistency value of 0.90 and a solution coverage of 0.47.

Almost all configurations in the main as well as in the sub samples indicate the importance of informal controls to support a high identity fit. A strong group culture appears to be most important together with combinations of leader-member-relation-quality and psychological safety. To validate the findings, several robustness tests are conducted in the next section.

21.3. Robustness Tests

Configurations for the absence of identity fit and low identity fit: As the logic of QCA is causally asymmetric, the set of causal conditions leading to the presence of an outcome may be different from the set of conditions leading to the absence of an outcome (Ragin, 2000). Therefore, I follow the recommendation of Fiss (2011) to additionally examine which causes lead to the absence of high identity fit. To do so, measures of membership with the absence of identity fit and low identity fit are created. The absence of identity fit is simply coded as the negation of the measure of high identity fit described above (full membership set at 1, full non-membership set at 7, crossover point set at 4). I also created a measure for low identity fit (full membership set at 2, full non-membership set at 6, crossover point set at 4).

In case of the absence of identity fit, basically combinations of absent conditions at the organizational level are core conditions. For low identity fit combinations of the absence of job clarity together with LMX and psychological safety are found. All in all, there are several ways that lead to a decline of the identity fit for management accountants. Appendix 2 provides details on estimations and results.

Alternative calibrations: QCA findings can be considered robust if slightly different inputs lead to similar enough findings. Therefore, calibration thresholds are changed to a standard calibration which leads to a change of the findings' consistency (0.89) and coverage (0.32) but does not affect core conditions or the configurations found for high identity fit substantially. This is in line with previous analyses in the field (Fiss, 2011; Greckhamer et al., 2018). The overall emphasis lies on the use of informal controls in combination with job clarity for high identity fit (see Appendix 3).

Traditional Quantitative Methods: An advantage of large sample QCA approaches is, that it can complement existing general linear methods (Greckhamer et al., 2013) on the other hand, the traditional approaches can also be used to validate the findings of the fsQCA

(Pappas & Woodside, 2021). Therefore, the results of the fsQCA are compared with results of more traditional methods like cluster analysis and OLS regression (Fiss, 2011).[21]

A cluster analysis enables the location of mutually exclusive groups within a population that share similar attributes. In this study, a two-step cluster analysis is used. In the first stage, the number of clusters and initial centroid values for identity fit are determined through a hierarchical agglomeration procedure using Ward's method. In the second stage, a K-means clustering analysis is conducted using the initial centroid values (Hair et al., 2014). Both procedures indicate a two-cluster solution. Appendix 4, panel A shows the cluster solution. The diagram shows that the subgroup of management accountants with a high identity fit also perceives a strong group culture as well as a good relationship to their supervisors and high psychological safety at work.

Next, an OLS regression analysis is performed. The models regress identity fit on the formal and informal controls including the analysis of interaction effects of the core conditions. That aims to identify complements or substitutes regarding the mechanisms (Bedford et al., 2016; Erkens & Van der Stede, 2015).[22] The results show significant associations similar to the configurations of the fsQCA for the full sample as well as for junior and senior management accountants (see Appendix 4, panel B). However, boundary controls rather than interactive controls (which is theoretically more sensemaking) are significant variables in the regression models. A possible answer for these findings may arise from the (standard) calibration of boundary controls for the fsQCA analysis. In the case of the subgroup analysis for junior management accountants, the need for fixed rules and boundaries may also play a role in ensuring an identity fit for those young professionals.

22. Discussion and Conclusion

The accounting literature has increasingly focused on the changing nature of the management accounting role from the traditional "bean counter" to a modern business partner role. Many studies thereby focus on identity work to overcome identity conflicts (Byrne & Pierce, 2018; Goretzki et al., 2013; Järvenpää, 2007; Morales & Lambert, 2013). This study adds knowledge to prior qualitative literature (e.g., Goretzki & Messner, 2019; Heinzelmann, 2018; van der Steen, 2022) by investigating identity fit support mechanisms in a quantitative cross-sectional study with management accountants from Germany, Austria, Liechtenstein, and the German speaking part of Switzerland. The mechanisms (formal and informal management controls) are based on organizational and team level. I refer to research on organizational

[21] Although previous QCA literature indicated that these supplementary analyses often offer limited additional insights (Erkens & Van der Stede, 2015; Fiss, 2011).

[22] All variables are mean-centered, and all variance inflation factors (VIF) for all models are well below the general threshold of 10 indicating that multicollinearity is not a significant concern (Hair et al., 2014).

behaviour that calls for the better understanding of multilevel influences on identity work to fully grasp the underlying mechanisms that drive the identity reconstruction in the organizational context (Ashforth et al., 2011; Chreim et al., 2007; Dutton et al., 2010; Horton et al., 2014; Lok, 2010). By using an institutional lens (Abrahamsson et al., 2011; Goretzki et al., 2013; Taylor & Scapens, 2016) and applying configuration theory (Ragin, 2014; Ragin & Fiss, 2008), this study specifically examines control packages by using fsQCA within this large scale sample. The advantage of using fsQCA is that it allows making comparisons across a much larger number of configurations than it would be possible using traditional comparative methods (Erkens & Van der Stede, 2015). It also gives richer insights about how these multiple conditions interact towards the outcome identity fit.

The results reveal that there are multiple, equally effective ways to support high identity fit for management accountants. Several solutions within the overall sample present a combination of a strong group culture and high psychological safety as especially relevant to support a high identity fit. These results contribute to organizational behaviour research that highlights the effect of a strong group culture and supportive and trustworthy co-worker behaviours to be highly effective to influence employees' attitudes and the emotional dimensions of work (Kahn, 1990; May et al., 2004). Social identity theory suggests that if individuals who identify with a group, then the group becomes a significant part of their self-concept (Ashforth & Mael, 1989). The literature also associates positive effects with group internalization, such as more positive self-perception and self-evaluation (Deci & Ryan, 2000). From the management accounting field, Lepistö et al. (2018) find in that sense that a strong group culture is a significant neutralizer of the image of dirty work that management accountants often perceive. The relationship to colleagues and superiors is further important to feel safe at work. People who feel to be able to show their selves without the fear of negative consequences are more confident towards their self-image, status, or career (Edmondson, 1999; Kahn, 1990).

The combination of high job clarity and high leader-member-relationship quality has also been highlighted within the results. This adds to research which argues that changes in management accounting practices have an important impact on individuals' identities. Conflicts occur when new practices that management accountants have to enact no longer align with their understandings of their inner self (Goretzki et al., 2013; Järvinen, 2009). Besides, Morales and Lambert (2013) suggested, that management accountants' work identity is mostly regulated by upper echelons that need to clarify and legitimize their tasks. Individuals feel safer to engage themselves more fully, try out novel ways of doing things, discuss mistakes and learn from these behaviours when they are in supportive leader-member relationships (Edmondson, 2004; May et al., 2004). If employees have little trust in their leaders, they are likely to feel judged or monitored and refrain from expressing their opinions because of fear that it may bring harm to their reputation (Edmondson, 2004). Thus, the results complement prior case studies that highlight the eminent role of supervisors of management accountants as a key promoter in their identity reconstruction, when supportive relationships are present (Goretzki & Messner, 2019; Goretzki et al., 2013; van der Steen, 2022). Formal controls (present or absent) are usually periphery conditions in the overall sample analysis. However, the supplementary analysis about different levels of identity fit underlines the important role of the examined formal controls. In case of the absence of identity fit, interactive, beliefs and boundary systems are absent core conditions, as well. In other words, the absence of these control levers leads to the absence of an identity fit. That may indicate that an effective formal control system on organizational level is needed for the initial realization of an identity fit. The analysis of the set of low identity fit then indicates the importance of job clarity, leader-member-relationship quality, and psychological safety. After the initial realization of the identity fit by formal controls the interplay with informal controls keeps improving the fit. This result adds to research of Pfister and Lukka (2019) who found that informal controls can stretch the outcomes of formal controls in a control package.

The subsample analyses provide more insights regarding the individual differences of the career stages of management accountants and the relevant identity fit support mechanisms. In case of the junior management accountants, all formal control mechanisms are present, but only the combination of interactive control systems and an organic organizational structure together with a strong group culture as an informal control mechanism, are core conditions. Interactive controls communicate the concerns of the management throughout the organization (Adler & Chen, 2011). Thus, employees become aware of where potential opportunities and threats may arise and are motivated to be proactive in searching for new opportunities and guarding against threats (Ferreira & Otley, 2009). Continuous communication across organizational members and feedback from superiors seems sensemaking to support the identity fit for junior management accountants. Besides, organic structures that are characterized by decentralized decision making, organizational adaptiveness and open communications without high emphasis on formal rules and procedures (Covin et al., 2001) together with a strong group culture in the finance function can facilitate role identification for junior professionals.

In contrast, to support a high identity fit for senior management accountants, informal controls such as group culture and leader-member-relationship quality are thoroughly relevant. Moreover, the absence of boundary control systems is highlighted. The analysis regarding the CFO function shows a similar picture. Leader-member-relationship quality and psychological safety are present, whereas diagnostic controls should be an absent core condition. Higher ranked management accountants need to offer more influence and autonomy than to adapt oneself within the institutional structures (Horton & Wanderley, 2018; Horton et al., 2020). Thus, the results indicate the need for more self-determination (Deci, 1971) and own agency towards ones' identity fit when people are in higher work positions. Therefore, informal rather than formal controls are relevant.

This study adds to previous case study research and shows implications for the management. The results address that support mechanisms for identity fit do not work in isolation but are rather an interplay in triggering identity work on organizational and group level. Moreover, the relationship between management accountants and other organizational members are most important to strengthen the management accountants' identity.

The existence of a trusting relationship to superiors has been found to be helpful to strengthen management accountants aspired identities by prior case studies (e.g., Byrne & Pierce, 2018; Goretzki et al., 2013; van der Steen, 2022). This study complements these findings with large scale sample data. General managers can further influence the prestige of professional groups in the company by providing more resources or more rights or by showing that they care about their opinion (Hiller et al., 2014). However, as observed by Morales and Lambert (2013), the relationships between management accountants and general managers are not naturally peaceful. General managers can therefore be the source of fragility in accountants' identity reconstruction. The present study highlights the importance of the relationship between both professional groups, as well. This research on management accountants' identity reconstruction has also implications for practitioners from other organizational professions who need to engage in identity work.

Nevertheless, this study is not free of limitations. First, I show several combinations of casual conditions that relate to a high identity fit for management accountants by using a large sample cross-sectoral survey to collect the data. In doing so, I only measure respondents' individual perceptions of how they perceive their own high identity fit. This does not give any information about how the management accountant behave in reality and if their identity fit supports their organizational role and work performance. Further, cross-sectoral studies have to be interpreted in the light of their common drawbacks (Speklé & Widener, 2018). However, I checked for the robustness of the data and there is no reason to expect systematic bias across variables and the likelihood of CMB is low.

Second, QCA studies are not necessarily generalizable as this is depended upon the initial construction of the study sample and the incorporation of any simplifying assumptions. With respect to the former, sampling in large QCA studies should follow the logic of selecting theoretically relevant cases (Greckhamer et al., 2018; Ragin, 2008). To use a random sample often seems as not to be appropriate for two reasons, the homogeneity problem (data with a central tendency and normal distribution) and the diversity problem (leaving out rare configurations) (Greckhamer et al., 2013; Ragin, 2000). As the sample of this study is based on random data, I checked for the appropriateness of the sample to mitigate the likelihood of errors and I left out simplifying assumptions (easy counterfactuals). Nevertheless, the interpretation of the data is limited as the results might only have limited implications on management accountants in other cultural areas or other organizational structures than involved in this study.

Third, the study analyses the causal conditions that lead to a high identity fit of management accountants. As QCA studies are shaped by the fact that set theoretic relationships allow for asymmetric causal relationships, the causal conditions that lead to high identity fit cannot be generalized as also having implications for configurations leading to low identity fit (Fiss, 2011; Greckhamer et al., 2018).

Despite the limitations of fsQCA, this study could demonstrate the strengths of the method and tried to mitigate some weaknesses of other approaches when it comes to analysing configurations. As such, this study provides novel insights of how to integrate new methods in the management accounting research stream and follows recent fsQCA studies (Bedford et al., 2016; Erkens & Van der Stede, 2015). Furthermore, this study contributes to the literature that focusses on the configurations of formal and informal controls as a control package (Evans & Tucker, 2015; Ferreira & Otley, 2009; Gerdin et al., 2019; Malmi & Brown, 2008; Pfister & Lukka, 2019) and follows latest research recommendations in that field (Bedford, 2020).

This research identifies which combinations of formal and informal controls help to gain legitimacy to support an identity fit and contributes to the importance of a strong group culture as well as the importance of the quality of the relationship to superiors and an overall high psychological safety of management accountants to perceive a high identity fit. From these findings, implications can also be made for other organizational functions that are affected by change of the profession.

This study leaves room for further research avenues. First, a future study can investigate the influence of organizational identification as a support mechanism for management accountants' identity fit. Organizational identification refers to the extent to which employees experience a sense of oneness and belongingness with their employing organization (Ashforth & Mael, 1989). By achieving high levels of the personal identification towards an organization, individuals are more likely to overcome challenges and stay in their organizations (Kristof, 1996). Therefore, high organizational identification may also be relevant in supporting the identity fit of management accountants in their current situation of role change. Different organizational characteristics such as size or industry affiliation can also possibly cause effects on the identity fit.

Second, future research should integrate effects that involve organizational crisis situations. Research indicates that for example financial crisis situations can increase the importance of management accountants especially in interactions with other departments and in the decision-making processes (Endenich, 2014). This higher role acceptance might also positively influence management accountants' identity fit.

Third, this study leaves out how the development of new skills can support the identity fit of management accountants. As the finance function is changing, management accountants are in need to adopt a new set of skills and need to be open for continuous learning (Byrne & Pierce, 2007; Lepistö & Ihantola, 2018; Rouwelaar et al., 2021). Future studies could thereby add to research regarding the role of universities in preparing students to work in the finance function (Jakobsen et al., 2019) or shed more light in recruiting and selection processes that realize not only a high functional but also a high identity fit.

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Appendix

Appendix 1

Survey Instrument Items

	Items	Anchors
1	**Diagnostic control systems** *To what extent does the top management team use budgets and performance measures for the following*	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
1.1	Identify critical performance variables (i.e., factors that indicate achievement of current strategy)	
1.2	Set targets for critical performance variables	
1.3	Monitor progress toward critical performance targets	
1.4	Provide information to correct deviations from present performance targets	
1.5	Review key areas of performance	
2	**Interactive control systems** *To what extent does the top management team use budgets and performance measures for the following*	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
2.1	Provide a recurring and frequent agenda for top management activities	
2.2	Provide a recurring and frequent agenda for subordinate activities	
2.3	Enable continual challenge and debate of underlying data, assumptions and action plans with subordinates and peers	
2.4	Focus attention on strategic uncertainties (i.e., factors that may invalidate current strategy or provide opportunities for new strategic initiatives)	
2.5	Encourage and facilitate dialog and information sharing with subordinates	
3	**Beliefs Control Systems** *To what extent. . .*	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
3.1	Are the values, purpose and direction of the company codified in formal documents? (e.g., mission/value statements, credos, statements of purpose)	
3.2	Does top management actively communicate core values to subordinates?	
3.3	Are formal statements of values used to create commitment to the long-term vision of top management?	
3.4	Are formal statements of values used to motivate and guide subordinates in searching for new opportunities?	
4	**Boundary Control Systems** *To what extent. . .*	*Likert Scale 1-7: 1 = very low extent / 7 = very high extent*
4.1	Are codes of conduct or similar statements relied upon to define appropriate behaviour?	
4.2	Are there policies or guidelines that stipulate specific areas for, or limits on, opportunity search and experimentation?	
4.3	Does top management actively communicate risks and activities to be avoided by subordinates?	
4.4	Are sanctions or punishments applied to subordinates who engage in risks and activities outside organizational policy, irrespective of the outcome?	

5	**Organizational Structure**	*Likert Scale 1-7*
5.1	Indicate how control information is typically communicated in your company	1 = through highly structured, formal channels of communication; 7 = through very open, informal channels of communication
5.2	Indicate the accessibility of operational information in your company	1 = highly restrictive access to important operational information; 7 = free flow of important operational information throughout the SBU
5.3	Indicate the content of work-related communication between top management and subordinates	1 = top management decisions and mandates, instructional, direction giving; 7 = information and idea sharing, consultative, advice giving
5.4	In general, the operating management philosophy in my company favours	1 = emphasis on giving the most say in decision making to formal line managers; 7 = emphasis on giving the most say to the expert in a given situation even if this means bypassing formal line authority
5.5	In general, the operating management philosophy in my company favours	1 = emphasis on specialisation and top-level coordination; 7 = emphasis on initiative and adaptation to the local situation
6	**Job Clarity**	*Likert Scale 1-7: 1 = Strongly Disagree and 7 = Strongly Agree*
6.1	Management makes its expectations clear.	
6.2	Management has a clear view of where the organization is going and how to get there.	
6.3	I am given the resources and equipment to do my job.	
7	**Group Culture**	*Likert Scale 1-7: 1 = Strongly Disagree and 7 = Strongly Agree*
7.1	A team environment describes my work environment.	
7.2	Loyalty is important in my work environment.	
7.3	Morale is important in my work environment.	
8	**Leader-Member Relationship Quality** *Please scale your relationship to your supervisor*	*Likert Scale 1-7: 1 "not at all descriptive of our relationship on average" and 7 "very descriptive of our relationship on average"*
8.1	Cordial	
8.2	Friendly	
8.3	Open	
8.4	Trusting	
8.5	Close	
9	**Psychological safety**	*Likert Scale 1-7: 1 = Strongly Disagree and 7 = Strongly Agree*
9.1	I'm not afraid to be myself at work.	
9.2	I am not afraid to express my opinions at work.	
9.3	There is a friendly environment at work.	
10	**Identity Fit**	*Likert Scale 1-7: 1 = Strongly Disagree and 7 = Strongly Agree*
10.1	My job 'fits' how I see myself.	
10.2	I like the identity my job gives me.	
10.3	The work I do on this job helps me satisfy who I am.	
10.4	My job 'fits' how I see myself in the future.	

Appendix 2

Panel A: Results of fsQCA for the absence of identity fit[a]

	Solutions					
Organizational level mechanisms	1	2	3	4	5	6
Diagnostic systems						
Interactive control systems	⨂	⨂	⨂	⨂	⨂	⨂
Boundary systems		⊗	⨂	⨂	●	⊗
Beliefs systems	⨂	⨂		⨂	⨂	⨂
Organizational structure (organic)			⨂	⨂	●	●
Job clarity	⊗	⊗	⊗	⊗	⊗	⊗
Group level mechanisms						
Group culture	⊗	⊗	⊗			●
Leader-member-relationship quality	⊗	⊗	⊗	⊗	⊗	●
Psychological safety	⊗		⊗	⊗	⊗	●
Consistency	0.91	0.92	0.92	0.93	0.9	0.9
Raw coverage	0.55	0.5	0.44	0.44	0.36	0.22
Unique coverage	0.04	0.01	0.02	0.01	0.01	0.02
Overall solution consistency			**0.89**			
Overall solution coverage			**0.64**			

Panel B: Results of fsQCA for low identity fit[b]

	Solutions						
Organizational level mechanisms	1	2	3	4	5	6	7
Diagnostic systems	⊗	⊗	⊗	⊗	●	⊗	●
Interactive control systems	⊗	⊗	⊗	⊗	●	●	●
Boundary systems			●	⊗	●	●	●
Beliefs systems		⊗		⊗	●	●	●
Organizational structure (organic)	⊗			⊗	●	●	●
Job clarity	⨂	⨂	⨂	⨂	●	⨂	⨂
Group level mechanisms							
Group culture	⊗	⊗	⊗			●	●
Leader-member-relationship quality	⨂	⨂	⨂	⨂	⨂	⨂	●
Psychological safety	⨂	⨂	⨂	⨂	⨂	⨂	⊗
Consistency	0.98	0.97	0.97	0.97	0.9	0.96	0.9
Raw coverage	0.41	0.45	0.35	0.36	0.22	0.2	0.18
Unique coverage	0.01	0.05	0.01	0.01	0.02	0.01	0.01
Overall solution consistency				**0.93**			
Overall solution coverage				**0.58**			

[a]frequency cutoff = 3; consistency threshold = 0.9; [b]frequency cutoff = 4; consistency threshold = 0.9

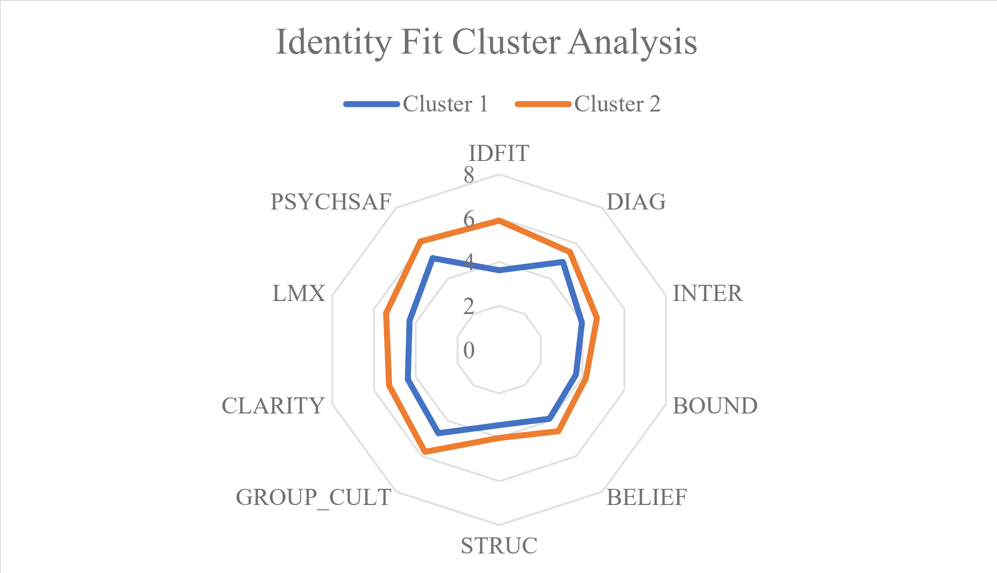
Appendix 3

Results of fsQCA for high identity fit Standard Calibration[a]			
		Solutions	
Organizational level mechanisms	1	2	3
Diagnostic systems	⊗	⊗	●
Interactive control systems	●	●	●
Boundary systems	●	●	●
Beliefs systems	●	●	●
Organizational structure (organic)	●	●	●
Job clarity	●	⬤	⬤
Group level mechanisms			
Group culture	⬤	⊗	⬤
Leader-member-relationship quality	⊗	⬤	⬤
Psychological safety	⊗	⬤	⬤
Consistency	0.86	0.94	0.96
Raw coverage	0.23	0.21	0.17
Unique coverage	0.08	0.05	0.03
Overall solution consistency		**0.89**	
Overall solution coverage		**0.32**	

[a]frequency cutoff = 3; consistency threshold = 0.8

Appendix 4

Panel A



Panel B

OLS regression for identity fit[a]

	Full Sample (1) - (3)			Junior MA	Senior MA[b]
	(1)	(2)	(3)	(4)	(5)
Constant	0.000	0.001	-0.031	-0.051	0.022
	(1.000)	(0.980)	(0.515)	(0.339)	(0.686)
DIAG	-0.023	-0.023	-0.013	-0.020	0.003
	(0.697)	(0.696)	(0.823)	(0.777)	(0.973)
INTER	0.078	0.078	0.059	0.005	0.043
	(0.256)	(0.256)	(0.389)	(0.955)	(0.645)
BOUND	**0.098***	**0.0978***	**0.098***	**0.204*****	0.032
	(0.072)	(0.072)	(0.071)	(0.002)	(0.640)
BELIEF	-0.059	-0.060	-0.069	-0.060	-0.099
	(0.310)	(0.314)	(0.243)	(0.403)	(0.209)
STRUC	0.059	0.059	0.057	**0.123****	0.095
	(0.233)	(0.235)	(0.249)	(0.038)	(0.144)
CLARITY	0.078	0.077	0.077	**0.138***	0.085
	(0.210)	(0.214)	(0.210)	(0.067)	(0.270)
GROUPCULT	**0.297*****	**0.298*****	**0.321*****	**0.360*****	**0.300*****
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LMX	**0.204*****	**0.203*****	**0.193*****	**0.147****	**0.174****
	(0.000)	(0.000)	(0.000)	(0.034)	(0.013)
PSYCHSAF	**0.231*****	**0.231*****	**0.267*****	**0.145****	**0.230*****
	(0.000)	(0.000)	(0.000)	(0.039)	(0.001)
CLARITY*LMX		-0.002			
		(0.952)			
GROUPCULT*PSYCHSAF			**0.065***		
			(0.098)		
R^2	49.61%	49.61%	50.13%	52.21%	46.42%
Adj. R^2	47.91%	47.72%	48.25%	49.75%	43.67%
F-value	29.21	26.19	26.73	21.24	16.85
Sig. F	0.00	0.00	0.00	0.00	0.00

Note: *: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$ (two tailed). OLS regression coefficients are reported, t-statistics in brackets.

[a] all variables are mean centered [b] This sample includes Senior Management Accountants as well as Head of Accounting/CFO.

Curriculum Vitae

Janine Burghardt

Date of Birth: 31.01.1991

Nationality: German

Academic Work Experiences

St.Gallen, Switzerland 10/2018 – now	**University of St.Gallen** Research Associate – Chair of Performance Management / Control with Prof. Dr. Klaus Möller *Research Activities: Quantitative research regarding the relationship between management controls and the perception of meaningful work in the management accounting profession and research regarding identity fit support mechanisms in connection to the role change of the management accountant* *Other Activities: Seminar Manager of executive education programs of the Chair for Control / Performance Management; Conference Manager of annual ACA Symposium of the institute with more than 100 participants from practice and research (2019-2021); Project Manager of doctoral research seminars of the institute (Brown Bag seminars); Social Media Manager of the chair (LinkedIn)*
Bologna, Italy 09/2020 – 11/2020	**University of Bologna** Research visit within the research project "Departments of Excellence"

Practical Work Experiences

St.Gallen, Switzerland 01/2021 – now	**Die Unternehmung – Swiss Journal of Business Research and Practice** Editorial Office Manager *Activities: Organization and coordination of the publication of four issues of the journal per year*
Berlin, Germany	**Bund für Umwelt und Naturschutz (BUND)**

08/2017 – 07/2018	Project Controller – Finance Department of an Environmental Protection Organization *Activities: Financial supervision of environmental protection projects on national and international level*
Berlin, Germany 10/2013 – 09/2015	**PricewaterhouseCoopers AG WPG** Assistant Auditor – Assurance Industrial Services *Activities: Execution of financial audits according to German accounting law and international accounting standards*
Berlin, Germany 01/2013 – 03/2013	**PricewaterhouseCoopers AG WPG** Intern – Assurance Industrial Services

Education

St.Gallen, Switzerland 02/2019 – now	**University of St.Gallen** Doctoral Student (Ph.D. Program in Management, PMA)
Berlin, Germany 10/2015 – 09/2017	**Free University Berlin** Master Studies in Management and Marketing (average grade: 1.6 – 1=highest / 5=lowest)
Shanghai, China 09/2016 – 12/2016	**Shanghai Jiao Tong University** Term abroad (MBA-Program participation)
Frankfurt (Oder), Germany 10/2010 – 09/2013	**European University Viadrina Frankfurt (Oder)** Bachelor Studies in International Business Administration - Major: Organization & Human Resource Management – (average grade: 2.0 – 1=highest / 5=lowest)
Copenhagen, Denmark 08/2012 – 12/2012	**Copenhagen Business School** Term abroad
Frankfurt (Oder), Germany 09/2007 – 06/2010	**Konrad-Wachsmann-Oberstufenzentrum Frankfurt (Oder)** A-Levels - Advanced courses: English, Economics – (average grade: 1.2 – 1=highest / 6=lowest)

Empirical Research Method Courses Completed

Brussels, Belgium April 2022	**“EDEN Doctoral Seminar on Quantitative Empirical Research in Management Accounting”** by *Frank Moers*, Professor of Management Accounting & Control at Maastricht University School of Business and Economics; *Michael Williamson*, A.C. Littleton Professor of Accountancy at Gies College of Business; *David Bedford*, Associate Professor in Accounting at UTS Business School

St.Gallen, Switzerland June 2021	**"Qualitative Comparative Analysis"** by *Peer Fiss*, Jill and Frank Fertitta Chair of Business Administration and Professor of Management & Organization, and Sociology at the University of Southern California
St.Gallen, Switzerland June 2020	**"Regression I – Introduction"** by *Timothy McDaniel*, Assistant Professor of Mathematics & Quantitative Business at Buena Vista University **"Structural Equation Models I"** by *Douglas Baer*, Professor Emeritus in the Faculty of Social Science at the University of Victoria
St.Gallen, Switzerland June 2019	**"Case Study Methods"** by *Andrew Bennett*, Professor in the Department of Government at Georgetown University

Conference Attendance (Conference Papers Accepted)

Burghardt, J:	19th Annual Conference for Management Accounting Research (ACMAR). Paper "The Reconstruction of a Professional Identity in Times of Change – Evidence from the Management Accounting Function", Vallendar, 02.06-03.06.2022
Burghardt, J.:	44th EAA Annual Congress. Paper "The Reconstruction of a Professional Identity in Times of Change – Evidence from the Management Accounting Function", Bergen, 11.05.-13.05.2022
Burghardt, J.:	ERMAC 2021 Summer School and Research Conference. Research Proposal "Inner Struggle or Identity-Fit? An Analysis of Management Accountant's Role Change in Family and Non-Family Firms" (Virtual), 20.06.-22.06.2021
Burghardt, J., Moeller, K.:	1st EAA Virtual Annual Congress 2021. Paper "The Use of a Management Control System to Enhance the Perception of Meaningful Work – A Bibliometric Analysis and Literature Review" (Virtual), 26.05.-28.05.2021
Burghardt, J., Moeller, K.:	18th Annual Conference for Management Accounting Research (ACMAR). Paper "Meaningful work through formal controls? The use of the levers of control and the tendency to be innovative" (Virtual), 01.03.-05.03.2021
Burghardt, J., Moeller, K.,	10th EIASM Conference on Performance Measurement and Management Control. Paper: "Does Pay for Performance pay Off? – An Empirical Analysis of Self Determination Theory in an International Sales Organization", Nice, 18.09.-20.09.2019

Publications

Moeller, K., Burghardt, J.: Sinnstiftung und Steuerungssysteme – Widerspruch oder Synergie, in: Controlling, 33. Jg. (2021), Special Issue Spring 2021, S. 14-18

Funds / Grants Received

EIASM Scholarship
Scholarship to participate in the "EDEN Doctoral Seminar on Quantitative Empirical Research in Management Accounting" of € 550 (Letter of acceptance: October 2021)

University of Bologna – Department of Management
Invitation as a visiting researcher within the research project "Departments of Excellence": € 3,000 (Letter of acceptance: September 2020)

Swiss National Science Foundation (SNF)
Project: "The Contemporary Controller: How does the control system interact with new role profiles." CHF 225,420 (January 2020 – December 2021)

Memberships in Professional Organizations

2019 – now **European Accounting Association (EAA)**

Other Professional Activities

2021 – now **Member of the Virtual Activities Committee (VAC) of the European Accounting Association (EAA)**

Languages

German: first language
English: very good knowledge
French: basic reading and writing skills