ULM UNIVERSITY

INSTITUTE OF BUSINESS ANALYTICS

New Directions in Management Accounting and Control

–

Empirical Evidence on the Impact of Contemporary Circumstances and Corporate Responses

Cumulative doctoral thesis

Submitted to the Faculty of Mathematics and Management of Ulm University for the academic degree of Doctor of Economics and Management Dr. rer. pol.

By

Marvin Kalla

Born in Ulm

2026

Dean in office: Prof. Dr. Robert Stelzer

Supervisor: Prof. Dr. Mischa Seiter

Examiner: Prof. Dr. Paul Wentges

Date of the oral examination: July 23, 2026

Acknowledgements

This dissertation was substantially enriched by numerous individuals who collectively fostered an inspiring and encouraging environment for me. I am sincerely grateful to all those who have contributed to this work in various ways and for their presence along this journey. First and foremost, I would like to express my most profound gratitude to my supervisor, Prof. Dr. Mischa Seiter, for his unwavering support, invaluable guidance, and exceptional expertise throughout my research. His commitment, intellectual rigor, and stimulating advice proved crucial in advancing this work from its inception to completion. I am equally thankful to Prof. Dr. Paul Wentges and Prof. Dr. Mathias Klier for serving on my doctoral committee and their engagement with my research.

My sincere thanks extend to my co-authors, Dr. Maximilian Kohler, Prof. Dr. Matthias D. Mahlendorf, and Prof. Dr. Timo Vogelsang, for their valuable contributions and fruitful collaborations. Their insights and dedication significantly enhanced the quality of this work. Furthermore, I wish to acknowledge the supportive environment cultivated by my colleagues at the International Performance Research Institute (IPRI). Their collaborative spirit and collective commitment played an integral role in the successful completion of my dissertation. I am particularly thankful for their willingness to challenge assumptions, offer encouragement, and share expertise as well as laughter – elements that contributed greatly to both the intellectual and personal dimensions of this journey. In addition, I would like to acknowledge the generous contributions of the Péter Horváth Foundation and the Foundation for Family Businesses, without whose support my research would not have been possible.

Finally, I am deeply grateful to my family and friends for their endless support, patience, and encouragement. My friends accompanied me through challenging and rewarding phases alike, providing companionship, perspective, and joy – thus ensuring my balance between academia and recreation. Most notably, I wish to express my heartfelt gratitude toward my beloved parents Karin and Denis, as well as to my brother Nico, for their unconditional support, emotional reassurance, and invaluable stability. Their unwavering belief in me was the decisive foundation and driving force behind this achievement.

From the bottom of my heart, thank you!

Marvin Kalla

Table of Contents

Acknowledgements ..... **III**

List of Figures ..... **VII**

List of Tables ..... **IX**

List of Abbreviations ..... **XII**

Abstract ..... **XIV**

1 General Introduction **16**

1.1 Motivation 16

1.2 Research questions 20

1.3 Structure of the dissertation 23

References 26

2 How Do Corporate Social Goals Materialize in Management Control Systems? An Exploratory Study in Family Businesses **35**

2.1 Introduction 37

2.2 Theoretical background 39

2.2.1 Sustainability and social goal orientation 39

2.2.2 Management control systems 41

2.2.3 Management control systems and sustainability 43

2.2.4 Family businesses as scope of investigation 47

2.3 Method 49

2.4 Findings 52

2.4.1 The materialization of social goals in planning controls 52

2.4.2 The materialization of social goals in cybernetic controls 53

2.4.3 The materialization of social goals in reward and compensation controls 55

2.4.4 The materialization of social goals in administrative controls 56

2.4.5 The materialization of social goals in cultural controls 59

2.4.6 The distribution of social controls among family businesses of different characteristics 62
2.5 Discussion and conclusion 65
2.5.1 The role of management control systems in materializing social goals 65
2.5.2 Challenges and opportunities in materializing social goals in management control systems 67
2.5.3 Limitations and avenues for future research 70
References 72
Appendix 86

3 Is Real Also Ideal? A Field Experiment on Inflation Adjustment in Employee Performance Measures 100

3.1 Introduction 101
3.2 Theoretical background 103
3.3 Setting, experimental design, and method 109
3.3.1. Setting 109
3.3.2. Experimental design 110
3.3.3. Method 113
3.4 Results 113
3.4.1. Main analyses 113
3.4.2. Additional analyses 114
3.5 Discussion 120
3.6 Conclusion 124
References 129
Appendix 138

4 Does Appreciation Only Pay off Temporarily? Effects of Voluntary One-off Payments on Employee Satisfaction 147

4.1 Introduction 148
4.2 Theory and hypotheses 150
4.2.1 Drivers of employee satisfaction in transition 150

4.2.2 Employer review platforms as a source of corporate information 154
4.2.3 Cyclical measures and one-off payments 157
4.3 Data and method 159
4.3.1 Data 159
4.3.2 Method 161
4.4 Results 163
4.4.1 Main analyses 163
4.4.2 Additional analyses 166
4.5 Discussion and conclusion 170
References 178
Appendix 194
5 General Conclusion 201
5.1 Major findings 202
5.2 Limitations and further research 205
References 208

List of Figures

Main body:

Figure 1: Overview of the dissertation's overarching research directions and specific topics 17

Figure 2: Conceptual structure of the cumulative dissertation..... 25

Figure 3: Average sales distribution of the departments in the randomized treatment and control groups..... 111

Figure 4: Exemplary sales report for the control group (left) and the treatment group (right)..... 112

Figure 5: Comparison of the sales development between treatment and control groups during control and treatment phases..... 114

Figure 6: Comparison of the sales development between treatment and control groups during control and treatment phases with inflation values only..... 116

Figure 7: Comparison of the sales development between treatment and control groups during control and treatment phases with deflation values only..... 117

Figure 8: Average review score per company normalized to point zero before and after treatment..... 164

Appendices:

Figure A 1: Exemplary display of a special product setup in the store..... 138

Figure A 2: Exemplary display of sales reports in the break room of a department (I/III) .. 139

Figure A 3: Exemplary display of sales reports in the break room of a department (II/III) 139

Figure A 4: Exemplary display of sales reports in the break room of a department (III/III) 140

Figure A 5: Comparison of the sales development between treatment and control groups during treatment phase with year-over-year comparison..... 141

Figure A 6: Comparison of the sales development between treatment and control groups during control and treatment phases only with low levels of inflation 142

Figure A 7: Comparison of the sales development between treatment and control groups during control and treatment phases only with medium levels of inflation 143

Figure A 8: Comparison of the sales development between treatment and control groups during control and treatment phases only with high levels of inflation 144

List of Tables

Main body:

Table 1: Interview sample 50

Table 2: Overview of the materialization of social goals in planning controls 53

Table 3: Overview of the materialization of social goals in cybernetic controls 55

Table 4: Overview of the materialization of social goals in reward and compensation controls 56

Table 5: Overview of the materialization of social goals in administrative controls 59

Table 6: Overview of the materialization of social goals in cultural controls 62

Table 7: Main treatment effect 114

Table 8: Additional analyses – Inflation as explanatory variable 115

Table 9: Additional analyses – Inflation values only 116

Table 10: Additional analyses – Deflation values only 117

Table 11: Additional analyses – Different levels of inflation 118

Table 12: Average treatment effect on the companies' overall score in the overall sample 165

Table 13: Average treatment effect on the companies' overall score over time in the overall sample 165

Table 14: Group-specific average treatment effect on the companies' overall score in the overall sample 167

Table 15: Average treatment effect on the companies' top categories in the overall sample 168

Table 16: Average treatment effect on the companies' subcategories in the overall sample 169

Appendices:

Table A 1: Interview guide 86

Table A 2: Overview of the materialization of social goals in company 1 89

Table A 3: Overview of the materialization of social goals in company 2 89

Table A 4: Overview of the materialization of social goals in company 3 90

Table A 5: Overview of the materialization of social goals in company 4 91

Table A 6: Overview of the materialization of social goals in company 5 92

Table A 7: Overview of the materialization of social goals in company 6 92

Table A 8: Overview of the materialization of social goals in company 7 93

Table A 9: Overview of the materialization of social goals in company 8 94

Table A 10: Overview of the materialization of social goals in company 9 95

Table A 11: Overview of the materialization of social goals in company 10 97

Table A 12: Overview of the materialization of social goals in company 11 98

Table A 13: Year-over-year comparison 140

Table A 14: Additional analyses – Only low levels of inflation 141

Table A 15: Additional analyses – Only medium levels of inflation 142

Table A 16: Additional analyses – Only high levels of inflation 143

Table A 17: Additional analyses – Ranking of low and high performers 144

Table A 18: Additional analyses – Ranking of low performers 144

Table A 19: Additional analyses – Ranking of high performers 145

Table A 20: Additional analyses – Effect on sick days 145

Table A 21: Additional analyses – Effect on sick days with inflation as explanatory variable 145

Table A 22: Additional analyses – Effect on sick days with inflation as explanatory variable with only low levels of inflation 146

Table A 23: Additional analyses – Effect on overtime 146

Table A 24: Additional analyses – Effect on overtime with inflation as explanatory variable 146

Table A 25: Monthly overview of the number of companies and review metrics by treatment and control group as well as index 194

Table A 26: Overview of how the DAX 40 companies handled the inflation compensation premium 195

Table A 27: Overview of how the MDAX 50 companies handled the inflation compensation premium 196

Table A 28: Group-specific average treatment effect on the companies' overall score in group 2 of the sample over time 198

Table A 29: Group-specific average treatment effect on the companies' overall score in group 10 of the sample over time 199

Table A 30: Group-specific average treatment effect on the companies' category recommendation to a friend in the overall sample 200

List of Abbreviations

AAA	American Accounting Association
ATT	Average treatment effect
BLS	The Bureau of Labor Statistics
bn	billion
CEO	Chief executive officer
cf.	confer (compare)
CFO	Chief financial officer
CSR	Corporate social responsibility
CSRD	Corporate Sustainability Reporting Directive
COVID-19	Coronavirus Disease 2019
DAX	Deutscher Aktienindex (German stock index)
did	difference-in-differences
ECB	European Central Bank
e.g.	exempli gratia (for example)
ENEAR	European Network for Experimental Accounting Research
ERMAC	Empirical Research in Management Accounting and Control
ESG	Environmental, social, and governance
et al.	et alia (and others)
etc.	et cetera (and other similar things)
H	Hypothesis
HR	Human resources
i.e.	id est (that is)
IFO	The ifo Institute for Economic Research
IFRS	International Financial Reporting Standards

IGBCE	Industriegewerkschaft Bergbau, Chemie, Energie (Mining, Chemicals, and Energy Industrial Union)
IMF	International Monetary Fund
ISO	International Organization for Standardization
KPI	Key performance indicator
m	million
MAS	Management Accounting Section
MCS	Management control system
MDAX	Mid-Cap-DAX
Med	Median
n	sample size
NGO	Non-governmental organization
NYT	The New York Times
ONS	The Office for National Statistics
p.	page
QRAM	Qualitative Research in Accounting & Management
R	Respondent
ROI	Return on investment
RQ	Research question
SBSC	Sustainability Balanced Scorecard
SDGs	Sustainable Development Goals
SEC	The United States Securities and Exchange Commission
UN	The United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	The World Health Organization

Abstract

Contemporary organizations navigate an era of unprecedented change marked by sustainable transformation imperatives, recurring macroeconomic crises, and proliferating technological advancement. Within this context, management accounting and control must constantly evolve to remain effective in guiding strategic decision-making and enabling organizational resilience. Yet, existing research has insufficiently addressed how organizations strategically adapt their control practices in response to these contemporary challenges. To bridge this gap, my cumulative dissertation examines three interrelated research directions reflecting critical pressures shaping modern management accounting and control through complementary methodological approaches.

Paper 1 addresses the social dimension of corporate sustainability by exploring how family businesses materialize social goals within their management control systems. Through exploratory interviews, the study reveals that most organizations employ heterogenous and predominantly informal cultural controls, while systematically tracking social outcomes remains underdeveloped. The findings underscore the necessity of moving beyond ad hoc social initiatives toward balanced control packages that render social performance visible and strategically integral. Paper 2 provides the first causal evidence on how adjusting performance measures for uncontrollable exogenous factors affects employee behavior. Drawing on a randomized field experiment in a German retail chain during periods of high inflation, the study challenges the conventional application of the controllability principle. Results indicate that inflation-adjusted performance reports fail to significantly improve sales performance and may inadvertently demotivate employees by being perceived as shifting performance expectations. These findings suggest that making performance metrics economically accurate does not automatically enhance their behavioral effectiveness. Paper 3 investigates how voluntary one-off payments influence employee satisfaction through crowd-based employer review data from German DAX and MDAX companies. Drawing on signaling theory and relational contracting, the analysis reveals that discretionary payments serve as credible organizational signals, significantly enhancing employee satisfaction. While these effects depend on timing and contextual communication, temporal effects remain less pronounced than hypothesized, suggesting that such discretionary payments function best as components of broader, multifaceted retention strategies.

Collectively, the three papers advance the management accounting and control literature by providing empirical evidence on how contemporary challenges reshape control practices and identifying strategic mechanisms through which organizations adapt structures to maintain effectiveness. From a theoretical perspective, the dissertation reinforces contingency theory by demonstrating that control effectiveness is context-dependent and requires continuous alignment with environmental pressures. Practically, the research guides organizations in embedding sustainability across control systems, communicating performance adjustments transparently during economic volatility, and strategically deploying discretionary incentives within holistic retention frameworks. The multi-paradigm methodological approach strengthens empirical rigor and enhances applicability across diverse organizational contexts, while illuminating new directions in management accounting and control.

1 General Introduction

"The greatest danger in times of turbulence is not the turbulence – it is to act with yesterday's logic." — Peter F. Drucker

My cumulative dissertation explores new research directions in management accounting and control, providing empirical evidence on how companies can navigate contemporary circumstances. The general introductory chapter of this dissertation is structured into three subsections. First, the motivational subsection offers an overview of the overarching research directions. Second, the research questions addressed in the three papers of my cumulative dissertation are discussed. Third, the overall structure of the dissertation is outlined.

1.1 Motivation

The contemporary world is characterized by an unprecedented pace of change, creating progression, challenges, uncertainty, and crises more frequently than in any other period in human history (Otley, 2016; van der Vegt et al., 2015; Wenzel et al., 2021). Organizations thus operate in an era shaped by rapid societal transformation, volatile macroeconomic conditions, and the proliferation of innovative data sources. Against this backdrop, management accounting and control must also evolve continuously in order to remain relevant and to reflect these shifting organizational and environmental dynamics. For research in this field, such evolution requires an emphasis on practice-oriented issues, while simultaneously fostering pertinent integration with theoretical developments in academic literature (Kaplan, 2011; van der Stede, 2015). By exploring novel data sources, methodological approaches, and interdisciplinary frameworks, management accounting and control research can generate valuable insights into how companies navigate an increasingly complex global environment (Malmi, 2016; Pedroso & Gomes, 2024).

The theoretical foundation for understanding this continuous adaptability to changing circumstances lies in *contingency theory*. While the term contingency indicates that something holds true only under certain conditions (Chenhall, 2003), Otley (1980, p. 413) describes the contingency concept as being "based on the premise that there is no universally appropriate (accounting) system which applies equally to all organizations in all circumstances." In other

words, there is no single best approach and no general optimal structure to management, instead, effective strategies are contingent upon the interplay of context-specific internal and external factors (Martin, 2020). Consequently, companies must align their strategic orientation with the different contextual pressures and continuously adapt to prevailing conditions, including environmental uncertainty, organizational structure, and technological complexity (Burkert et al., 2014; Gerdin & Greve, 2004; Otley, 2016).

These rapidly changing circumstances reflect a broad variety of contemporary themes that organizations are confronted with (cf. Zengul et al., 2021). Dirks and Wouters (2025) summarize this issue with the following central challenges: society's concerns about sustainable transformation create uncertainty and transition risks for companies; geopolitical developments disrupt supply chains through exogenous shocks; demographic shifts contribute to labor market shortages; and technological advancements as well as innovative data sources provide new opportunities but also create uncertainty regarding their effective use. Against this background, my dissertation addresses three topics representing the impact of contemporary circumstances and corporate responses shaping new directions in management accounting and control. Figure 1 illustrates the three overarching research directions as well as their associated specific topics in management accounting and control research selected for the three papers of my cumulative dissertation. The subsequent sections provide a brief introduction to each of these overarching research directions.

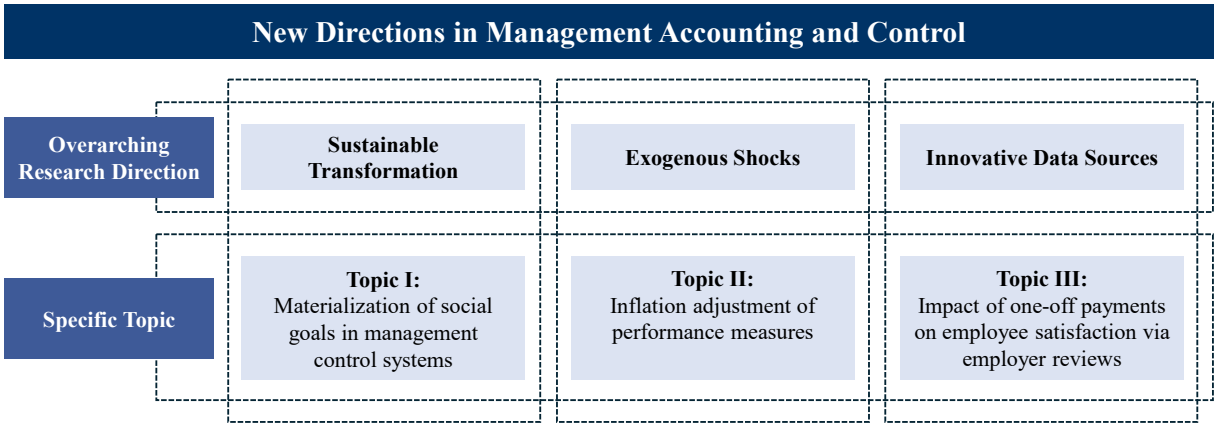

Figure 1: Overview of the dissertation's overarching research directions and specific topics

Sustainable transformation

One of the most pressing challenges of our time is undoubtedly the imperative for sustainable transformation. Former United Nations Secretary-General Ban Ki-moon famously described climate change as the single biggest health threat facing humanity (UN, 2021; WHO, 2023).

The introduction of policy frameworks such as the Kyoto Protocol in 1997 (UNFCCC, 2025b), the Paris Agreement in 2015 (UNFCCC, 2025a), and the Corporate Sustainability Reporting Directive (CSRD) in 2022 (cf. European Commission, 2025) has placed sustainability at the forefront of global and corporate agendas (Hollensbe et al., 2014). As a result, companies are increasingly required to account for and disclose the environmental and social consequences of their activities (Busco et al., 2024).

At the same time, this development has also stimulated substantial scholarly interest. Management accounting and control cannot evade this debate and must take sustainability and the associated environmental, social, and governance (ESG) considerations into account (Andrew & Baker, 2020; Bebbington & Larrinaga, 2014; Unerman & Chapman, 2014). Accounting practices can play a crucial role in translating sustainability demands into actionable organizational processes, particularly through strategic decision-making, target setting, and policy implementation (Arjaliès & Mundy, 2013; Beusch et al., 2022; De Villiers et al., 2025; Gond et al., 2012). While the ecological pillar of *sustainability management accounting and control* has received significant research attention, knowledge about the social dimension remains limited. Accordingly, there is an urgent need for research examining how organizations actively address pressing issues such as social development and embed social goal orientation as an integral element of their strategies and operations (Creed et al., 2022; Mayer, 2021). Addressing this research gap, the first paper of my cumulative dissertation explores the materialization of social goals in management control systems (MCSs).

Exogenous shocks

In addition to the challenges posed by the need for sustainable transformation, recent years have seen a series of global and geopolitical crises unfold in rapid succession. The outbreak of the COVID-19 pandemic in early 2020, for instance, marked a health emergency of international concern (cf. WHO, 2025). This pandemic crisis was followed on February 24, 2022, by Russia's invasion of Ukraine, which further fueled economic instability around the world (cf. NYT, 2025). Just over one and a half years later, on October 7, 2023, another flashpoint erupted with the Gaza war between the Palestinian Hamas and Israel (cf. UNDP, 2025). Beyond their devastating humanitarian consequences, these crises have also exacerbated economic pressures worldwide, particularly through extremely high inflation rates. The global inflation rate rose from 2.9 percent in 2020 to 8.8 percent in 2022, has since stagnated at a high level (2023: 6.0 percent; 2024: 4.9 percent), and is projected to remain elevated at around 4.0 percent in 2025 (IMF, 2025).

In the organizational context, such crises typically amplify uncertainty and ambiguity, diminish controllability, and constrain reaction times, thereby collectively posing significant threats to companies' goal achievement (Bundy et al., 2017; Pearson & Clair, 1998). Prior research shows that crises create unique challenges for organizations while increasing the importance of effective management control and governance (Carter & Speklé, 2024). At the same time, such control practices evolve in response to crisis-induced uncertainty, as organizations seek to enhance their resilience and ensure operational stability (cf. Asel et al., 2011; Becker et al., 2016; Bedford et al., 2022; Ho et al., 2023; Janke et al., 2014; van der Stede, 2011). In this context, the second paper of my cumulative dissertation examines how the adjustment of performance measures for uncontrollable factors (i.e., exogenous shocks, in this specific case manifested through inflation) affects employee performance.

Innovative data sources

The consequences of such exogenous shocks are far-reaching and indirectly also extend into labor markets. In view of these challenging circumstances, employers are increasingly compelled to implement targeted measures designed to relieve the burden on their employees. This development is also linked to the prevalent shortage of skilled workers, which increasingly empowers employees to select employers that offer the most attractive overall compensation package (Ranta & Ylinen, 2024; Sanati, 2024). Employers, in turn, actively compete for scarce talent and seek strategies for long-term employee retention. To achieve this, companies must provide an appealing working environment comprising both financial and non-financial incentives (Campello et al., 2023; Fauver et al., 2018; Garel & Petit-Romec, 2021).

Particularly in times of crisis characterized by exogenous shocks, such as high inflation rates and the associated general rise in living costs, financial incentives often become decisive factors influencing employees' employer choices. It is therefore unsurprising that higher monetary compensation is positively associated with perceived employer attractiveness (e.g., Bénabou & Tirole, 2006; Dögl & Holtbrügge, 2014; Gneezy et al., 2011). Beyond fixed salaries, variable elements like one-off payments can also be factored into this evaluation. This link is particularly pertinent in these times of great uncertainty, when citizens are suffering under particular strain, which is why the German Federal Government, for instance, has enabled employers to make a tax- and duty-free one-off payment via the inflation compensation premium (cf. The Federal Government, 2022). Ultimately, employee satisfaction is decisive in evaluating these incentive packages for an attractive working environment, as it reflects the company's intangible assets (Edmans, 2011).

An innovative and transparent way of evaluating employee satisfaction is offered by voluntary, crowd-based disclosures on employer review platforms (cf. Hales et al., 2018; Mahlendorf et al., 2023; Symitsi et al., 2021; Teoh, 2018). Leading platforms such as Glassdoor and Kununu capture employer ratings, various dimensions of employee satisfaction, job descriptions, and salary levels. These employer review platforms thus join a variety of novel and innovative data sources that have emerged through advances in digital technologies over the past decade (Grégoire et al., 2024; Mahlendorf et al., 2023). Reviews on these platforms reflect insights from rank-and-file employees and therefore provide a potentially rich source of information on working conditions and employee sentiment (cf. Campbell & Shang, 2022; Hales et al., 2018). The integration of such diverse internal and external data sources enhances the role of management accountants as providers of comprehensive organizational insights and as custodians of a single source of truth. As such, they offer unprecedented granularity and significantly enrich our understanding of organizational dynamics and broader economic phenomena (Grégoire et al., 2024; Jame et al., 2016; Mahlendorf et al., 2023; Teoh, 2018). The third paper of my cumulative dissertation draws on this innovative data source, utilizing reviews from the employer review platform Kununu, to investigate how voluntary one-off payments affect employee satisfaction.

1.2 Research questions

My dissertation contributes to the adaptation of research in management accounting and control to evolving societal dynamics, organizational demands, and technological advancements by providing empirical evidence on three interrelated topics that reflect contemporary circumstances and corporate responses. By doing so, I aim to identify factors that are transforming management accounting and control research and practice, thereby opening new directions for analysis and strategic decision-making while maintaining methodological rigor and theoretical depth. These contributions collectively are intended to enhance our understanding of how organizations can better navigate contemporary challenges. Accordingly, this dissertation seeks to inspire both future academic research and practical endeavors by illustrating their possibilities, limitations, and diverse applications relevant to managerial decision-making.

In addition to its thematic breadth and practical relevance, my dissertation is characterized methodologically by a multi-paradigm approach to management accounting and control research. Each of the three papers employs a distinct methodological perspective, hence my

dissertation synthesizes the respective strengths of these approaches. Qualitative research by means of an explorative interview study in *Paper 1* offers depth of understanding, contextual richness, and the exploration of complex dynamics (cf. Bansal & Corley, 2011; Bettis et al., 2015). The field experiment in *Paper 2* provides controlled real-world relevance capable of capturing behavioral complexities while ensuring external validity (cf. Floyd & List, 2016; Libby et al., 2002; McDaniel & Hand, 1996). Finally, archival data analysis in *Paper 3* contributes objectivity, replicability, and the potential for generalization across contexts (cf. Barnes et al., 2018; Bloomfield et al., 2016). The research questions guiding each of the three papers are briefly outlined below.

The first topic tackled in my dissertation addresses the materialization of corporate social goals in MCSs. Social goals, such as fostering employee well-being, supporting local communities, and ensuring fairness in supply chains, are increasingly recognized as essential for long-term business success and corporate legitimacy (e.g., Banker et al., 2022; Joshi & Li, 2016; Khan et al., 2016; Welch & Yoon, 2022). Despite its importance in both practice and research, existing studies have often approached corporate sustainability as a monolithic concept or disproportionately centered on environmental initiatives, thereby significantly neglecting the social dimension. This gap is particularly pronounced in terms of how organizations translate such social aspirations into concrete managerial practices and control mechanisms that guide day-to-day decision-making (Arjaliès & Mundy, 2013; Gond et al., 2012). The lack of research attention so far is especially surprising given the central role of MCSs in shaping employee behavior, aligning values, and facilitating strategic implementation (Malmi & Brown, 2008). Family businesses provide a promising setting to investigate this phenomenon, as they are often characterized by long-term orientation, distinctive value systems, and pronounced awareness of social responsibility (Berrone et al., 2010; Gomez-Mejia et al., 2011). Yet it remains unclear how such companies operationalize social goals within their MCSs, and which control mechanisms (planning, cybernetic, reward and compensation, administrative, or cultural controls) are most effective in this regard. To bridge this gap, the first paper of my dissertation (co-authored with Mischa Seiter) employs an exploratory interview study guided by the following research question:

RQ1: *How do corporate social goals materialize in MCSs of family businesses?*

While my first paper explores the internal challenge of embedding corporate social goals within MCSs, my second paper in this dissertation shifts the focus to macroeconomic instability and examines the impact of exogenous economic shocks on the interplay of performance measures

and employee behavior. Recent global crises, including the COVID-19 pandemic and the war in Ukraine, have fueled inflationary pressures of historic magnitude. Food prices in Germany, for instance, recorded inflation rates exceeding 20 percent at the beginning of 2023 (Destatis, 2023), causing nominal sales figures to rise drastically, even when actual unit sales stagnated or declined. This phenomenon poses a dilemma for organizations: Should performance measures be adjusted to filter out these uncontrollable inflationary effects, or might such adjustments risk undermining employee motivation? In this context, *standard economic theory* and the *controllability principle* suggest that employees should only be held accountable for outcomes they can meaningfully influence (cf. Antle & Demski, 1988; Holmstrom, 1979, 1982). However, *behavioral research* indicates that employees may resist downward adjustments to their performance metrics, even if such adjustments enhance fairness and transparency (cf. Bol & Smith, 2011; Garvey & Milbourn, 2006). This tension creates an empirical quandary: Does applying the *controllability principle* through inflation-adjusted performance measures improve or impair employee performance? Drawing on a randomized field experiment conducted in supermarkets belonging to a German retail chain, this study provides the first causal evidence on how inflation adjustments to performance measures affect employee behavior. Accordingly, the second paper of my dissertation (co-authored with Maximilian Kohler, Matthias D. Mahlendorf, Mischa Seiter, and Timo Vogelsang) addresses the following research question:

RQ2: *How does the adjustment of performance measures for uncontrollable factors on the difference to a performance reference point affect employees' performance?*

After examining how exogenous economic shocks challenge employee behavior and performance measures in the second paper, the third paper of my dissertation pivots to investigate how discretionary organizational payment affects employee satisfaction. More specifically, I analyze the temporal impact of voluntary one-off payments on employee satisfaction in an era of intensified competition for talent and changing workplace expectations. Today's labor markets are characterized by acute skill shortages, high turnover rates, and a fundamental shift in the relationship between employers and employees (cf. Belo et al., 2017; Golden et al., 2020; Sanati, 2024). Under these circumstances, employers are increasingly taking deliberate measures to relieve their employees during times of crisis. In this environment, companies can supplement traditional compensation structures with discretionary payments designed to signal organizational appreciation. Despite the widespread use of these benefits, little is known about their temporal effects on employee satisfaction. From a *resource-based*

view, employee satisfaction represents a reflection of a company's intangible assets, making it a critical component of a sustainable competitive advantage (Edmans, 2011; Hatch & Dyer, 2004; Shaw et al., 2013). Therefore, drawing on *signaling theory* (cf. Connelly et al., 2011) and *relational contracting* (cf. Gibbons & Henderson, 2012; Grafton & Mundy, 2017), I argue that voluntary one-off payments function as strategic signals that communicate organizational values to employees, thereby influencing their perception of working conditions and overall job satisfaction. However, *behavioral research* indicates potential limitations associated with monetary incentives. While generally successful in motivating short-term behavior, such incentives may lead to diminished effects once withdrawn (cf. Marinescu et al., 2021). This dynamic creates a tension: Voluntary payments may initially boost employee satisfaction but could also create counterproductive expectations if not sustained over time. Using the German Federal Government's inflation compensation premium as voluntary one-off payment and archival crowd-based data of DAX and MDAX companies from the employer review platform Kununu, I investigate how such payments affect employee satisfaction. Thus, the third paper of my dissertation (single authored) discusses the following research question:

RQ3: *How does the voluntary one-off payment by companies affect their employees' satisfaction?*

1.3 Structure of the dissertation

My dissertation is organized into five main chapters. Following the introduction in Chapter 1, Chapters 2 to 4 present the three individual papers, each addressing a crucial overarching research direction in contemporary management accounting and control.

Chapter 2 covers *Paper 1*, which deals with the challenge of sustainable transformation by exploring how corporate social goals materialize in MCSs of family businesses. Drawing on an exploratory interview study with representatives of German family businesses, this study analyzes the role of different MCS elements within Malmi and Brown's (2008) framework (planning, cybernetic, reward and compensation, administrative, and cultural controls) and identifies illustrative mechanisms that facilitate the integration of social goals into corporate practice. In doing so, this paper contributes to the literature on *sustainability management accounting and control* and expands our understanding of how socially oriented goals can be embedded in MCSs. Consequently, this study offers practitioners guidance on evolving from

ad hoc, unstructured social engagement toward a balanced control package that renders social initiatives visible, measurable, and strategically integral.

Paper 2 then examines the application of the *controllability principle* in employee performance measures during periods of economic instability and exogenous shocks in Chapter 3. Based on a randomized field experiment implemented across German retail stores during a period of significant inflation, this study presents the first causal results on the way adjustments for inflation in performance measures influence the behavior of employees. The paper thus contributes to the extensive literature on the *controllability principle*, demonstrating that the relationship between controllability and performance measurement effectiveness is more nuanced than previously understood. These findings carry important implications for organizations designing employee performance measures in volatile economic environments and pave the way for future research.

In Chapter 4, *Paper 3* investigates the effects of voluntary one-off payments (in the form of the German inflation compensation premium) on employee satisfaction through the lens of innovative crowd-based employer review data. Grounded in *signaling theory* and *relational contracting*, this study hypothesizes that voluntary one-off payments act as credible signals of employer appreciation, positively shaping employee satisfaction. At the same time, it also considers the temporal limitations of such measures, as their positive effects may diminish over time once their novelty fades. To investigate these dynamics, the paper utilizes an innovative methodological approach encompassing extensive data on DAX and MDAX companies from the employer review platform Kununu. Hence, by leveraging crowd-based employer review data, this study enriches the literature on employee satisfaction and employer branding in the field of management accounting and control.

To conclude, my dissertation summarizes the major findings and implications, acknowledges limitations, and identifies avenues for future research in Chapter 5. Figure 2 illustrates the conceptual structure of the cumulative dissertation.



Figure 2: Conceptual structure of the cumulative dissertation

References

Andrew, J., & Baker, M. (2020). Corporate Social Responsibility Reporting: The Last 40 Years and a Path to Sharing Future Insights. *Abacus*, *56* (1), 35-65. https://doi.org/10.1111/abac.12181

Antle, R., & Demski, J. S. (1988). The Controllability Principle in Responsibility Accounting. *The Accounting Review*, *63* (4), 700-718.

Arjaliès, D.-L., & Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, *24* (4), 284-300. https://doi.org/10.1016/j.mar.2013.06.003

Asel, J. A., Posch, A., & Speckbacher, G. (2011). Squeezing or cuddling? The impact of economic crises on management control and stakeholder management. *Review of Managerial Science*, *5* (2-3), 213-231. https://doi.org/10.1007/s11846-010-0051-4

Banker, R. D., Ma, X., Pomare, C., & Zhang, Y. (2022). When doing good for society is good for shareholders: importance of alignment between strategy and CSR performance. *Review of Accounting Studies.* Advance online publication. https://doi.org/10.1007/s11142-021-09664-y

Bansal, P., & Corley, K. (2011). The Coming of Age for Qualitative Research: Embracing the Diversity of Qualitative Methods. *Academy of Management Journal*, *54* (2), 233-237. https://doi.org/10.5465/amj.2011.60262792

Barnes, C. M., Dang, C. T., Leavitt, K., Guarana, C. L., & Uhlmann, E. L. (2018). Archival Data in Micro-Organizational Research: A Toolkit for Moving to a Broader Set of Topics. *Journal of Management*, *44* (4), 1453-1478. https://doi.org/10.1177/0149206315604188

Bebbington, J., & Larrinaga, C. (2014). Accounting and sustainable development: An exploration. *Accounting, Organizations and Society*, *39* (6), 395-413. https://doi.org/10.1016/j.aos.2014.01.003

Becker, S. D., Mahlendorf, M. D., Schäffer, U., & Thaten, M. (2016). Budgeting in Times of Economic Crisis. *Contemporary Accounting Research*, *33* (4), 1489-1517. https://doi.org/10.1111/1911-3846.12222

Bedford, D. S., Speklé, R. F., & Widener, S. K. (2022). Budgeting and employee stress in times of crisis: Evidence from the Covid-19 pandemic. *Accounting, Organizations and Society*, *101*, 101346. https://doi.org/10.1016/j.aos.2022.101346

Belo, F., Li, J., Lin, X., & Zhao, X. (2017). Labor-Force Heterogeneity and Asset Prices: The Importance of Skilled Labor. *Review of Financial Studies*, *30* (10), 3669-3709. https://doi.org/10.1093/rfs/hhx070

Bénabou, R., & Tirole, J. (2006). Incentives and Prosocial Behavior. *American Economic Review*, *96* (5), 1652-1678. https://doi.org/10.1257/aer.96.5.1652

Berrone, P., Cruz, C., Gomez-Mejia, L. R., & Larraza-Kintana, M. (2010). Socioemotional Wealth and Corporate Responses to Institutional Pressures: Do Family-Controlled Firms Pollute Less? *Administrative Science Quarterly*, *55* (1), 82-113. https://doi.org/10.2189/asqu.2010.55.1.82

Bettis, R. A., Gambardella, A., Helfat, C., & Mitchell, W. (2015). Qualitative empirical research in strategic management. *Strategic Management Journal*, *36* (5), 637-639. https://doi.org/10.1002/smj.2317

Beusch, P., Frisk, J. E., Rosén, M., & Dilla, W. (2022). Management control for sustainability: Towards integrated systems. *Management Accounting Research*, *54*, 100777. https://doi.org/10.1016/j.mar.2021.100777

Bloomfield, R., Nelson, M. W., & Soltes, E. (2016). Gathering Data for Archival, Field, Survey, and Experimental Accounting Research. *Journal of Accounting Research*, *54* (2), 341-395. https://doi.org/10.1111/1475-679X.12104

Bol, J. C., & Smith, S. D. (2011). Spillover Effects in Subjective Performance Evaluation: Bias and the Asymmetric Influence of Controllability. *The Accounting Review*, *86* (4), 1213-1230. https://doi.org/10.2308/accr-10038

Bundy, J., Pfarrer, M. D., Short, C. E., & Coombs, W. T. (2017). Crises and Crisis Management: Integration, Interpretation, and Research Development. *Journal of Management*, *43* (6), 1661-1692. https://doi.org/10.1177/0149206316680030

Burkert, M., Davila, A., Mehta, K., & Oyon, D. (2014). Relating alternative forms of contingency fit to the appropriate methods to test them. *Management Accounting Research*, *25* (1), 6-29. https://doi.org/10.1016/j.mar.2013.07.008

Busco, C., Giovannoni, E., Riccaboni, A., & Frigo, M. L. (2024). The micro-foundations of corporate purpose: Performance management in dynamic environments. *Management Accounting Research*, *63*, 100890. https://doi.org/10.1016/j.mar.2024.100890

Campbell, D. W., & Shang, R. (2022). Tone at the Bottom: Measuring Corporate Misconduct Risk from the Text of Employee Reviews. *Management Science*, *68* (9), 7034-7053. https://doi.org/10.1287/mnsc.2021.4211

Campello, M., Kankanhalli, G., & Muthukrishnan, P. (2023). Corporate Hiring Under COVID-19: Financial Constraints and the Nature of New Jobs. *Journal of Financial and Quantitative Analysis*, 1-45. https://doi.org/10.1017/s0022109023000522

Carter, M. E., & Speklé, R. F. (2024). Management Control During and After a Crisis: Taking Stock and Looking Ahead. *Journal of Management Accounting Research*, *36* (3), 67-71. https://doi.org/10.2308/JMAR-2024-057

Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, *28* (2-3), 127-168. https://doi.org/10.1016/S0361-3682(01)00027-7

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, *37* (1), 39-67. https://doi.org/10.1177/0149206310388419

Creed, W. E. D., Gray, B., Höllerer, M. A., Karam, C. M., & Reay, T. (2022). Organizing for Social and Institutional Change in Response to Disruption, Division, and Displacement: Introduction to the Special Issue. *Organization Studies*, *43* (10), 1535-1557. https://doi.org/10.1177/01708406221122237

De Villiers, C., Principale, S., Galeotti, R. M., & Cicchini, D. (2025). Accounting for Renewable Energy: Investigating Emerging Topics and Research Pathways. *Business Strategy and the Environment*, *34* (4), 4597-4621. https://doi.org/10.1002/bse.4210

Destatis (2023). *Consumer price index for Germany*. Retrieved August 23, 2023, from https://www.destatis.de/EN/Themes/Economy/Short-Term-Indicators/Basic-Data/vpi041j.html

Dirks, P. M., & Wouters, M. (2025). Performance measurement in dynamic environments. *Management Accounting Research*, *67*, 100941. https://doi.org/10.1016/j.mar.2025.100941

Dögl, C., & Holtbrügge, D. (2014). Corporate environmental responsibility, employer reputation and employee commitment: an empirical study in developed and emerging economies. *The International Journal of Human Resource Management*, *25* (12), 1739-1762. https://doi.org/10.1080/09585192.2013.859164

Drucker, P. F. (1980). *Managing in Turbulent Times* (First ed.). Routledge.

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, *101* (3), 621-640. https://doi.org/10.1016/j.jfineco.2011.03.021

European Commission (2025). *Corporate sustainability reporting*. Retrieved July 6, 2025, from https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

Fauver, L., McDonald, M. B., & Taboada, A. G. (2018). Does it pay to treat employees well? International evidence on the value of employee-friendly culture. *Journal of Corporate Finance*, *50*, 84-108. https://doi.org/10.1016/j.jcorpfin.2018.02.003

The Federal Government (2022). *Inflationsausgleichsprämie: Bis zu 3.000 Euro steuerfrei*. Retrieved March 8, 2025, from https://www.bundesregierung.de/breg-de/themen/entlastung-fuer-deutschland/inflationsausgleichspraemie-2130190

Floyd, E., & List, J. A. (2016). Using Field Experiments in Accounting and Finance. *Journal of Accounting Research*, *54* (2), 437-475. https://doi.org/10.1111/1475-679X.12113

Garel, A., & Petit-Romec, A. (2021). Engaging Employees for the Long Run: Long-Term Investors and Employee-Related CSR. *Journal of Business Ethics*, *174* (1), 35-63. https://doi.org/10.1007/s10551-020-04572-8

Garvey, G. T., & Milbourn, T. T. (2006). Asymmetric benchmarking in compensation: Executives are rewarded for good luck but not penalized for bad. *Journal of Financial Economics*, *82* (1), 197-225. https://doi.org/10.1016/j.jfineco.2004.01.006

Gerdin, J., & Greve, J. (2004). Forms of contingency fit in management accounting research—a critical review. *Accounting, Organizations and Society*, *29* (3-4), 303-326. https://doi.org/10.1016/S0361-3682(02)00096-X

Gibbons, R., & Henderson, R. (2012). Relational Contracts and Organizational Capabilities. *Organization Science*, *23* (5), 1350-1364. https://doi.org/10.1287/orsc.1110.0715

Gneezy, U., Meier, S., & Rey-Biel, P. (2011). When and Why Incentives (Don't) Work to Modify Behavior. *Journal of Economic Perspectives*, *25* (4), 191-210. https://doi.org/10.1257/jep.25.4.191

Golden, J., Mashruwala, R., & Pevzner, M. (2020). Labor adjustment costs and asymmetric cost behavior: An extension. *Management Accounting Research*, *46*, 100647. https://doi.org/10.1016/j.mar.2019.07.004

Gomez-Mejia, L. R., Cruz, C., Berrone, P., & Castro, J. de (2011). The Bind that Ties: Socioemotional Wealth Preservation in Family Firms. *The Academy of Management Annals*, *5* (1), 653-707. https://doi.org/10.1080/19416520.2011.593320

Gond, J.-P., Grubnic, S., Herzig, C., & Moon, J. (2012). Configuring management control systems: Theorizing the integration of strategy and sustainability. *Management Accounting Research*, *23* (3), 205-223. https://doi.org/10.1016/j.mar.2012.06.003

Grafton, J., & Mundy, J. (2017). Relational contracting and the myth of trust: Control in a co-opetitive setting. *Management Accounting Research*, *36*, 24-42. https://doi.org/10.1016/j.mar.2016.07.008

Grégoire, D. A., ter Wal, A. L. J., Little, L. M., Bermiss, S., Kotha, R., & Gruber, M. (2024). Mobilizing New Sources of Data: Opportunities and Recommendations. *Academy of Management Journal*, *67* (2), 289-298. https://doi.org/10.5465/amj.2024.4002

Hales, J., Moon, J. R., & Swenson, L. A. (2018). A new era of voluntary disclosure? Empirical evidence on how employee postings on social media relate to future corporate disclosures. *Accounting, Organizations and Society*, *68-69*, 88-108. https://doi.org/10.1016/j.aos.2018.04.004

Hatch, N. W., & Dyer, J. H. (2004). Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal*, *25* (12), 1155-1178. https://doi.org/10.1002/smj.421

Ho, H., Hofmann, C., & Schwaiger, N. (2023). The Covid-19 pandemic and management controls. *Accounting and Business Research*, *53* (5), 583-607. https://doi.org/10.1080/00014788.2023.2219158

Hollensbe, E., Wookey, C., Hickey, L., George, G., & Nichols, C. V. (2014). Organizations with Purpose. *Academy of Management Journal*, *57* (5), 1227-1234. https://doi.org/10.5465/amj.2014.4005

Holmstrom, B. (1979). Moral Hazard and Observability. *The Bell Journal of Economics*, *10* (1), 74. https://doi.org/10.2307/3003320

Holmstrom, B. (1982). Moral Hazard in Teams. *The Bell Journal of Economics*, *13* (2), 324. https://doi.org/10.2307/3003457

IMF (2025). *Inflation rate, end of period consumer prices*. Retrieved July 11, 2025, from https://www.imf.org/external/datamapper/PCPIEPCH@WEO/WEOWORLD

Jame, R., Johnston, R., Markov, S., & Wolfe, M. C. (2016). The Value of Crowdsourced Earnings Forecasts. *Journal of Accounting Research*, *54* (4), 1077-1110. https://doi.org/10.1111/1475-679X.12121

Janke, R., Mahlendorf, M. D., & Weber, J. (2014). An exploratory study of the reciprocal relationship between interactive use of management control systems and perception of negative external crisis effects. *Management Accounting Research*, *25* (4), 251-270. https://doi.org/10.1016/j.mar.2014.01.001

Joshi, S., & Li, Y. (2016). What Is Corporate Sustainability and How Do Firms Practice It? A Management Accounting Research Perspective. *Journal of Management Accounting Research*, *28* (2), 1-11. https://doi.org/10.2308/jmar-10496

Kaplan, R. S. (2011). Accounting Scholarship that Advances Professional Knowledge and Practice. *The Accounting Review*, *86* (2), 367-383. https://doi.org/10.2308/accr.00000031

Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate Sustainability: First Evidence on Materiality. *The Accounting Review*, *91* (6), 1697-1724. https://doi.org/10.2308/accr-51383

Libby, R., Bloomfield, R., & Nelson, M. W. (2002). Experimental research in financial accounting. *Accounting, Organizations and Society*, *27* (8), 775-810. https://doi.org/10.1016/S0361-3682(01)00011-3

Mahlendorf, M. D., Martin, M. A., & Smith, D. (2023). Innovative Data – Use-cases in Management Accounting Research and Practice. *European Accounting Review*, *32* (3), 547-576. https://doi.org/10.1080/09638180.2023.2213258

Malmi, T. (2016). Managerialist studies in management accounting: 1990–2014. *Management Accounting Research*, *31*, 31-44. https://doi.org/10.1016/j.mar.2016.02.002

Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research*, *19* (4), 287-300. https://doi.org/10.1016/j.mar.2008.09.003

Marinescu, I., Chamberlain, A., Smart, M., & Klein, N. (2021). Incentives can reduce bias in online employer reviews. *Journal of Experimental Psychology: Applied*, *27* (2), 393-407. https://doi.org/10.1037/xap0000342

Martin, M. A. (2020). An evolutionary approach to management control systems research: A prescription for future research. *Accounting, Organizations and Society*, *86*, 101186. https://doi.org/10.1016/j.aos.2020.101186

Mayer, C. (2021). The Future of the Corporation and the Economics of Purpose. *Journal of Management Studies*, *58* (3), 887-901. https://doi.org/10.1111/joms.12660

McDaniel, L. S., & Hand, J. R. M. (1996). The Value of Experimental Methods for Practice-Relevant Accounting Research *Contemporary Accounting Research*, *13* (1), 339-351. https://doi.org/10.1111/j.1911-3846.1996.tb00504.x

NYT (2025). *Russia-Ukraine War*. Retrieved July 7, 2025, from https://www.nytimes.com/news-event/ukraine-russia

Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, *31*, 45-62. https://doi.org/10.1016/j.mar.2016.02.001

Otley, D. T. (1980). The contingency theory of management accounting: Achievement and prognosis. *Accounting, Organizations and Society*, *5* (4), 413-428. https://doi.org/10.1016/0361-3682(80)90040-9

Pearson, C. M., & Clair, J. A. (1998). Reframing Crisis Management. *The Academy of Management Review*, *23* (1), 59. https://doi.org/10.2307/259099

Pedroso, E., & Gomes, C. F. (2024). The current role of management accounting: paradigm shift and future challenges. *Journal of Accounting & Organizational Change*, *20* (2), 307-333. https://doi.org/10.1108/JAOC-05-2022-0086

Ranta, M., & Ylinen, M. (2024). Employee benefits and company performance: Evidence from a high-dimensional machine learning model. *Management Accounting Research*, *64*, 100876. https://doi.org/10.1016/j.mar.2023.100876

Sanati, A. (2024). How Does Labor Mobility Affect Corporate Leverage and Investment? *Journal of Financial and Quantitative Analysis*, 1-39. https://doi.org/10.1017/S0022109024000115

Shaw, J. D., Park, T.-Y., & Kim, E. (2013). A resource-based perspective on human capital losses, HRM investments, and organizational performance. *Strategic Management Journal*, *34* (5), 572-589. https://doi.org/10.1002/smj.2025

Symitsi, E., Stamolampros, P., Daskalakis, G., & Korfiatis, N. (2021). The informational value of employee online reviews. *European Journal of Operational Research*, *288* (2), 605-619. https://doi.org/10.1016/j.ejor.2020.06.001

Teoh, S. H. (2018). The promise and challenges of new datasets for accounting research. *Accounting, Organizations and Society*, *68-69*, 109-117. https://doi.org/10.1016/j.aos.2018.03.008

UN (2021). *On climate and health*. Retrieved July 5, 2025, from https://www.un.org/sites/un2.un.org/files/2021/08/fastfacts-health.pdf

UNDP (2025). *War in Gaza*. Retrieved July 7, 2025, from https://www.undp.org/war-gaza

Unerman, J., & Chapman, C. (2014). Academic contributions to enhancing accounting for sustainable development. *Accounting, Organizations and Society*, *39* (6), 385-394. https://doi.org/10.1016/j.aos.2014.07.003

UNFCCC (2025a). *The Paris Agreement: What is the Paris Agreement?* Retrieved July 6, 2025, from https://unfccc.int/process-and-meetings/the-paris-agreement

UNFCCC (2025b). *What is the Kyoto Protocol?* Retrieved July 6, 2025, from https://unfccc.int/kyoto_protocol

van der Stede, W. A. (2011). Management Accounting Research in the Wake of the Crisis: Some Reflections. *European Accounting Review*, *20* (4), 605-623. https://doi.org/10.1080/09638180.2011.627678

van der Stede, W. A. (2015). Management Accounting: Where From, Where Now, Where To? *Journal of Management Accounting Research*, *27* (1), 171-176. https://doi.org/10.2308/jmar-51059

van der Vegt, G. S., Essens, P., Wahlström, M., & George, G. (2015). Managing Risk and Resilience. *Academy of Management Journal*, *58* (4), 971-980. https://doi.org/10.5465/amj.2015.4004

Welch, K., & Yoon, A. (2022). Do high-ability managers choose ESG projects that create shareholder value? Evidence from employee opinions. *Review of Accounting Studies*, 1-28. https://doi.org/10.1007/s11142-022-09701-4

Wenzel, M., Stanske, S., & Lieberman, M. B. (2021). Strategic responses to crisis. *Strategic Management Journal*, *42* (2), 7-18. https://doi.org/10.1002/smj.3161

WHO (2023). *Climate change and noncommunicable diseases: connections*. Retrieved July 5, 2025, from https://www.who.int/news/item/02-11-2023-climate-change-and-noncommunicable-diseases-connections

WHO (2025). *Coronavirus disease (COVID-19) pandemic*. Retrieved July 7, 2025, from https://www.who.int/europe/emergencies/situations/covid-19

Zengul, F. D., Oner, N., Byrd, J. D., & Savage, A. (2021). Revealing Research Themes and Trends in 30 Top-ranking Accounting Journals: A Text-mining Approach. *Abacus*, *57* (3), 468-501. https://doi.org/10.1111/abac.12214

2 How Do Corporate Social Goals Materialize in Management Control Systems? An Exploratory Study in Family Businesses

Authors:	Marvin Kalla; Mischa Seiter
Presented at:	2022 AAA Management Accounting Section Midyear Meeting in Portland, USA 2022 Danube Conference at Vienna University of Economics and Business in Vienna, Austria
Acknowledgements:	The authors are grateful to the support of the Péter Horváth Foundation and the Foundation for Family Businesses. Moreover, the authors would like to thank Hannele Mäkelä and two anonymous reviewers for their constructive comments. An earlier version of this article has benefited from feedback during the AAA Management Accounting Section Midyear Meeting in 2022. The authors would like to thank the participants for the discussion on this occasion.
Published in:	Qualitative Research in Accounting & Management, Emerald Publishing
Citation:	Kalla M, Seiter M (2025), "How do corporate social goals materialize in management control systems? An exploratory study in family businesses". *Qualitative Research in Accounting & Management*, Vol. 22 No. 4-5 pp. 430–472, https://doi.org/10.1108/QRAM-08-2022-0124
Copyright notice:	This article is © 2025 Emerald Publishing Limited and permission has been granted for this version to appear here https://oparu.uni-ulm.de/items/5e4a6d20-a185-47c7-a39e-882b366be1d9. Emerald does not grant permission for this article to be further copied/distributed or hosted elsewhere without the express permission from Emerald Publishing Limited.

Abstract

Purpose – Growing stakeholder and regulatory pressures are forcing companies to make sustainability a core part of their corporate strategy. Consequently, this development necessitates adjustments in management control systems (MCSs). However, research on the social dimension of sustainability in this regard remains limited. Our study aims to fill this void by examining how corporate social goals materialize in MCSs of family businesses.

Design/methodology/approach – Based on semi-structured interviews with representatives from eleven German family businesses, we identify the materialization of social goals in MCSs and classify these manifestations according to Malmi and Brown's MCS framework. We focus on family businesses as scope of our investigation as they are widely recognized for their strong social goal orientation.

Findings – We identify a large variety of controls used to materialize social goals in MCSs supporting the package approach. Furthermore, we find that cultural controls play a dominant role in such endeavors, particularly in smaller companies, while larger companies exhibit a higher degree of the materialization of social goals in MCSs in general. However, our respondents often pursue social goals as a necessary by-product of their business activities, rather than seeing them as an equally important obligation to society. Not only are the effects of social initiatives often not actively tracked, but the enforcement of demands from stakeholders and regulations to integrate social sustainability as an integral part of companies' business models also remains limited.

Research limitations/implications – Due to the exploratory research approach, our findings may lack generalizability. Accordingly, this study is intended as an initial exploration of the topic in order to stimulate subsequent research.

Practical implications – We provide insights for companies seeking to incorporate social goals in their MCSs, offering guidance on initial steps toward a more structured integration.

Social implications – Our study provides a better understanding of how social goal orientation can be materialized in MCSs, laying a foundation for the stronger pursuit of corporate social goals.

Originality/value – We contribute to reducing the gap of mainly environmentally-focused approaches to sustainability in accounting studies and advance the literature by introducing insights on the materialization of social goals in MCSs.

Keywords: sustainability; social goals; management control systems; family businesses

2.1 Introduction

Long-term investment in sustainability is increasingly required, and companies are challenged to behave in environmentally sustainable and socially responsive ways (Arjaliès and Mundy, 2013; Contrafatto and Burns, 2013). While this debate is currently more relevant than ever, it has been present in literature for a long time. For instance, Bowen (1953) emphasized the need for businesspeople to take into account the objectives and values of society when making decisions. Ramanathan (1976) as well as Bowman and Haire (1976) elaborated that companies' impact on society needs to be consistent with social goals and aspirations, even though this might be in conflict with financial performance. Davis (1960) even brought up the argument that socially responsible business decisions can yield returns and contribute to the company's success in the long term.

Several studies have demonstrated that demand from stakeholders and regulatory pressure force the implementation of sustainability into corporate strategy (e.g., Bartolomeo et al., 2000; Herremans and Nazari, 2016; Porter and Kramer, 2006; Rodrigue et al., 2013). For instance, information on sustainability is taken into consideration by job candidates (Burbano, 2016; Darendeli et al., 2022b; Turban and Greening, 1997), employees (Chen et al., 2020), and investors (Cohen et al., 2023; Flammer, 2013; Friedman and Ormazabal, 2024; Hanlon et al., 2022). Employers act accordingly by increasing their corporate social responsibility (CSR) efforts within the company (Dube and Zhu, 2021) and beyond (de Jong and van der Meer, 2017), even to the extent that CEOs are appointed based on their previous company's social performance (Dai et al., 2023). Additionally, managers need information on economic, social, and ecological criteria in order to balance and improve the company's triple bottom line performance (e.g., Arya et al., 2019; Bansal, 2005; Gond et al., 2012; Joshi and Li, 2016).

Family-run companies in particular are more socially responsible (Liu et al., 2017; Mariani et al., 2023), invest more frequently in CSR activities (Berrone et al., 2010; Mariani et al., 2023), and are more committed to social and ethical goals (Déniz-Déniz and Suárez, 2005; Nekhili et al., 2017) compared to non-family-run companies. This can be argued by the fact that family businesses usually pursue long-term business strategies and therefore make less short-sighted investments (Chen et al., 2008; Lins et al., 2013), as they are primarily interested in preserving their family legacy, including socio-emotional wealth, over generations (cf. Liu et al., 2017;

Patuelli et al., 2022; Stockmans et al., 2010). For this purpose, companies in general need to monitor social issues actively and fully incorporate externality effects into their strategic decision-making in order to obtain legitimacy and the license to operate (Pérez et al., 2007). Consequently, Joshi and Li (2016) argue that the accounting profession also must expand its responsibility and incorporate social goal orientation into management control systems (MCSs). Social goals can be interpreted as voluntary corporate social activities for all stakeholders that go beyond legal requirements and ethical expectations (cf. Carroll, 1979). Initiatives on employee education and health care, the integration of local community interests, as well as codes of conduct are examples of such social goals (Ghosh et al., 2019; Maon et al., 2009).

Several studies find that MCSs are essential for the implementation of sustainability strategies and consequently also for social goal orientation (Durden, 2008; Gond et al., 2012; Norris and O'Dwyer, 2004).[1] However, while there only exist some studies on the materialization of sustainability in MCSs, these studies also mainly focus on the relationship of MCSs with sustainability as a whole or examine environmental initiatives as one aspect of sustainability (e.g., Gond et al., 2012; Lueg and Radlach, 2016). Consequently, very few studies explore social goals and their materialization in MCSs (e.g., Feder and Weißenberger, 2021; Laguir et al., 2019; Hosoda, 2018). Bebbington and Thomson (2013, p. 281) explicitly state that much work in the accounting area is characterized by an "absence of systematic consideration of social aspects of sustainable development […], despite ecological concerns having significant social (and economic) ramifications. It is as if accounting literature has picked up one aspect of sustainable development and extrapolated this to encompass the whole concept.". This is despite the fact that social issues have become just as important as environmental issues (Abraham et al., 2024; Pfister et al., 2024).

In order to address this research gap, the research question of our exploratory qualitative interview study is as follows: How do corporate social goals materialize in MCSs of family businesses? Consequently, we contribute to reducing the gap of mainly environmentally focused approaches to sustainability in accounting and advance the literature by continuing this line of inquiry. We specifically focus on social goals as one aspect of sustainability and provide an exploratory overview on how these social goals materialize in MCSs of German family businesses. We conducted semi-structured interviews with eleven family business representatives, all of whom hold executive positions and represent a broad variety of

[1] See Lueg and Radlach (2016) for a systematic literature review on which MCSs organizations apply in order to manage and evaluate sustainable development.

industries. Family businesses have been observed to be particularly focused on social goal orientation to improve the common good of society (McGuire et al., 2012; Nekhili et al., 2017).

We explicitly identify control mechanisms that have been implemented to manage and control social goal orientation. Companies can apply these control mechanisms to align employee behavior with their social goal orientation. We find a dominant role of cultural controls in such endeavors. Thus, our study bridges two research domains, and we contribute to a combination of both the literature on sustainability, with its specific dimension of social goal orientation, as well as the literature on management accounting and control.

2.2 Theoretical background

2.2.1 Sustainability and social goal orientation

Corporate sustainability focuses on "meeting the needs of a corporation's current direct and indirect stakeholders without compromising its [the corporation's] ability to meet the needs of future stakeholders as well" (Dyllick and Hockerts, 2002, p. 131). With respect to the three pillars of sustainability (economic, social, and environmental), Schaltegger et al. (2003) add that corporate sustainability management voluntarily contributes to both the sustainable development of the company and the sustainable development of the economy and society as a whole.

As there is no commonly accepted definition of the term "social goals" in today's literature, we draw on its interpretation according to the CSR research domain, where it refers to voluntary corporate social activities for all stakeholders that go beyond legal requirements and ethical expectations (cf. Carroll, 1979). Accordingly, socially responsible companies should at least "not knowingly do anything that could harm their stakeholders" (Campbell, 2007, p. 951). Maon et al. (2009) mention initiatives on employee education and health care as well as the integration of local community interests into decision-making as exemplary CSR activities. In addition, social budgeting, codes of conduct, as well as reporting on equality and human and labor rights are further examples of social goals designed to ensure ethical behavior along the value chain (Adams and Larrinaga, 2019; Ghosh et al., 2019; Martin, 2021). Furthermore, social issue management, for example, stipulates the renunciation of illegal or unethical behavior, relationships with unethical partners, or the distribution of socially undesirable products (Bansal, 2005). Among others, Dhaliwal et al. (2012), Hoi et al. (2013), and Kim et al. (2012)

find that companies exhibiting CSR initiatives are less likely to behave irresponsibly and unconscientiously compared to companies that do not engage in CSR initiatives.

The materialization of social goals can help companies to establish proactive and integrated social initiatives in concert with the corporate strategy by identifying, prioritizing, and addressing the social issues that matter most or that have the biggest impact for the respective stakeholders. Hence, by successfully designing a consistent and appropriate CSR strategy, companies can differentiate themselves from competitors (Porter and Kramer, 2006). This competitive advantage may stem from internal gains via CSR (Jia et al., 2022) or beneficial market reactions (Amiraslani et al., 2022). Likewise, Hanlon et al. (2022) provide evidence that consumers, investors, and employees value social goals in companies, advancing the notion that CSR performance is related to stakeholder value maximization and can lead to desirable outcomes, e.g., higher customer satisfaction, lower cost of capital, and lower turnover compared to companies with poor CSR performance. While some studies argue that sustainability and CSR efforts might be detrimental to financial performance (e.g., Martin and Moser, 2016), especially when it becomes mandatory (Chen et al., 2018; Manchiraju and Rajgopal, 2017), the majority of the literature suggests a positive effect under certain conditions (e.g., Banker et al., 2022; Chen et al., 2022; Elliott et al., 2014; Herremans et al., 1993; Khan et al., 2016; Lins et al., 2024; Naughton et al., 2019; Welch and Yoon, 2022).

Companies that value CSR performance are subject to higher standards than their competitors in terms of moral accountability for their actions, which seemingly affects market reactions (Bartov et al., 2021; Hoi et al., 2013; Inger and Vansant, 2019). This reasoning also coincides with Bartolomeo et al. (2000), who find that social accounting reporting widens the scope of accounting from its traditional focus on financial stakeholders to a broader accountability to external stakeholders in general and to society as a whole, highlighting the increasingly relevant role of CSR. In this context, Lueg and Radlach (2016) conclude that companies often have two main motivations to engage in sustainable development. In the first case, companies pursue a resource-based strategy and consider sustainable development "as a strategic intangible asset which is adopted to improve performance and to create opportunities from innovations and internal changes" (Lueg and Radlach, 2016, p. 159). Porter and Kramer (2006) criticize this pursuit of sustainability goals to promote economic goals, which is often perceived as hypocritical. This is in line with the second motivation Lueg and Radlach (2016) identified. In their second case, companies use sustainable development to uphold legitimacy and comply

with norms and beliefs when they face institutional demands and pressure from stakeholders (cf. Duguay, 2024).

On top of this, increasingly stringent regulatory obligations are requiring companies to publish information on the sustainability of their business activities, for example in the form of the European *Corporate Sustainability Reporting Directive* (CSRD) (European Commission, 2023). Similarly, for example, the *Sustainable Development Goals* (SDGs) of the *United Nations* represent 17 political objectives that are intended to ensure sustainable development worldwide on an economic, social, and ecological level (UN, 2023).

2.2.2 Management control systems

Following the definition of Malmi and Brown (2008, p. 290), we understand management control as "those systems, rules, practices, values and other activities management put in place in order to direct employee behaviour" and MCSs as the respective complete systems, as opposed to a simple rule. MCSs have a central role in strategy-making and alignment of objectives due to their essential contribution during the process of strategy emergence and implementation (Gond et al., 2012; Grabner and Speckbacher, 2016). Accordingly, Gond et al. (2012) suggest that formal controls should support the integration of sustainability into strategy, beyond sole external communication (e.g., reporting or mission statements). As Songini and Pistoni (2012) note, companies need to implement MCSs to guide employee behavior and align their objectives with the goals and strategies of the company in order to embed sustainability practices within their business strategy.

This adoption decision of MCSs differs in time depending on the respective development stage of companies (cf. Davila and Foster, 2005; Davila et al., 2009). Accordingly, financial planning has been found to be the most widely adopted MCS category at an early stage, followed by the human resource planning and strategic planning categories. Financial evaluation systems are typically adopted at a later stage. Moreover, MCSs are especially important for the developing process of young as well as growing companies (Davila and Foster, 2005, 2007). In general, in the early development stages of a company, control and coordination are achieved through frequent and informal interactions. With the company's growth, attention shifts to the development of controls that anchor informal interactions around formalized systems. Therefore, informal cultural controls are more common in smaller companies, while the importance of result-oriented controls increases with company size (Davila, 2005). Finally, company size and the introduction of MCSs are mutually reinforcing (Davila and Foster, 2007).

Malmi and Brown (2008) distinguish between formal and informal controls. Within this construct, formal goals act as contractual obligations and are supposed to control results through feedback and feed forward mechanisms (e.g., performance evaluation or budgeting systems), whereas informal controls rather subconsciously draw employee attention to organizational objectives (e.g., culture, shared norms and values, self-control) (Lueg and Radlach, 2016). Among others, the cultural orientation and mindset of the company, for example in terms of the tone at the top, determine how flexible the company is to respond to challenges (Bansal, 2005; Herremans et al., 2009). In addition, informal controls, for example in form of internal peer pressure, can solidify internal norms and thus serve as an important tool for the company to reach its sustainability goals (Pondeville et al., 2013). It becomes apparent that MCSs should not be monitored separately but need to be considered holistically as a package (e.g., Grabner and Moers, 2013; Malmi and Brown, 2008). For instance, investigating the effect of below-market wages on the performance of companies driven by a social mission, Chen et al. (2020) find that formal management controls influence the effectiveness of cultural controls. If these links are not recognized, there is a risk that isolated interpretations will lead to erroneous conclusions or model under specification (Chenhall, 2003; Fisher, 1998; Malmi and Brown, 2008).

Lueg and Radlach (2016) apply the MCS framework by Malmi and Brown (2008) and conclude that the most frequently reported types of control for sustainable development are administrative and cybernetic controls. As a result, the strength of their framework comes from the broad scope, and we consider the five controls to be ideally suited for materializing social goals of family businesses.[2] In the following, we introduce each of these five controls in the typology of Malmi and Brown (2008).

Planning controls set the goals of the company and the standards to achieve them, thereby directing effort and behavior. Malmi and Brown (2008) differ two types of planning: Action planning comprises the goals and actions for the immediate future as a tactical focus, while long-range planning comprises goals and actions for the medium and long-term as a strategic

[2] There also exist other MCS frameworks in literature, most notably that of Merchant and Van der Stede (2017). Their behavioral command and control perspective comprises results, action, personnel, and cultural controls. Both frameworks emphasize aligning control systems with organizational goals and strategy while integrating formal (e.g., rules, budgets) and informal (e.g., culture, norms) control mechanisms. However, Malmi and Brown (2008) take a broader package approach, highlighting interdependencies between controls and how they complement or undermine each other in guiding employee behavior toward organizational goals. A key difference is Malmi and Brown ’s distinction of planning controls as separate from financial results, whereas Merchant and Van der Stede classify them under results controls. Similarly, action controls in Merchant and Van der Stede ’s framework comprise only part of what Malmi and Brown cover via administrative controls, encompassing policies and procedures.

focus. These planning mechanisms serve as an "ex-ante form of control," establishing goals for each functional area and clarifying expected efforts and behaviors. This alignment across functions ensures a unified direction, thus controlling the activities of individuals and groups (Malmi and Brown, 2008, p. 292).

Cybernetic controls are characterized by measures that enable quantification, standards of performance or targets to be met, a feedback process to compare the outcome of activities with the standard, a variance analysis arising from this feedback, and the ability to modify the system's behavior or underlying activities. Four cybernetic systems are considered in Malmi and Brown's (2008) typology: budgets, financial measures (e.g., return on investment and economic value added), non-financial measures (e.g., total quality management), and hybrids containing both financial and non-financial measures (e.g., balanced scorecard).

Reward and compensation controls focus on motivating and increasing the effort and performance of individuals by attaching rewards to control effort direction, duration, and intensity. Thereby, rewards and compensation intend to achieve congruence between the individuals' goals and activities and those of the company (Malmi and Brown, 2008).

Administrative controls direct employee behavior through the organization of individuals, the monitoring of behavior, and the process of specifying how behaviors are to be performed. Three groups of administrative controls are distinguished: organizational design and structure, governance structures, and procedures and policies (Malmi and Brown, 2008).

Cultural controls are composed of culture-oriented control mechanisms and are based on a shared set of values, beliefs, and social norms which influence their members' thoughts and actions. Three aspects of cultural controls are distinguished: value-based controls as belief systems (e.g., mission, vision, and purpose statements or credos), symbol-based controls as visible expressions (e.g., building or workspace design and dress codes), and clan controls as subcultures within organizations (e.g., socialization process related to professions) (Malmi and Brown, 2008).

2.2.3 Management control systems and sustainability

The emergence of sustainability orientation has developed a growing influence on the management accounting and control literature (Gray, 2010). However, so far, research has primarily focused on either sustainability as a whole or its environmental aspect, whereas it has rarely considered the social component (Figge and Hahn, 2013; Gerged et al., 2024; Johnstone,

2020; Rehman et al., 2021).[3] Arjaliès and Mundy (2013, p. 284) point out that "little is known about the role of management control systems in managing the strategic processes that underpin CSR". Similarly, while companies incorporate both environmental and social considerations into strategic and operational policies, in terms of outcomes at least in the short run, environmental issues appear to take precedence over social issues (Amiraslani et al., 2024). However, MCSs are crucial in responding to social sustainability trends (Wijethilake and Upadhaya, 2020). In this context, the purpose of MCSs is to establish prosocial behavior in companies to achieve corporate goals (Pfister et al., 2024). The few publications that address social sustainability in management accounting and control argue for more empirical research to further understand how the integration of social responsibility in internal controls can be accomplished in practice (Adams and Larrinaga, 2019; Cheffi et al., 2021; Liu, 2018).

Ditillo and Lisi (2016) identify reactive and proactive sustainability orientation as rationales that induce companies to fulfill social and environmental responsibilities. Reactive sustainability orientation is characterized by passive responses to external stimuli and pressure (e.g., from legislation, communities, or media), whereas proactive sustainability orientation is characterized by the intrinsic conviction that sustainability is a fundamental component of the company's business model (Ditillo and Lisi, 2016). Feder and Weißenberger (2021) state that proactiveness is associated with the existence of CSR-related formal as well as informal controls. Formal controls increase CSR engagement of employees who attach high importance to CSR, while informal controls increase CSR engagement of employees when monetary CSR incentives are offered (Spallek et al., 2023). Hence, Jung and Shin (2022) and Knels et al. (2024) emphasize the importance of a balance between formal and informal controls in maximizing the impact of incentives on organizational outcomes.

In this respect, the tone at the top is crucial to establish social goal orientation among employees. For instance, research confirms that employees mirror CEO's frugality (Davidson et al., 2019), and authentic leadership encourages similar employee commitment to social goals (Schuhmacher et al., 2022). Following this, a strong tone at the top positively impacts sustainability performance, as management-driven sustainability efforts cascade through the organization (Billings et al., 2022; Dyck et al., 2023; Pfister et al., 2024). This might include drastic measures, even to the extent of board renewals, to align the corporate culture with

[3] See Ghosh et al. (2019) for a literature review on the relationship between management controls and sustainability strategies. Jollands et al. (2015) use a case study to show the active role that a sustainability focused core value as management control took within an organization.

sustainability goals (Dyck et al., 2023). Specifically, restructuring boards in accordance with diversity and equality quotas shapes the culture of the company and underscores the company's commitment to social values (Billings et al., 2022; Cai et al., 2024). Complementary to this management focus, value-congruent employees that are committed to the social goals of the company should be hired as they are naturally inclined to advance these goals and tend to achieve higher individual performance (Brammer et al., 2007; Chen et al., 2020). While executives may dictate formal CSR policies in a top-down fashion, interactive controls enable employees to contribute equally to a sustainable strategy that incorporates relevant stakeholder opinions (Hosoda, 2018). Although boards can rely on sustainability committees to improve sustainability performance and mitigate respective risks, overall risk oversight by the board plays an overriding role here (Amiraslani et al., 2024). However, more extensive risk oversight by the board tends to lead to better environmental outcomes but worse social outcomes, namely lower monetary benefits for employees and a higher likelihood of social risk incidents (Amiraslani et al., 2024).

One essential control design that is frequently mentioned in literature in this respect is the sustainability balanced scorecard (SBSC). Mio et al. (2022) point out in their literature review on SBSCs that such a formal control system should only be established once a sustainability-oriented corporate culture has been profoundly developed. Most companies, in their pursuit of social responsibility, neglect to materialize these goals in internal control systems such as the SBSC (Liu, 2018), and critics even argue that the use of MCSs in this regard risks subordinating sustainability to financial priorities (Narayanan and Boyce, 2019).

Integrated reporting, another control structure in sustainability accounting, enables companies to communicate their strategy, governance, and performance in the context of their external environment (IFRS, 2022). Thereby, integrated reporting connects sustainability risks and opportunities with financial statements and communicates the added value for stakeholders (Adams and Larrinaga, 2019; Wang et al., 2020). Such sustainability-related information plays an important role in investors' search strategies (Reimsbach et al., 2018), while CSR information is particularly relevant for supply chain decision-making (Darendeli et al., 2022a). As part of integrated reporting, social and relational capital includes shared norms and values, key stakeholder relationships, and corporate reputation, fostering cooperation and a sense of belonging (Jha and Cox, 2015; Sarkar et al., 2001). In this context, it is crucial to use sustainability key performance indicators (KPIs) not only to improve external stakeholder information, but also to achieve better internal decision-making (Barth et al., 2017). By doing

so, companies promote sustainable strategy development (Ghosh et al., 2019), prevent social washing based on external reporting (e.g., environmental, social, and governance ratings, cf. Baker et al., 2024; Basu et al., 2022; Caglio et al., 2020; Reitmaier et al., 2024) or moral licensing (cf. Millar et al., 2023), and align the actions of the management with the interests of relevant stakeholders (Vitolla et al., 2019). In this regard, recent research has addressed mandatory, standardized CSR reporting (e.g., Christensen et al., 2021; Haji et al., 2023). While there is evidence that such external pressure could mitigate social washing and thus encourage companies to pursue social goals, MCSs can serve as internal pressure and push companies toward social goal orientation (Haji et al., 2023). For instance, reporting on human and labor rights provides transparency about a company's social conduct (Adams and Larrinaga, 2019), while supplier codes and policies as a direct control prevent unethical practices in the supply chain, such as child labor (Ghosh et al., 2019).

A further advantage of the materialization of sustainability in MCSs is that it helps to communicate a shared understanding of the corporate sustainability strategy, embed it in other organizational practices, and align stakeholder expectations with the company's actions and values, as well as employee behavior (Bouten and Hoozée, 2013; Ligonie, 2021; Lisi, 2015; Rodrigue et al., 2013). Accordingly, companies following a social goal orientation are found not only to have better external representation but also to benefit financially (Newman et al., 2020), especially when managers have a personal CSR preference (Martin, 2021). Likewise, Feder and Weißenberger (2021) prove a positive relationship between CSR-related MCSs and company performance. Complementary to target setting as an integral component of MCSs (cf. Ioannou et al., 2016), performance evaluation can also contribute to motivating managers' CSR performance (Garrett et al., 2024).

With a different focus, Arjaliès and Mundy (2013) employ Simons' (1995) levers of controls framework to address how companies use MCSs to manage CSR strategy during organizational change. The authors argue that MCSs enable companies to identify and manage CSR-related opportunities and risks and thereby contribute to society's overall sustainability agenda. They interpret sustainable credos or mission and purpose statements as exemplary manifestations of belief systems. Diagnostic use of compensation schemes for CSR activities or CSR performance measures can serve as monitoring and control instruments assuring compliance with external regulations and standards. Finally, interactive CSR controls can foster stakeholder engagement through suggestions for and feedback on CSR initiatives from non-governmental organizations (NGOs), local communities, or investors (Arjaliès and Mundy, 2013).Whether a

certain type of control is adequate here or not strongly depends on the circumstances (Laguir et al., 2019). For instance, high team identity may favor self-managed teams in which peers observe and control each other's actions rather over top-down monitoring (Towry, 2003). Such horizontal controls could be particularly effective with intrinsically motivated employees as they want to drive social goal achievement on their own initiative and prefer to work with like-minded people (Chen et al., 2020). Lastly, Feder and Weißenberger (2021) conclude that managers' perceived importance of CSR, stakeholder expectations, and company proactiveness shape CSR-related formal and informal controls. The authors consider twenty items for formal (e.g., *"We defined internal standards/policies for situations and contexts not regulated explicitly by current law (e.g., bribery)."*) and informal (e.g., *"Our employees are carefully selected whether they fit to our organization's values and norms."*) controls in their survey study, yet they state that additional controls should be considered in the future as their results have limited transferability.

Thus, while there are initial studies highlighting the importance of MCSs in supporting sustainability strategies and indicating that formal and informal controls need to be balanced in this respect, the materialization of social goals in MCSs remains unexplored.

2.2.4 Family businesses as scope of investigation

Family businesses and social goal orientation

Previous literature on CSR in family businesses (see European Commission (2016) for the definition of family businesses) predominantly focuses on three topics, namely the role of family involvement, corporate governance, and sustainability (Mariani et al., 2023). Studies show that family businesses are more socially responsible than non-family businesses (Liu et al., 2017; Mariani et al., 2023). In this regard, the degree of family involvement in governance affects the amount of influence that family values and beliefs exert on the company's social responsibility (Patuelli et al., 2022). In addition, family businesses are generally more committed to social and ethical goals (Déniz-Déniz and Suárez, 2005; Mariani et al., 2023; Nekhili et al., 2017). For instance, family businesses tend to introduce socially desirable innovations (Calabrò et al., 2019) and invest in CSR activities (Berrone et al., 2010; Mariani et al., 2023) more often in comparison to non-family businesses. The reason for this behavior may be found in family businesses' motives for creating value through social involvement, such as by "generating potentially useful goodwill or resources which may prove useful at a later date" (McGuire et al., 2012, p. 1643). These motives in turn add to the firms' socio-emotional wealth (i.e., the reputation, prestige, and identity of the company), which has been found to be more

pronounced in family businesses than in non-family businesses (Curado and Mota, 2021; Gomez-Mejia et al., 2011; Habbershon et al., 2003; McGuire et al., 2012).

Furthermore, family businesses tend to publish more CSR reports (Mariani et al., 2023) and generally benefit more from CSR than non-family businesses (Curado and Mota, 2021). One of the reasons for this is that family businesses generally pursue long-term business strategies and therefore make less short-sighted investments (Chen et al., 2008; Lins et al., 2013; Siciliano and Weiss, 2023). Accordingly, they are arguably less likely to be subject to CEO myopia with regard to CSR commitment as described by Abernethy et al. (2019). This long-term business orientation is founded in the primary goal of family businesses, which is the establishment and preservation of a family legacy over generations (Liu et al., 2017).

Family businesses and management control systems

Considering these findings, our study focuses on the materialization of social goals in MCSs of family businesses as social goal orientation plays a key role here in both strategy and daily operations. Family business employees are inspired by the owning family and thus act in accordance with the family's values and goals even without formalized controls (Einhorn et al., 2021; Speckbacher and Wentges, 2012). However, control via monitoring and incentive systems may help to clarify these goals, thereby enhancing goal alignment among family business members who tend to have heterogeneous attitudes and beliefs (Chrisman, 2019). Another important difference between non-family and family businesses is that the latter tend to utilize more relational (Chrisman, 2019) and cultural controls due to the strong ties and social relations in family businesses (Einhorn et al., 2021). However, business growth may initiate a development towards more formalized and transparent control systems (Ruiz-Palomo et al., 2019).

Previous literature on family businesses has focused on either CSR practices (Mariani et al., 2023; Patuelli et al., 2022) or control systems (Einhorn et al., 2021; Ruiz-Palomo et al., 2019). Little is known about the joint consideration of those two topics. Nonetheless, research shows that there is a wide variety of MCSs used by family businesses (Einhorn et al., 2021), hence providing a rich horizon of potential controls that can be investigated with regard to social goal orientation (Liu et al., 2017; Mariani et al., 2023; Nekhili et al., 2017; Patuelli et al., 2022).

2.3 Method

We conducted a semi-structured interview study in German family businesses. In view of the broad thematic scope and the lack of existing knowledge about the role social goals play in MCSs, this approach is intended to provide an initial fundamental overview of the topic. For this purpose, the interview statements were analyzed qualitatively. In this way, concrete cases of the materialization of social goals in MCSs could be identified. The interviews were conducted in German by telephone between February and March 2021 and lasted an average of 70 minutes. Each interview was recorded with permission and was fully transcribed. As the original interviews were conducted in German, these transcripts were translated into English by the first author and reviewed by the second author and henceforth used in the analysis.

We address our research question by drawing on qualitative data collected from eleven semi-structured in-depth interviews with managers from German family businesses. Given our purpose to explore the materialization of social goals in MCSs, we selected companies that were expected to follow a social goal orientation, based on an analysis of their websites and sustainability reports. In order to reduce the risk of social washing as far as possible, we selected family businesses for our sample that could be expected to have a credible social goal orientation. Analyzing their websites and sustainability reports additionally added to the verification of the materiality of the respondents' statements. Each respondent was informed in advance that the interview would be reported in a format in which statements could not be attributed to certain individuals or institutions. We considered that such assurances would further enhance the quality of responses and reduce the likelihood of social washing by ensuring that respondents could speak freely. Furthermore, these statements made by our eleven different respondents independently of each other coincide in various areas of the reported materialization of social goals in MCSs. Within this scope of investigation, the respondents were selected according to purposive sampling to obtain a diverse cross-section of company representatives (Silverman, 2021).

Accordingly, the sampling strategy was based on the goal of considering family businesses of different sizes (regarding headcount and revenue) and across a variety of industries. This procedure was intended to increase the chance of observing differing issues and approaches in relation to the phenomena under investigation and to prevent misinterpretation of results by potential size or industry bias of social goal orientation. In line with this goal, our interview sample included companies with approximately 50 to 31,000 employees and an annual revenue

between approximately 40 million euros and 6.4 billion euros. Additionally, our respondents predominantly hold management positions (mainly CEOs and CFOs). These positions give them the best possible insight into the company's operations as well as its respective social goal orientation and therefore make them ideally suited to our investigation.

Following this classification of the scope of investigation and the sample selection, a set of respondents emerged that was ideally suited to explore the research question on the materialization of social goals in MCSs. Nevertheless, it is self-evident that our results are far from representing a saturation of knowledge. Rather, this work is intended as an exploration of this issue in order to pave the way for subsequent studies by providing a fundamental overview. Table 1 presents a summarizing overview of the individuals constituting our interview sample. We use the designations R1 to R11 to refer to the respective respondents and their statements.

Table 1: Interview sample

Interview	Industry	Position
R1	Mechanical engineering (extraction technology)	Chief Executive Officer
R2	Imaging and optics	Chief Financial Officer
R3	Furniture manufacturing	Chief Executive Officer
R4	Electrical engineering (power supplies)	Chief Financial Officer
R5	Mechanical engineering (system components)	Chief Human Resources Officer
R6	Heating, ventilation, and air conditioning	Chief Executive Officer
R7	Safety engineering	Chief Financial Officer
R8	Foundry and filtering	Director Family Office
R9	Food retail	Chief Executive Officer
R10	Logistics	Director Quality and Environmental Management
R11	Heating, ventilation, and air conditioning	Chief Executive Officer

The interviews followed a semi-structured format, and a standardized, open-ended interview guide was used to ensure that all questions of interest were covered in all interviews and to minimize the potential for interviewer-induced bias. This guide was initially drawn up based on our literature review and was divided into four core sections, which were further broken down into 25 open-ended main questions and 34 sub-questions. The questions were designed in such a way that they gradually led to the query of the specific materialization of corporate social goals in MCSs. The interview guide was first prepared in English and then translated into German for conducting the interviews. Table A 1 in the appendix provides the complete interview guide.

The first section of the interview guide addresses general background information about the respondents and their respective companies in order to classify the subsequent answers and information thematically. The second section serves as an introduction to the topics of sustainability and social goal orientation and deals with the significance of the respondents' respective corporate purpose. The third section specifically focuses on the social goals and the corresponding initiatives of the respondents. These two latter sections are intended to get a feel for the importance of the sustainability orientation of the respective respondents, to lead specifically to social goals as a part of this, and to explain the context of the study to them. Finally, section four deals with the materialization of corporate social goals in the MCSs of the companies and represents the main focus of the interview. In developing the questions in this section, we were originally guided by the four controls in Merchant and Van der Stede's (2017) framework (results controls, action controls, personnel controls, and cultural controls). In the course of our data analysis, however, we noticed that the findings from the interviews could be assigned in a more holistic way to the controls of the Malmi and Brown (2008) framework and that this made it easier to compare them to the previous outcomes of the literature as this is the most commonly used typology recently. As a result, the allocation of controls was ultimately defined through this framework and the identified materialized social goals are now categorized into the five controls planning, cybernetic, reward and compensation, administrative, as well as cultural.

Consequently, we qualitatively analyzed the interview statements on the materialization of social goals in MCSs using the directed approach of qualitative content analysis. Accordingly, we used Malmi and Brown's (2008) framework on MCSs as a package for deductive category development (Mayring, 2000; Potter and Levine-Donnerstein, 1999) and allocated the materialization of social goals in MCSs from the interview statements to the five controls of this framework following their best fit based on their respective definitions and components (see section 2.2.2). Following this allocation to the controls, the interview statements were categorized into themes within the individual controls. Finally, consistent statements from different respondents were consolidated under these themes in order to derive generalizable key findings. This allowed us to identify patterns of the main concepts that appeared in the qualitative data and then categorize and analyze them into common as well as unique themes. Given the manageable number of interviews, this data processing was carried out manually. The conduct of the interviews as well as the data processing were undertaken by the first author and subsequently reviewed by the second author in order to ensure consistency and uniformity

in interpretation. In addition to this allocation, we derived an assessment of the scope and significance of the controls presented based on the statements of our respondents in section 2.4.6 and section 2.5. This was determined on the one hand by considering the quantity of individual manifestations of the five controls and on the other hand by analyzing their relevance attributed by the respondents. The results of the allocation are presented in the following section 2.4.

2.4 Findings

In sections 2.4.1 to 2.4.5, we first present the materialization of social goals in each of the five controls of Malmi and Brown's (2008) framework, which we derived from the statements of our respondents. The underlying individual overviews of the materialization of social goals in each company can be found in Table A 2 to Table A 12 in the appendix. Subsequently, we infer general insights regarding the distribution of social controls among companies of different characteristics in section 2.4.6.

2.4.1 The materialization of social goals in planning controls

Planning controls are composed of goal-oriented control mechanisms that direct effort and behavior by setting goals and standards to achieve them. These controls ensure that social goals are not only set but are also systematically pursued, fostering accountability and goal-oriented actions across various organizational levels. With regard to the materialization of social goals in planning controls, our respondents mentioned, among other control instruments, employee dialogues involving social factors and guidebooks to manage and control their social goal orientation.

One manifestation of social goals in planning controls is an annual employee dialogue on an informal basis addressing soft social factors (R1; R6; R9). Employee sentiment and company image also play key roles in this regard (R1). Respondent 10 described using an interview guide based on the company's competency model during employee dialogues and a guidebook for defining and evaluating social goals and initiatives. Similarly, another manifestation of planning controls in managing social goals is a blue book summarizing principles on direction, structure, and operations, aiding managers in value-based decision-making (R2; R9; R10). Additionally, this direction can be communicated through employee newsletters, annual reports, or long-term goal setting charts (R9). Table 2 provides a summarizing overview of the main findings regarding the materialization of social goals in planning controls.

Table 2: Overview of the materialization of social goals in planning controls

How do social goals materialize in planning controls?
→ Employee dialogue on informal basis involving soft, social factors & standards, as well as social goal setting
→ Interview guide for employee dialogue covering social topics
→ Guidebooks for examining the scope for action in the definition and evaluation of social goals and initiatives as well as the principles of the company's social direction, structure, and operating model
→ Communicating social goal orientation via employee newsletters, annual reports, goal setting charts, etc.

2.4.2 The materialization of social goals in cybernetic controls

Cybernetic controls are composed of result-oriented control mechanisms that enable the quantification of performance and target achievement as well as the respective modification of underlying activities. With regard to the materialization of social goals in cybernetic controls, our respondents mentioned, among other control instruments, grading systems, social budgets, social key performance indicators, and sustainability reports to manage and control their social goal orientation.

As part of result-oriented controls, grading systems can be used to particularly assess managers' social and leadership skills (R1; R6), while periodic employee surveys can be conducted to query the success of social initiatives (R9), employee satisfaction, employer branding, and the company's values (R7). Consumer analyses, on the other hand, address whether and how the company's social and sustainable orientation is perceived by customers (R9).

Nonetheless, most companies lack a formal or quantitative strategic evaluation of their social initiatives (R1; R3; R6; R7; R8; R9; R10; R11). "Quantification of our social initiatives would be difficult to realize and would entail too much effort – quite apart from the fact that this commitment is a social contribution as a matter of the heart" (R3). The evaluation of social initiatives is drawn rather qualitatively through discussions about what was good and what could still be optimized (R11). Consequently, the companies indicate that they do not pursue a return on investment (ROI) orientation with their social goals (R3; R6). As respondent 9 summed up: "These social measures are decided in a short, informal way, and this flexibility is what makes them successful. Often [what is relevant is] not the actual investment […] but the fact that someone cares and initiates these social initiatives." Related to this, the majority among our respondents stated that social initiatives are considered individually on a case-by-case basis (R1; R2; R3; R6; R7; R9; R10). Often, suggestions for social commitment can also be proposed by employees, people from local communities (R3; R7; R9), or civil society organizations like NGOs, associations, social service providers, or aid organizations (R2; R7).

Consequently, yet to some extent still surprisingly, few companies define a specific social budget, which is dedicated to social goal achievement and distributed among the initiatives (R4; R5; R8; R11). Often, this budget is performance-based and may represent a precise percentage of the company's profit (R8; R11). Respondent 11 described how the members of the company's foundation council regularly organize a "sustainability round-table" to develop social initiatives. To this end, they manage a profit-based budget, donating two thirds to science and education and one third to culture. Respondent 5 outlined a similar case in which the family business established an employee foundation that oversees a fixed annual budget for social goals, allowing employees (monitored by an advisory board consisting of family members) to decide on its use (R5). In a somewhat different approach, the company of respondent 4 operates a points system, giving employees an annual points account that can be used for individual training and education – mandatory for managers and voluntary for others.

Although still uncommon, social goals can also be materialized in key performance indicators, either financially (e.g., amount of charitable donations) or non-financially (e.g., gender ratio). Respondent 2 referred to a specific booklet with criteria for measuring and monitoring quantitative success factors, such as the Net Promoter Score and the Balanced Scorecard, which comprises financial and non-financial measures.

Finally, a consolidated overview of social goals and their management can be found in the sustainability reports of companies (R2; R6; R9; R11). On the one hand, the report itself can be an important information tool to communicate the company's social goals and measures, thus attracting attention and getting all employees on board (R9). On the other hand, through this documentation over time, an assessment of success can be made for all stakeholders by means of pre-post comparisons (e.g., in the form of a comparison of the number of social initiatives realized, social budgets made available, or concrete measures achieved). Table 3 provides a summarizing overview of the main findings regarding the materialization of social goals in cybernetic controls.

Table 3: Overview of the materialization of social goals in cybernetic controls

How do social goals materialize in cybernetic controls?
→ Management grading system (in categories such as social & leadership skills)
→ Surveys on the success of social initiatives and on the company's values as well as consumer analyses on the company's social and sustainable orientation
→ Fixed budgets for social goal achievement, donations, etc. with social purpose; social budgets for employee health management, innovation, research & development, etc.
→ Variable budgets for social goal achievement, donations, etc. with social purpose (e.g., percentage of company profit)
→ Performance measurement systems & KPIs with social indicators (e.g., Sustainable Balanced Scorecard, job tenure & labor turnover rate, accidents & cases of corruption at work)
→ Sustainability report & sustainability officer documenting & evaluating performance

2.4.3 The materialization of social goals in reward and compensation controls

Reward and compensation controls are composed of motivation-oriented control mechanisms that target the effort and performance of employees. With regard to the materialization of social goals in reward and compensation controls, our respondents mentioned, among other control instruments, social goal setting and incentivization, social employee benefits, as well as assignment of meaningful social initiatives to manage and control their social goal orientation.

In terms of reward and compensation, it is important to set appropriate incentives for employees regarding the financial aspect and, above all, the social orientation of corporate activities (R8). Respondent 9 emphasized, "Ideally, employees are intrinsically motivated and see their own purpose in their work, which is in line with the purpose of the company." Therefore, if a company can be a factor of identification and can generate intensified intrinsic motivation through social direction, this may lead to more loyal and long-term employee retention (R1; R2; R8; R9; R10; R11) – particularly in family businesses – which is beneficial to both employers and employees (R8; R10).

Respondents 9 and 10 add that outstanding internal social benefits (e.g., works council, disabled representatives, refugee integration, subsidies for cafeteria or business bikes and gyms, daycare slots, mail and laundry service, financial advice, medical consultation hours, corporate benefit discounts), in combination with appropriate salary, enhance team building and retention. Thereby, these benefits can incentivize employees to maintain their best possible behavior and performance: "It is definitely an objective of our performance-based participation model to motivate our employees to act in a cost-conscious and self-responsible manner" (R9).

Therefore, when a team-oriented leadership style is cultivated, working together toward a common goal can be perceived as control (R1). This cohesion and mutual trust also relate to the internal social goal orientation, because "in the case of strict controls with checklists or

similar control instruments, the human factor is lost and empathy is lacking" (R1). Respondent 1 reasoned that employees are more motivated and concentrated at work if they know that they are contributing to the common good: "In line with Maslow's hierarchy of needs and the rung of self-fulfillment, this social goal orientation could definitely be the reason for enhanced intrinsic motivation." As an example, respondent 1's company gives well performing apprentices responsibility for organizing social initiatives (e.g., planting a company forest, organization of a Christmas market, coordination of an inclusive theater play), thus combining motivation and reward with social goal orientation. Table 4 provides a summarizing overview of the main findings regarding the materialization of social goals in reward and compensation controls.

Table 4: Overview of the materialization of social goals in reward and compensation controls

How do social goals materialize in reward and compensation controls?
→ Setting appropriate incentives regarding financial as well as social orientation by focusing on the human, cultural, & social aspect
→ Company as a factor of identification generating intensified intrinsic motivation through social direction
→ Social employee benefits (e.g., works council, disabled representatives, refugee integration, subsidies for cafeteria or business bikes and gyms, daycare slots, mail and laundry service, financial advice, medical consultation hours, corporate benefit discounts)
→ Incentive system for social goals including bonuses as performance-based payments on operating results based on social pillar (e.g., employee satisfaction or accident rate)
→ Giving employees responsibility for organizing social initiatives (e.g., planting a company forest, Christmas market, inclusive theater play)
→ Employee participation program (profit and capital sharing in the form of participation rights) intrinsically motivating employees

2.4.4 The materialization of social goals in administrative controls

Administrative controls are composed of behavior-oriented control mechanisms that control the organization of individuals and the behavior as well as the respective actions of employees. By institutionalizing social standards, these controls provide a concrete basis for employees to align their actions with the company's social commitment. With regard to the materialization of social goals in administrative controls, our respondents mentioned, among other control instruments, codes of conduct, audits and certifications, the assignment of social responsibility, social committees, as well as corporate and employee foundations to manage and control their social goal orientation.

A common use of administrative controls with respect to procedures and policies occurs in the form of imposed rules and regulations, such as codes of conduct (R4; R5; R7; R9; R11). Such rules and regulations outline social behavioral guidelines related to legal issues like corruption,

antitrust laws, or gifts (R4; R9) for both the internal perspective of employees and the external perspective of suppliers and contractors (R7; R9; R11). For example, respondent 9 mentioned the completion of a supplier questionnaire with social requirements as necessary for cooperation with suppliers and as a guide for employees' decision-making. Similarly, respondent 10 identified a code of ethics with values (e.g., loyalty, sincerity, honesty, reliability) to which employees aspire and against which their actions can be evaluated. This code of ethics can be extended by a whistleblowing system that enables employees to anonymously report violations of these principles and exert social pressure (R10). The internal perspective also includes the compliance management system, which comprises all measures, structures, and processes set up in a company to comply with regulations (R7; R9; R11). On the external side, additional tools include company self-disclosure and ISO certifications (e.g., *ISO 45001* for occupational health and safety or *Qualified Carrier* as quality standard for transport operators) (R10; R11).

Official audits, awards, ratings, and certifications (issued and reviewed, e.g., by organizations or governments) can also credibly attest to a company's successful social goal orientation (R7; R11). By means of such official, external auditing bodies (e.g., S-Rating), companies can take responsibility for themselves as well as regularly scrutinize and advance their social goal orientation, beyond what is required by law (R7; R9). In addition to these official measures, employees' awareness that their company is contributing to the good of society and the environment can also control their behavior. Thus, with the consciousness that personal performance has a direct influence on the social goals of the company, misconduct of employees and control by supervisors could be reduced by assigning social responsibility to these employees through meaningful activities (R1; R8; R9).

In terms of governance structures of administrative controls, CSR committees, composed of executives from various areas of the company and advising on social goals and initiating corresponding projects, are one potential variant (R1). In this context, a sustainability officer can be appointed, who provides impetus for the initiatives and is primarily responsible for their implementation (R9; R11). Such a CSR committee can also be extended by a representative for occupational health management, who can be responsible for studies on the psychological risk assessment of employees (R11). Similarly, an alliance of work can be set up that goes beyond the union's demands and gives employees the opportunity to redefine their weekly working hours, authorize sabbaticals, and exclude dismissals for operational reasons (R4).

Furthermore, an employee foundation can represent the social understanding of the founder of the family business with the purpose of supporting employees in need (R5). For example, the foundation in respondent 5's company is managed by five employees from different areas of the company as a board of directors and an advisory board consisting of family members. Alternatively, the social commitment of the owner family can be expressed in a corporate foundation, which serves both as a control instrument (R2; R9; R11) and as a means to safeguard the company and its tradition for decades (R11). When selecting concrete aid projects in this context, respondent 9 maintains a close connection to the company's value chain and cooperates with certified aid organizations, which in turn guarantees authenticity. Social projects such as the sponsorship of culture, charities, and education (e.g., donations for hospitals) therefore represent the corporate purpose (R11). Additionally, this foundation has established a non-profit subsidiary that conducts research and provides scientific studies to society free of charge – serving as a control mechanism by authentically embodying the company's social goal orientation and communicating it towards employees (R11).

Family businesses may also have special committees – consisting of, for example, members of the family as shareholders and the management – that meet quarterly and propose, discuss, and evaluate social initiatives on personal matters (R8). Respondent 6 referred to a similar scenario: namely, a dedicated steering committee consisting of, among others, representatives of the management, the HR department, a business association, and an economic development agency. Together, they decide on social goals and initiatives in order to make their region more attractive (R6). Similarly, respondent 7 described a decision-making body – composed of a representative of the works council, the HR manager, and a representative of the management – which deliberates on social goals and initiatives (e.g., Girls' Day, integration day for refugees, support for the Children's Fund, subsidies for public transport and business bikes, etc.). Table 5 provides a summarizing overview of the main findings regarding the materialization of social goals in administrative controls.

Table 5: Overview of the materialization of social goals in administrative controls

How do social goals materialize in administrative controls?
→ Code of conduct, code of ethics, compliance management system, supplier questionnaire, etc. containing social behavioral guidelines for day-to-day business decisions
→ Whistleblowing system to report violations of social behavior
→ Audits, awards, certifications, ratings, own inspection certificates, etc. on social circumstances
→ Intrinsically motivated employees can take on more responsibility and perceive a lower need for control by supervisors if their personal performance has a direct influence on the social goals of the company
→ Family/CSR/steering committee, round table, alliance of work, etc. advising on social goals, initiating corresponding projects, and evaluating them
→ Corporate foundation & employee foundation advising on social goals and initiating corresponding projects
→ Non-profit subsidiary providing scientific studies to society free of charge

2.4.5 The materialization of social goals in cultural controls

Cultural controls are composed of culture-oriented control mechanisms based on a shared set of values, beliefs, and social norms within a specific group of individuals. With regard to the materialization of social goals in cultural controls, our respondents mentioned, among other control instruments, tone at the top, guiding principles and mission statements, standardized social questions in job interviews, querying of cultural fit, as well as social training and education to manage and control their social goal orientation.

In order to successfully and permanently incorporate social goals in the core of the company and employees' day-to-day work, managers must lead by example by credibly exemplifying the corresponding values in the front line (e.g., participation in an inclusive theatre play) (R1; R9). The social goal orientation must not be limited to mere communication and specification on paper; rather, it is necessary to follow up words with actions (R1; R8; R9). The realization of these goals must be authentically exemplified from the highest level so that they can be consistently applied to all corporate decisions (R1). Since managers act as multipliers, it is essential for the achievement of social goals that they have the right mindset to initiate change as well as to communicate and exemplify the right values (R10; R11). It is therefore particularly important for family businesses to maintain the values of social goal orientation even when responsibilities change. As respondent 8 described a transition from family leadership to appointed management: Those responsible now had already been familiarized with the values in the preceding years and had been "educated" accordingly.

Through this so-called tone at the top, the management takes on a role model function and initiates social projects hand-in-hand with the employees (R1; R9; R11), fostering a sense of unity and motivating employees to adopt the company's values (R1). Respondent 9 elaborated:

"The most important thing is that these values are communicated personally, are comprehensible to the employees, and are implemented in the respective leadership behavior by the managers. This conviction is much more important than a mission statement that is hanging somewhere on a bulletin board." "The most important thing here is that the social goal orientation is also lived by the organization and that the whole thing does not drift off into a marketing element," respondent 9 added.

At the same time, management should be open to questions and suggestions and, above all, explain the purpose of their social goal orientation (R1; R6; R11). Family businesses in particular are on equal terms with the local citizens and serve as role models for the entire region (R6; R8; R10). A company's culture is unique and represents a long-term competitive advantage, because it can neither be imitated nor built overnight (R9). "Our culture, our operating system is what makes us unique. This is why we get up in the morning and enjoy our work," said respondent 6. In this context, the tone at the top can also be communicated through a family carta, which states that the primary monolithic corporate purpose is to secure the existence of the family business (R5; R11), or an internal employee brochure that informs employees about the company's values (R2; R3). Such documents play an important part in ensuring that each employee individually lives the goals of the company and that its social goal orientation is not limited to mere statements from above (R2; R3). Accordingly, employees are encouraged to engage in charitable and social activities on which they can then report in a company magazine (R10; R11). A similar document exists for external communication in order to make the company's social values equally clear to other stakeholders (R3). Furthermore, as part of the stakeholder dialogue, a relevance matrix can be used to define principles in the areas of working and living conditions, efficiency, and fairness (R9).

Apart from a few publicly communicated sustainability initiatives, respondents 3 and 5 described rather reluctant external communication of social goals and values due to fear of being accused of social washing. The company instead focuses on convincing customers with its products and transparent production (R3). However, the fact that the family members often are in the public eye means that the tone at the top with regard to social goals and initiatives is transmitted by means of this public presence (R5). In a similar vein is the commitment of respondent 6, who for years volunteered as a spokesperson for the regional sustainability initiative and conveyed the respective tone at the top to all employees as a consequence.

In addition to such initiatives, the definition and communication of guiding principles and mission statements can also ensure that every employee internalizes the social goals and takes

them into account in their day-to-day work (R1; R6; R7; R8; R9; R10; R11). Respondent 4 added that as part of customer and employee branding, their company also communicates its social goals and contribution to the common good in its public image (e.g., through personal speeches, videos, emails, letters, and other communications from the management). Finally, the communication of guiding principles can be addressed both internally and externally. This approach can be special, for instance, if it refers directly to the safety aspects the company's products provide in terms of occupational safety (R7). The same applies to companies whose products contribute to the health of the general public and have been classified as systemically important by the government (R11). Thus, the social contribution here refers not only to additional initiatives but also to the core activities of the company itself (R7; R8). "Hence, in every step of their work the employees are aware of what they are doing it for and what social contribution they are making" (R7).

To initially identify suitable candidates, standardized questions (R1) or personality tests (R9) can be used in job interviews to determine the extent to which the applicant's norms, values, and mindset fit with the corporate culture and the company's social goals (R1). Alternatively, this personality assessment can also happen subconsciously in conversation between applicants and recruiters without values being addressed explicitly (R3; R4; R5; R7; R8; R10). "The values serve as our inner compass, so we definitely make sure that applicants fit this value profile, but we would never systematically query this," respondent 3 explained. Nevertheless, this query of cultural fit can also play a role in internal promotions. In particular, for filling management positions, there is a set of criteria that queries compliance with soft and social factors (R1).

There are also a number of training programs on offer for managers, both classic courses on soft skills and technical training (e.g., language courses, product training, employee management, presentation techniques, etc.) as well as on corporate culture and the company values (R1; R4; R11). The mandatory training for all managers is designed to ensure that the company values are passed on to and internalized by all employees, thereby creating a certain social pressure (R4). Similarly, the company of respondent 5 offers advanced training programs and assessment centers for prospective managers from the entrepreneurial family with internal and external coaches on strategic and cultural direction. Training on CSR, code of conduct, compliance, and data protection guidelines can also contribute to that end of social education (R7). For instance, the company of respondent 6 offered internal training measures instead of short-time work during the COVID-19 pandemic. At the same time, this company offers

workspaces in the production area that are accessible to external parties so that they can contribute their ideas, commission productions, or develop patents (R6).

Other associations or organizations define guiding principles (e.g., 12 sustainability principles of the German Engineering Association) in order to provide support or serve as role models (R1). Moreover, respondent 6 mentioned a smartphone app for the use of onboarding new employees and conveying the company's values. In sum, communicating the corporate culture and especially the company's social goals via these values and standards aims at ensuring not only that employees know what the expected conditions are, but that they also act accordingly (R1; R4). Table 6 provides a summarizing overview of the main findings regarding the materialization of social goals in cultural controls.

Table 6: Overview of the materialization of social goals in cultural controls

How do social goals materialize in cultural controls?
→ Tone at the top: managers exemplifying social values; employee-management conversation on equal terms
→ Family carta defining social principles & business purpose
→ Brochures, company magazines, apps, etc. communicating values & social initiatives for a sense of unity
→ Personal speeches, videos, emails, roadshows, management meet and greet, etc. from the management conveying the tone at the top and highlighting its importance
→ Mission statements, guiding principles, code of conduct, etc. covering social behavioral guidelines to build up common culture & sense of unity
→ Standardized questions or personality tests in job interviews to determine the extent to which applicants' values, standards, & mindset match the corporate culture & social goals
→ Queries for management & leadership positions to check for compliance with soft & social factors
→ Training & education on social values & skills, corporate culture, CSR, compliance, etc. for employees monitored via points accounts/budgets
→ Mandatory training & education courses on social goal orientation & values for managers

2.4.6 The distribution of social controls among family businesses of different characteristics

In selecting our diverse interview sample, we intended to gain insights into family businesses of different sizes, across a variety of industries, and from different perspectives. Based on these characteristics, the materialization of social goals in MCSs of these companies is also distributed differently, providing interesting insights. Nonetheless, findings in this regard must be taken with caution due to the limited sample size and heterogeneity of the sample.

First, we look at the distribution of the materialization of social goals in MCSs of family businesses of different sizes. Our interview sample consists of three small (up to 299 employees and 149 million euros revenue: R1; R3; R8), four medium-sized (between 300 and 2,999 employees and 150 and 349 million euros revenue: R4; R6; R7; R9), and four large (3,000

employees and more and 350 million euros revenue and more: R2; R5; R10; R11) family businesses regarding headcount and revenue. The findings in sections 2.4.1 to 2.4.5 indicate that in the small companies, cultural controls are most pronounced compared to the other controls. Planning controls are hardly present in the small companies; administrative controls, reward and compensation controls, and cybernetic controls are roughly equivalent, but clearly less prominent than cultural controls. The relevance of reward and compensation controls here can be attributed to the importance of intrinsic motivation and the mutual connectedness that social goal orientation entails. Thus, there is a strong tendency that imposed rules and regulations as well as formal quantifications are less present as control mechanisms for social goal orientation in the small companies compared to cultural aspects such as values, beliefs, and social norms. These cultural controls cannot simply be introduced overnight, but rather have a subconscious effect and must be developed successively. While cultural controls are also most pronounced in medium-sized and large companies, cybernetic and administrative controls are considerably more prevalent in these two groups than in small companies. Reward and compensation controls and planning controls are the least pronounced in all three cases. This suggests that larger companies are prioritizing direct control based on specific measurable goals as well as the organization and monitoring of employee behavior. This goes hand in hand with the complexity and the number of hierarchical levels that are inevitably associated with larger companies and therefore make such mechanisms more necessary than in smaller, straightforward companies. This is also related to the difference that there are several controls that were mentioned only by respondents from medium-sized and large companies (e.g., social blue book (R2; R9; R10), sustainability reports (R2; R9; R11), social KPIs (R2), code of conduct (R4; R5; R7; R9; R11), audits and certifications (R7; R9; R11)). This also reflects the tendency of the medium-sized and large companies to rely more on quantitative, formal, and direct controls compared to the small companies. Controls that have only been mentioned by respondents from small companies, however, are rare. With regard to the distribution of the materialization of social goals in MCSs of family businesses of different sizes, it can thus be concluded that cultural controls are most pronounced across all companies and medium and large companies are very similar, whereas small companies differ hereof.

Second, we look at the distribution of the materialization of social goals in MCSs of family businesses regarding the respective positions of our respondents. We distinguish between five CEOs (R1; R3; R6; R9; R11), three CFOs (R2; R4; R7), and three other respondents (R5: Chief Human Resources Officer; R8: Director Family Office; R10: Director Quality and

Environmental Management) who differ from these two positions. The findings in sections 2.4.1 to 2.4.5 show that CEOs predominantly cite cultural controls to materialize social goals in MCSs of their companies. This coincides with the need for tone at the top to lead by example and spread social goal orientation throughout the company. Apart from cultural controls, the CEOs interviewed also refer to the importance of especially administrative controls and also cybernetic controls in order to monitor the realization and quantification of social goals. The relevance of administrative controls, particularly for CEOs, results from ensuring strategic alignment and operational efficiency by providing a structured framework for directing behavior. The remaining two controls, reward and compensation as well as planning, respectively, are not mentioned as frequently in comparison, with the first of the two being referred to more often. Nonetheless, formal and informal controls are quite evenly represented according to the CEOs. This balance of controls for social goal orientation reflects the prudence and broad scope inherent in the role of the CEO. As opposed to this, our respondents holding CFO positions even report a slightly stronger expression of cybernetic controls compared to cultural controls in their companies. This perception, in turn, fits with the financial perspective of CFOs, who may place a higher focus on financial and non-financial quantification measures and budgets compared to soft factors of cultural controls. However, the CFOs also name various aspects of cultural controls, while they cite barely any examples of planning and reward and compensation controls with respect to social goal orientation. The three other respondents who hold neither CEO nor CFO positions have a fairly similar assessment to the CEOs and also cite considerably more cultural controls followed by administrative and cybernetic controls as being the most pronounced. Again, planning and reward and compensation controls rank behind and are expressed with relatively few examples. In terms of the distribution of the materialization of social goals in MCSs of family businesses regarding the respective positions of our respondents it can thus be concluded that CFOs mention slightly more cybernetic controls than cultural controls compared to CEOs who identify a wide range of cultural and administrative controls. Planning and reward and compensation controls are less present from both perspectives.

Third, we look at the distribution of the materialization of social goals in MCSs of family businesses of different industries. For this purpose, we divide our respondents into three groups on an industry-specific basis: The two representatives from mechanical engineering (R1; R5) and the ones from electrical engineering (R4) and safety engineering (R7) form group 1. The two representatives from heating, ventilation, and air conditioning (R6; R11) and the one from

foundry and filtering (R8) constitute group 2. Finally, the representatives of the four remaining industries furniture manufacturing (R3), imaging and optics (R2), food retail (R9), and logistics (R10) form the third group. The findings in sections 2.4.1 to 2.4.5 show that all three industry-specific groups are characterized by a similar distribution of controls: The respondents predominantly mention manifestations of cultural controls followed by administrative controls in this group-specific consideration for the materialization of social goals in MCSs. These two are again followed by cybernetic, reward and compensation, as well as planning controls, each of which, however, has fewer manifestations. The industry-specific analysis therefore does not provide any further insights compared to the preceding considerations with respect to company size and the position of the respondents. With regard to the general distribution of the materialization of social goals in MCSs of family businesses it can thus be concluded that our respondents identified most manifestations of social goals in cultural controls. Besides cultural controls, administrative and cybernetic controls show the second and third most manifestations of social goals, resulting in a healthy balance of soft factors such as values, beliefs, and social norms on the one hand and quantifiable and behavioral measures on the other hand.

2.5 Discussion and conclusion

2.5.1 The role of management control systems in materializing social goals

This study explores the materialization of social goals in MCSs. In the course of our exploratory interview study, we were able to identify a large variety of controls instruments regarding this materialization of social goals in MCSs of family businesses. The scope, and thus presumably also the significance, of the controls in this context were distributed quite differently. Even though there are individual differences in the characteristics of the controls – with regard to the size and industry of the family businesses examined and the positions of the interview respondents – all in all a common pattern emerges. Overall, a healthy balance of soft factors and quantifiable measures to materialize social goals in MCSs was found which is in line with the criteria defined by Jung and Shin (2022), Knels et al. (2024), and Spallek et al. (2023). This is a further indication that MCSs should not be monitored separately but need to be considered holistically as a package (cf. Grabner and Moers, 2013). Consequently, all but one of the respondents mention examples for the materialization of social goals in at least three of the five controls in the framework of Malmi and Brown (2008). However, by far the most findings on the materialization of social goals emerged in the cultural controls. This is certainly due to the fact that sustainability and social goal orientation are both strongly influenced by culture.

Moreover, technological methods and metrics to integrate social goals into MCSs are yet to mature, so managers often rely more on the human factor (Cheffi et al., 2021). Our finding that cultural controls are most dominant particularly in small companies is consistent with the insight that the adoption decision of MCSs differs over time depending on the respective development stage of companies (cf. Davila and Foster, 2005; Davila et al., 2009; Ruiz-Palomo et al., 2019). In this regard, the formal manifestations of result-oriented controls are least represented in small companies (cf. Davila, 2005). In addition, we can also confirm the finding of Davila and Foster (2007) that the adoption of MCSs increases with increasing company size, as the representatives of large companies in our interview study reported more social controls than their small and medium-sized counterparts.

So far, much of the management control research has dealt with cybernetic controls (Malmi and Brown, 2008). Accordingly, it is not surprising that we also found various examples of the materialization of social goals in cybernetic controls. However, it is interesting to note that many of the manifestations do not refer directly to the formal and quantitative evaluation of social initiatives. Rather, the decisive factor for the alignment of employee behavior with company objectives in this context is that the employees' own performance also influences the achievement of the corporate social goals. This result goes hand in hand with the findings of Chrisman (2019), Einhorn et al. (2021), and Speckbacher and Wentges (2012) that although formal controls help to clarify goals, they can also reduce intrinsic motivation to pursue organizational goals, as employees of family businesses are inspired by the owner family and prefer to act in accordance with their values.

Administrative controls, on the other hand, are the most direct form of management control. Our results suggest that employees' awareness that their performance contributes to social goals increases their intrinsic motivation. As a consequence, administrative controls in a social-goal-oriented context can thus contribute to increasing attributed responsibility or reducing need for control and therefore align employee behavior with company objectives (cf. Lueg and Radlach, 2016). Consequently, our results are consistent with Towry's (2003) finding that horizontal incentive systems are more effective than vertical incentive systems in the presence of strong team identity, suggesting the delegation of responsibility for control to self-managed teams.

In the context of incentive systems and benefits, the presence of reward and compensation controls also indicates that achieving congruence between corporate social goals and activities can lead to increased motivation and effort among employees. Consequently, our interview study shows that social goal orientation can be an identification factor that motivates and

incentivizes employees and contributes to their retention (cf. Chen et al., 2020; Flammer and Kacperczyk, 2019).

Similarly, the respondents mentioned a limited range of manifestations of planning controls. Accordingly, it can be concluded from our interview study that social goals in planning controls can be a significant factor for the communication of the corporate social strategy and respective targets (e.g., in the form of employee dialogue and guidebooks) aligning employees' behavior with collective objectives (cf. Arjaliès and Mundy, 2013; Ioannou et al., 2016; Ligonie, 2021).

In contrast to Lueg and Radlach (2016), our results show that the materialization of social goals clearly dominates in cultural controls rather than in administrative and cybernetic controls. However, to put their findings into perspective, the authors argue that companies in their review may have already implemented these controls in advance to measure financial performance and then transferred them to sustainability without considering other controls (Lueg and Radlach, 2016). In contrast to this, our study deals exclusively with controls that were explicitly introduced to manage social goal orientation. This significance of cultural controls also results from the fact that culture cannot be established overnight and is the basis for ensuring that further measures are implemented in a credible and intrinsically motivated manner. Leading by example is fundamental here, while value congruence in recruiting and continuous communication and training also contribute to the steady development of a socially oriented corporate culture, as our results show. Nevertheless, formal controls are also necessary to a certain extent to materialize social goals in MCSs in order to give the endeavor structure and monitorability. Thus, while Chen et al. (2020) emphasize the selection benefits of below-market wages, our findings additionally suggest that standardized questions or personality tests might provide useful information to determine the extent to which applicants' norms, values, and mindset match the corporate culture and social goals.

2.5.2 Challenges and opportunities in materializing social goals in management control systems

Our results do not support the first of the two motivations that Lueg and Radlach (2016) identify as reasons for companies' commitment to sustainable development, which is the pursuit of economic goals. Our respondents cited neither improved performance nor innovation potential as motivation for their social goal orientation. The relationship between social goals and financial effects was scarcely considered, and often the effects of social initiatives were not actively tracked at all (cf. Hanlon et al., 2022). This goes hand in hand with the rather reluctant external communication of our respondents' sustainability initiatives, in order to avoid being

accused of greenwashing and social washing (cf. Basu et al., 2022; Millar et al., 2023; Reitmaier et al., 2024). Instead, the respondents mainly identified their desire to give something back to society and satisfy stakeholders as the motivation for their social activities. Thus, our findings are rather consistent with the second motivation identified by Lueg and Radlach (2016), namely the incentive to engage in sustainable development to uphold legitimacy and comply with norms and beliefs. Our study thus supports the assumption that MCSs can build internal pressure and push companies towards a social goal orientation (cf. Arjaliès and Mundy, 2013; Duguay, 2024; Haji et al., 2023). Specifically with regard to administrative and cultural controls, our respondents indicated that social goals help them to ensure legitimacy in their actions and maintain a unique corporate culture through shared norms, values, and beliefs. This prioritization is certainly also related to our focus on family businesses, which make less short-sighted investments in order to pursue their primary goal of establishing and preserving a family legacy over generations (cf. Chen et al., 2008; Lins et al., 2013; Liu et al., 2017).

When comparing our findings with further literature, a coherent picture emerges. On the one hand, we expand the theoretical survey items from Feder and Weißenberger (2021) with practical examples of materialized social goals in MCSs from our respondents, for instance in the context of tone at the top and employee recruiting based on social values and competencies. On the other hand, Martin (2021) suggests that companies employing managers with a personal CSR preference are better off financially. This is consistent with our finding that companies pay particular attention to the selection of individuals with a similar mindset and related social norms and values as part of cultural controls when recruiting or promoting. This is in line with both the aforementioned value congruence and our finding that the tone at the top as a cultural control is an essential element for social goal orientation (cf. Billings et al., 2022; Dyck et al., 2023; Hanlon et al., 2022; Schuhmacher et al., 2022). Further, our findings are consistent with literature as they show that employees with the same social mindset are intrinsically motivated to act conscientiously, responsibly, and in the company's best interest (cf. Chen et al., 2020; Dhaliwal et al., 2012; Hoi et al., 2013; Kim et al., 2012).

Arjaliès and Mundy (2013) as well as Songini and Pistoni (2012) argue that MCSs can enable companies to identify and manage opportunities and threats associated with the CSR strategy. Our study partially confirms this. While our respondents agreed with the proposed CSR controls and emphasized that the identified control mechanisms helped them to proactively select and implement their social goal orientation, monitoring the effects did not play an explicit role in their respective motivation. Nevertheless, our findings are in accordance with Manthei et al.

(2023) as they indicate that the materialization of social goals in MCSs not only influences direct social goal orientation through these controls but also indirectly creates awareness for this underlying objective.

However, our respondents often pursue social goals as a necessary by-product of their work, rather than seeing them as an equally important obligation to society. This is more in line with a reactive sustainability orientation, which is characterized by passive reactions to external stimuli and less by the conviction that sustainability is a fundamental component of the company's business model (cf. Ditillo and Lisi, 2016). Accordingly, the materialization of social goals in MCSs is still in its infancy. Even though the respondents presented initial concrete approaches in this regard, many of them stated that they are currently at the beginning of a transitional phase. They agree that their approach so far has been rather simplistic and that there is still much potential for optimization. In the long term, social goals should ideally be a fundamental part of the corporate strategy and form the basis of day-to-day activities. The increasing demands of stakeholders and regulatory requirements mentioned make such a central and thorough consideration of social goal orientation increasingly indispensable. It is therefore encouraging that all the companies investigated in our study have already implemented concrete controls for social goals. However, in future these should no longer be regarded as incidental, but should be provided with specific targets, measures, budgets, and capacities in order to place them on the same level as financial goals. An initial starting point for this is a stronger focus on integrated reporting in order to align the importance of social performance more closely with that of financial performance (cf. Adams and Larrinaga, 2019; Caglio et al., 2020; Wang et al., 2020). Similarly, Porter and Kramer (2006, p. 84) argue that: "The mutual dependence of corporations and society implies that both business decisions and social policies must follow the principle of shared value."

In illuminating the various organizational manifestations of social goals in MCSs, our exploratory study contributes to a better understanding of the circumstances of corporate social goal orientation and, based on this understanding, to a more integrated and dynamic use of MCSs that supports the development of new business opportunities. In terms of the practical implications of our study, we additionally provide insights for companies seeking to incorporate social goals into their MCS and offer guidance on initial steps toward a more structured integration. In doing so, we also address the call by Pfister et al. (2024) for empirical research that further explores their prosocial paradigm. Additionally, we contribute to the advancement of the discipline of sustainability management accounting and provide an impetus for future

research. Therefore, looking at how social goals materialize in MCSs can also help companies to better manage and align social activities on their performance side in the future.

2.5.3 Limitations and avenues for future research

Our study is subject to several limitations. First, our sample represents only a specific perspective as we conducted one interview per company in eleven companies with different characteristics and as these respondents are predominantly employed in management positions (mainly CEOs and CFOs). Second, our findings are based on a qualitative, exploratory research approach, and thus the statements are not statistically representative. Due to the nature of self-reported data in the context of our interview study, respondents' answers are based on their individual assessment, which might be evaluated differently by other respondents. Third, as the scope of investigation, the study relates directly to German family businesses and their respective industry characteristics which limits its transferability to other contexts. Therefore, it is self-evident that our results are far from representing a saturation of knowledge.

Accordingly, this study is intended as an initial exploration of the topic in order to motivate subsequent investigations through this overview. Future research can validate our findings and generate a more representative picture by analyzing the materialization of social goals in MCSs in a larger sample, a different institutional setting, as well as using quantitative research methods. In addition, a more in-depth investigation, for example in the form of specific case studies of individual companies, can examine to what extent and through which processes the identified controls are used and, above all, how they can be implemented even more effectively in the core of the corporate strategy. As pointed out by Ghosh et al. (2019), most studies omit the individual employees' perspective. Future research could therefore complement our findings by investigating how the identified controls are perceived by employees and other stakeholders (and possibly shed more light on the interplay between the different types of control).

All in all, we see that MCSs with regard to sustainability have different degrees of maturity. The traditional controls of the economic dimension are very comprehensively designed and widely used. The environmental dimension of controls is also already quite widespread, which is certainly partly attributable to regulatory requirements. In terms of the social dimension, however, our study shows that although companies have social activities and controls implemented, these often tend to be handled as rather unstructured by-products. Our study therefore also provides standard setters with valuable insights into the status quo of the materialization of social goals in MCSs, demonstrates that there is still a need for action here,

and indicates in which direction this could go. Since after all, social goals in MCSs remain the missing piece – part of the plan, but not yet a priority.

References

Abernethy, M. A., Jiang, L., & Kuang, Y. F. (2019). Can organizational identification mitigate the CEO horizon problem? *Accounting, Organizations and Society*, *78*, 101056.

Abraham, J., Olbert, M., & Vasvari, F. (2024). ESG Disclosures in the Private Equity Industry. *Journal of Accounting Research*.

Adams, C. A., & Larrinaga, C. (2019). Progress: engaging with organisations in pursuit of improved sustainability accounting and performance. *Accounting, Auditing & Accountability Journal*, *32*(8), 2367-2394.

Amiraslani, H., Deller, C., Ittner, C. D., & Keusch, T. (2024). Board Risk Oversight and Environmental and Social Performance. *Journal of Accounting and Economics*, 101754.

Amiraslani, H., Lins, K. V., Servaes, H., & Tamayo, A. (2022). Trust, social capital, and the bond market benefits of ESG performance. *Review of Accounting Studies*, 1-42.

Arjaliès, D.-L., & Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, *24*(4), 284-300.

Arya, A., Mittendorf, B., & Ramanan, R. N. V. (2019). Beyond Profits: The Rise of Dual-Purpose Organizations and Its Consequences for Disclosure. *The Accounting Review*, *94*(1), 25-43.

Baker, A. C., Larcker, D. F., McClure, C. G., Saraph, D., & Watts, E. M. (2024). Diversity Washing. *Journal of Accounting Research*.

Banker, R. D., Ma, X., Pomare, C., & Zhang, Y. (2022). When doing good for society is good for shareholders: importance of alignment between strategy and CSR performance. *Review of Accounting Studies*.

Bansal, P. (2005). Evolving sustainably: a longitudinal study of corporate sustainable development. *Strategic Management Journal*, *26*(3), 197-218.

Barth, M. E., Cahan, S. F., Chen, L., & Venter, E. R. (2017). The economic consequences associated with integrated report quality: Capital market and real effects. *Accounting, Organizations and Society*, *62*, 43-64.

Bartolomeo, M., Bennett, M., Bouma, J. J., Heydkamp, P., James, P., & Wolters, T. (2000). Environmental management accounting in Europe: current practice and future potential. *European Accounting Review*, *9*(1), 31-52.

Bartov, E., Marra, A., & Momenté, F. (2021). Corporate Social Responsibility and the Market Reaction to Negative Events: Evidence from Inadvertent and Fraudulent Restatement Announcements. *The Accounting Review*, *96*(2), 81-106.

Basu, S., Vitanza, J., Wang, W., & Zhu, X. R. (2022). Walking the walk? Bank ESG disclosures and home mortgage lending. *Review of Accounting Studies*, *27*(3), 779-821.

Bebbington, J., & Thomson, I. (2013). Sustainable development, management and accounting: Boundary crossing. *Management Accounting Research*, *24*(4), 277-283.

Berrone, P., Cruz, C., Gomez-Mejia, L. R., & Larraza-Kintana, M. (2010). Socioemotional Wealth and Corporate Responses to Institutional Pressures: Do Family-Controlled Firms Pollute Less? *Administrative Science Quarterly*, *55*(1), 82-113.

Billings, M. B., Klein, A., & Shi, Y. C. (2022). Investors' response to the #MeToo movement: does corporate culture matter? *Review of Accounting Studies*, *27*(3), 897-937.

Bouten, L., & Hoozée, S. (2013). On the interplay between environmental reporting and management accounting change. *Management Accounting Research*, *24*(4), 333-348.

Bowen, H. (1953). *Social responsibilities of the businessman.* (1st ed.). New York: Harper.

Bowman, E. H., & Haire, M. (1976). Social impact disclosure and corporate annual reports. *Accounting, Organizations and Society*, *1*(1), 11-21.

Brammer, S., Millington, A., & Rayton, B. (2007). The contribution of corporate social responsibility to organizational commitment. *The International Journal of Human Resource Management*, *18*(10), 1701-1719.

Burbano, V. C. (2016). Social Responsibility Messages and Worker Wage Requirements: Field Experimental Evidence from Online Labor Marketplaces. *Organization Science*, *27*(4), 1010-1028.

Caglio, A., Melloni, G., & Perego, P. (2020). Informational Content and Assurance of Textual Disclosures: Evidence on Integrated Reporting. *European Accounting Review*, *29*(1), 55-83.

Cai, W., Chen, Y., Rajgopal, S., & Azinovic-Yang, L. (2024). Diversity targets. *Review of Accounting Studies*, *29*(3), 2157-2208.

Calabrò, A., Vecchiarini, M., Gast, J., Campopiano, G., Massis, A., & Kraus, S. (2019). Innovation in Family Firms: A Systematic Literature Review and Guidance for Future Research. *International Journal of Management Reviews*, *21*(3), 317-355.

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? an institutional theory of corporate social responsibility. *Academy of Management Review*, *32*(3), 946-967.

Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. *The Academy of Management Review*, *4*(4), 497.

Cheffi, W., Abdel-Maksoud, A., & Farooq, M. O. (2021). CSR initiatives, organizational performance and the mediating role of integrating CSR into management control systems: Testing an inclusive model within SMEs in an emerging economy. *Journal of Management Control*, *32*(3), 333-367.

Chen, C. X., Pesch, H. L., & Wang, L. W. (2020). Selection Benefits of Below-Market Pay in Social-Mission Organizations: Effects on Individual Performance and Team Cooperation. *The Accounting Review*, *95*(1), 57-77.

Chen, S., Chen, X. I., & Cheng, Q. (2008). Do Family Firms Provide More or Less Voluntary Disclosure? *Journal of Accounting Research*, *46*(3), 499-536.

Chen, Y.-C., Hung, M., & Wang, L. L. (2022). Do Depositors Respond to Banks' Social Performance? *The Accounting Review*.

Chen, Y.-C., Hung, M., & Wang, Y. (2018). The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics*, *65*(1), 169-190.

Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, *28*(2-3), 127-168.

Chrisman, J. J. (2019). Stewardship Theory: Realism, Relevance, and Family Firm Governance. *Entrepreneurship Theory and Practice*, *43*(6), 1051-1066.

Christensen, H. B., Hail, L., & Leuz, C. (2021). Mandatory CSR and sustainability reporting: economic analysis and literature review. *Review of Accounting Studies*, *26*(3), 1176-1248.

Cohen, S., Kadach, I., Ormazabal, G., & Reichelstein, S. (2023). Executive Compensation Tied to ESG Performance: International Evidence. *Journal of Accounting Research*, *61*(3), 805-853.

Contrafatto, M., & Burns, J. (2013). Social and environmental accounting, organisational change and management accounting: A processual view. *Management Accounting Research*, *24*(4), 349-365.

Curado, C., & Mota, A. (2021). A Systematic Literature Review on Sustainability in Family Firms. *Sustainability*, *13*(7), 3824.

Dai, X., Gao, F., Lisic, L. L., & Zhang, I. X. (2023). Corporate social performance and the managerial labor market. *Review of Accounting Studies*, *28*(1), 307-339.

Darendeli, A., Fiechter, P., Hitz, J.-M., & Lehmann, N. (2022a). The role of corporate social responsibility (CSR) information in supply-chain contracting: Evidence from the expansion of CSR rating coverage. *Journal of Accounting and Economics*, *74*(2-3), 101525.

Darendeli, A., Law, K. K. F., & Shen, M. (2022b). Green new hiring. *Review of Accounting Studies*, *27*(3), 986-1037.

Davidson, R. H., Dey, A., & Smith, A. J. (2019). CEO Materialism and Corporate Social Responsibility. *The Accounting Review*, *94*(1), 101-126.

Davila, A., & Foster, G. (2005). Management Accounting Systems Adoption Decisions: Evidence and Performance Implications from Early-Stage/Startup Companies. *The Accounting Review*, *80*(4), 1039-1068.

Davila, A., & Foster, G. (2007). Management Control Systems in Early-Stage Startup Companies. *The Accounting Review*, *82*(4), 907-937.

Davila, A., Foster, G., & Li, M. (2009). Reasons for management control systems adoption: Insights from product development systems choice by early-stage entrepreneurial companies. *Accounting, Organizations and Society*, *34*(3-4), 322-347.

Davila, T. (2005). An exploratory study on the emergence of management control systems: formalizing human resources in small growing firms. *Accounting, Organizations and Society*, *30*(3), 223-248.

Davis, K. (1960). Can Business Afford to Ignore Social Responsibilities? *California Management Review*, *2*(3), 70-76.

de Jong, M. D. T., & van der Meer, M. (2017). How Does It Fit? Exploring the Congruence Between Organizations and Their Corporate Social Responsibility (CSR) Activities. *Journal of Business Ethics*, *143*(1), 71-83.

Déniz-Déniz, M. d. l. C., & Suárez, M. K. C. (2005). Corporate Social Responsibility and Family Business in Spain. *Journal of Business Ethics*, *56*(1), 27-41.

Dhaliwal, D. S., Radhakrishnan, S., Tsang, A., & Yang, Y. G. (2012). Nonfinancial Disclosure and Analyst Forecast Accuracy: International Evidence on Corporate Social Responsibility Disclosure. *The Accounting Review*, *87*(3), 723-759.

Ditillo, A., & Lisi, I. E. (2016). Exploring Sustainability Control Systems' Integration: The Relevance of Sustainability Orientation. *Journal of Management Accounting Research*, *28*(2), 125-148.

Dube, S., & Zhu, C. (2021). The Disciplinary Effect of Social Media: Evidence from Firms' Responses to Glassdoor Reviews. *Journal of Accounting Research*, *59*(5), 1783-1825.

Duguay, R. (2024). The Effect of Financial Audits on Governance Practices: Evidence from the Nonprofit Sector. *The Accounting Review*, 1-33.

Durden, C. (2008). Towards a socially responsible management control system. *Accounting, Auditing & Accountability Journal*, *21*(5), 671-694.

Dyck, A., Lins, K. V., Roth, L., Towner, M., & Wagner, H. F. (2023). Renewable Governance: Good for the Environment? *Journal of Accounting Research*, *61*(1), 279-327.

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, *11*(2), 130-141.

Einhorn, S., Heinicke, X., & Guenther, T. W. (2021). Management control packages in family businesses: a configurational approach. *Journal of Business Economics*, *91*(4), 433-478.

Elliott, W. B., Jackson, K. E., Peecher, M. E., & White, B. J. (2014). The Unintended Effect of Corporate Social Responsibility Performance on Investors' Estimates of Fundamental Value. *The Accounting Review*, *89*(1), 275-302.

European Commission (2016). Family business: Internal Market, Industry, Entrepreneurship and SMEs. https://ec.europa.eu/growth/smes/supporting-entrepreneurship/family-business_en. Accessed 08.04.2022.

European Commission (2023). Corporate sustainability reporting. https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en. Accessed 02.09.2023.

Feder, M., & Weißenberger, B. E. (2021). Towards a holistic view of CSR-related management control systems in German companies: Determinants and corporate performance effects. *Journal of Cleaner Production*, *294*, 126084.

Figge, F., & Hahn, T. (2013). Value drivers of corporate eco-efficiency: Management accounting information for the efficient use of environmental resources. *Management Accounting Research*, *24*(4), 387-400.

Fisher, J. G. (1998). Contingency theory, management control systems and firm outcomes: past results and future directions. *Behavioral Research in Accounting*, *10*(1).

Flammer, C. (2013). Corporate Social Responsibility and Shareholder Reaction: The Environmental Awareness of Investors. *Academy of Management Journal*, *56*(3), 758-781.

Flammer, C., & Kacperczyk, A. (2019). Corporate social responsibility as a defense against knowledge spillovers: Evidence from the inevitable disclosure doctrine. *Strategic Management Journal*.

Friedman, H. L., & Ormazabal, G. (2024). The Role of Information in Building a More Sustainable Economy: A Supply and Demand Perspective. *Journal of Accounting Research*.

Garrett, J. B., McPhee, G. P., & Way, D. (2024). Motivating Corporate Social Responsibility Investment and Social Impact through Relative Performance Information. *Journal of Management Accounting Research*, 1-25.

Gerged, A. M., Zahoor, N., & Cowton, C. J. (2024). Understanding the relationship between environmental management accounting and firm performance: The role of environmental innovation and stakeholder integration – Evidence from a developing country. *Management Accounting Research*, *62*, 100865.

Ghosh, B., Herzig, C., & Mangena, M. (2019). Controlling for sustainability strategies: findings from research and directions for the future. *Journal of Management Control*, *30*(1), 5-24.

Gomez-Mejia, L. R., Cruz, C., Berrone, P., & Castro, J. de (2011). The Bind that Ties: Socioemotional Wealth Preservation in Family Firms. *The Academy of Management Annals*, *5*(1), 653-707.

Gond, J.-P., Grubnic, S., Herzig, C., & Moon, J. (2012). Configuring management control systems: Theorizing the integration of strategy and sustainability. *Management Accounting Research*, *23*(3), 205-223.

Grabner, I., & Moers, F. (2013). Management control as a system or a package? Conceptual and empirical issues. *Accounting, Organizations and Society*, *38*(6-7), 407-419.

Grabner, I., & Speckbacher, G. (2016). The cost of creativity: A control perspective. *Accounting, Organizations and Society*, *48*, 31-42.

Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability…and how would we know? An exploration of narratives of organisations and the planet. *Accounting, Organizations and Society*, *35*(1), 47-62.

Habbershon, T. G., Williams, M., & MacMillan, I. C. (2003). A unified systems perspective of family firm performance. *Journal of Business Venturing*, *18*(4), 451-465.

Haji, A. A., Coram, P., & Troshani, I. (2023). Consequences of CSR reporting regulations worldwide: a review and research agenda. *Accounting, Auditing & Accountability Journal*, *36*(1), 177-208.

Hanlon, M., Yeung, K., & Zuo, L. (2022). Behavioral Economics of Accounting: A Review of Archival Research on Individual Decision Makers. *Contemporary Accounting Research*, *39*(2), 1150-1214.

Herremans, I. M., Akathaporn, P., & McInnes, M. (1993). An investigation of corporate social responsibility reputation and economic performance. *Accounting, Organizations and Society*, *18*(7-8), 587-604.

Herremans, I. M., Herschovis, M. S., & Bertels, S. (2009). Leaders and Laggards: The Influence of Competing Logics on Corporate Environmental Action. *Journal of Business Ethics*, *89*(3), 449-472.

Herremans, I. M., & Nazari, J. A. (2016). Sustainability Reporting Driving Forces and Management Control Systems. *Journal of Management Accounting Research*, *28*(2), 103-124.

Hoi, C. K., Wu, Q., & Zhang, H. (2013). Is Corporate Social Responsibility (CSR) Associated with Tax Avoidance? Evidence from Irresponsible CSR Activities. *The Accounting Review*, *88*(6), 2025-2059.

Hosoda, M. (2018). Management control systems and corporate social responsibility: perspectives from a Japanese small company. *Corporate Governance: The international journal of business in society*, *18*(1), 68-80.

IFRS (2022). Integrated Reporting Framework. https://www.ifrs.org/issued-standards/ir-framework/. Accessed 20.05.2023.

Inger, K. K., & Vansant, B. (2019). Market Valuation Consequences of Avoiding Taxes While also Being Socially Responsible. *Journal of Management Accounting Research*, *31*(2), 75-94.

Ioannou, I., Li, S. X., & Serafeim, G. (2016). The Effect of Target Difficulty on Target Completion: The Case of Reducing Carbon Emissions. *The Accounting Review*, *91*(5), 1467-1492.

Jha, A., & Cox, J. (2015). Corporate social responsibility and social capital. *Journal of Banking & Finance*, *60*, 252-270.

Jia, Y., Gao, X., & Billings, B. A. (2022). Corporate Social Responsibility and Technological Innovation. *Journal of Management Accounting Research*, *34*(1), 163-186.

Johnstone, L. (2020). A systematic analysis of environmental management systems in SMEs: Possible research directions from a management accounting and control stance. *Journal of Cleaner Production*, *244*, 118802.

Jollands, S., Akroyd, C., & Sawabe, N. (2015). Core values as a management control in the construction of "sustainable development". *Qualitative Research in Accounting & Management*, *12*(2), 127-152.

Joshi, S., & Li, Y. (2016). What Is Corporate Sustainability and How Do Firms Practice It? A Management Accounting Research Perspective. *Journal of Management Accounting Research*, *28*(2), 1-11.

Jung, S.-M., & Shin, J. Y. (2022). Social Performance Incentives in Mission-Driven Firms. *Management Science*, *68*(10), 7631-7657.

Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate Sustainability: First Evidence on Materiality. *The Accounting Review*, *91*(6), 1697-1724.

Kim, Y., Park, M. S., & Wier, B. (2012). Is Earnings Quality Associated with Corporate Social Responsibility? *The Accounting Review*, *87*(3), 761-796.

Knels, V., Janka, M., & Guenther, T. (2024). Exploring the Duality of Formal and Informal Controls in Driving Eco-Innovations. *European Accounting Review*, 1-29.

Laguir, L., Laguir, I., & Tchemeni, E. (2019). Implementing CSR activities through management control systems. *Accounting, Auditing & Accountability Journal*, *32*(2), 531-555.

Ligonie, M. (2021). Sharing sustainability through sustainability control activities. A practice-based analysis. *Management Accounting Research*, *50*, 100726 (in press).

Lins, K. V., Roth, L., Servaes, H., & TAMAYO, A. N. (2024). Sexism, Culture, and Firm Value: Evidence from the Harvey Weinstein Scandal and the #MeToo Movement. *Journal of Accounting Research*.

Lins, K. V., Volpin, P., & Wagner, H. F. (2013). Does Family Control Matter? International Evidence from the 2008–2009 Financial Crisis. *Review of Financial Studies*, *26*(10), 2583-2619.

Lisi, I. E. (2015). Translating environmental motivations into performance: The role of environmental performance measurement systems. *Management Accounting Research*, *29*, 27-44.

Liu, J.-Y. (2018). An Internal Control System that Includes Corporate Social Responsibility for Social Sustainability in the New Era. *Sustainability*, *10*(10), 3382.

Liu, M., Shi, Y., Wilson, C., & Wu, Z. (2017). Does family involvement explain why corporate social responsibility affects earnings management? *Journal of Business Research*, *75*, 8-16.

Lueg, R., & Radlach, R. (2016). Managing sustainable development with management control systems: A literature review. *European Management Journal*, *34*(2), 158-171.

Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research*, *19*(4), 287-300.

Manchiraju, H., & Rajgopal, S. (2017). Does Corporate Social Responsibility (CSR) Create Shareholder Value? Evidence from the Indian Companies Act 2013. *Journal of Accounting Research*, *55*(5), 1257-1300.

Manthei, K., Sliwka, D., & Vogelsang, T. (2023). Information, Incentives, and Attention: A Field Experiment on the Interaction of Management Controls. *The Accounting Review*, 1-25.

Maon, F., Lindgreen, A., & Swaen, V. (2009). Designing and Implementing Corporate Social Responsibility: An Integrative Framework Grounded in Theory and Practice. *Journal of Business Ethics*, *87*(S1), 71-89.

Mariani, M. M., Al-Sultan, K., & Massis, A. de (2023). Corporate social responsibility in family firms: A systematic literature review. *Journal of Small Business Management*, *61*(3), 1192-1246.

Martin, P. R. (2021). Corporate social responsibility and capital budgeting. *Accounting, Organizations and Society*, *92*, 101236 (in press).

Martin, P. R., & Moser, D. V. (2016). Managers' green investment disclosures and investors' reaction. *Journal of Accounting and Economics*, *61*(1), 239-254.

Mayring, P. (2000). Qualitative Content Analysis. *Forum: Qualitative Social Research*, *1*(2).

McGuire, J., Dow, S., & Ibrahim, B. (2012). All in the family? Social performance and corporate governance in the family firm. *Journal of Business Research*, *65*(11), 1643-1650.

Merchant, K. A., & Van der Stede, W. A. (2017). *Management control systems: Performance measurement, evaluation, and incentives.* (Fourth edition). Harlow, England: Pearson.

Millar, M. I., Shohfi, T. D., Snow, M. C., & White, R. M. (2023). Do green business practices license self-dealing or prime prosociality? Cross-domain evidence from environmental concern triggers. *Accounting, Organizations and Society*, 101497.

Mio, C., Costantini, A., & Panfilo, S. (2022). Performance measurement tools for sustainable business: A systematic literature review on the sustainability balanced scorecard use. *Corporate Social Responsibility and Environmental Management*, *29*(2), 367-384.

Narayanan, V., & Boyce, G. (2019). Exploring the transformative potential of management control systems in organisational change towards sustainability. *Accounting, Auditing & Accountability Journal*, *32*(5), 1210-1239.

Naughton, J. P., Wang, C., & Yeung, I. (2019). Investor Sentiment for Corporate Social Performance. *The Accounting Review*, *94*(4), 401-420.

Nekhili, M., Nagati, H., Chtioui, T., & Rebolledo, C. (2017). Corporate social responsibility disclosure and market value: Family versus nonfamily firms. *Journal of Business Research*, *77*, 41-52.

Newman, A. H., Tafkov, I. D., & Zhou, F. H. (2020). The Effects of Incentive Scheme and Task Difficulty on Employees' Altruistic Behavior Outside the Firm. *Contemporary Accounting Research*, *37*(3), 1512-1535.

Norris, G., & O'Dwyer, B. (2004). Motivating socially responsive decision making: the operation of management controls in a socially responsive organisation. *The British Accounting Review*, *36*(2), 173-196.

Patuelli, A., Carungu, J., & Lattanzi, N. (2022). Drivers and nuances of sustainable development goals: Transcending corporate social responsibility in family firms. *Journal of Cleaner Production*, *373*, 133723.

Pérez, E. A., Ruiz, C. C., & Fenech, F. C. (2007). Environmental management systems as an embedding mechanism: a research note. *Accounting, Auditing & Accountability Journal*, *20*(3), 403-422.

Pfister, J. A., Otley, D., Ahrens, T., Dambrin, C., Darwin, S., Granlund, M., Jack, S. L., Lassila, E. M., Millo, Y., Peda, P., Sherman, Z., & Wilson, D. S. (2024). Performance management in the prosocial market economy: a new paradigm for economic performance and sustainability. *Qualitative Research in Accounting & Management*, *21*(5), 397-443.

Pondeville, S., Swaen, V., & Rongé, Y. de (2013). Environmental management control systems: The role of contextual and strategic factors. *Management Accounting Research*, *24*(4), 317-332.

Porter, M. E., & Kramer, M. R. (2006). Strategy and society: the link between competitive advantage and corporate social responsibility. *Harvard business review*, *84*(12), 78-92, 163.

Potter, W. J., & Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. *Journal of Applied Communication Research*, *27*(3), 258-284.

Ramanathan, K. V. (1976). Toward a Theory of Corporate Social Accounting. *The Accounting Review*, *51*(3), 516-528.

Rehman, S. U., Bhatti, A., Kraus, S., & Ferreira, J. J. M. (2021). The role of environmental management control systems for ecological sustainability and sustainable performance. *Management Decision*, *59*(9), 2217-2237.

Reimsbach, D., Hahn, R., & Gürtürk, A. (2018). Integrated Reporting and Assurance of Sustainability Information: An Experimental Study on Professional Investors' Information Processing. *European Accounting Review*, *27*(3), 559-581.

Reitmaier, C., Schultze, W., & Vollmer, J. (2024). Corporate responsibility and corporate misbehavior: are CSR reporting firms indeed responsible? *Review of Accounting Studies*.

Rodrigue, M., Magnan, M., & Boulianne, E. (2013). Stakeholders' influence on environmental strategy and performance indicators: A managerial perspective. *Management Accounting Research*, *24*(4), 301-316.

Ruiz-Palomo, D., Diéguez-Soto, J., Duréndez, A., & Santos, J. A. C. (2019). Family Management and Firm Performance in Family SMEs: The Mediating Roles of Management Control Systems and Technological Innovation. *Sustainability*, *11*(14), 3805.

Sarkar, M., Echambadi, R., Cavusgil, S. T., & Aulakh, P. S. (2001). The Influence of Complementarity, Compatibility, and Relationship Capital on Alliance Performance. *Journal of the Academy of Marketing Science*, *29*(4), 358-373.

Schaltegger, S., R. Burritt, & Petersen, H. (2003). *An Introduction to Corporate Environmental Management: Striving for Sustainability*. Sheffield, U.K.: Greenleaf Publishing.

Schuhmacher, K., Towry, K. L., & Zureich, J. (2022). Leading by Example in Socially Driven Organizations: The Effect of Transparent Leader Compensation Contracts on Following. *The Accounting Review*, *97*(3), 373-393.

Siciliano, G., & Weiss, D. (2023). Family Ownership Influence on Cost Elasticity. *European Accounting Review*, 1-31.

Silverman, D. (2021). *Qualitative research.* (5E). Los Angeles: Sage.

Simons, R. (1995). *Levers of Control: How Managers use Innovative Control Systems to Drive Strategic Renewal.* Boston: Harvard Business School Press.

Songini, L., & Pistoni, A. (2012). Accounting, auditing and control for sustainability. *Management Accounting Research*, *23*(3), 202-204.

Spallek, F., Bastini, K., & Lachmann, M. (2023). The More, the Merrier? The Behavioral Effects of a Firm's CSR Mission and Monetary CSR Incentives on Employee CSR Engagement. *Journal of Management Accounting Research*, 1-23.

Speckbacher, G., & Wentges, P. (2012). The impact of family control on the use of performance measures in strategic target setting and incentive compensation: A research note. *Management Accounting Research*, *23*(1), 34-46.

Stockmans, A., Lybaert, N., & Voordeckers, W. (2010). Socioemotional Wealth and Earnings Management in Private Family Firms. *Family Business Review*, *23*(3), 280-294.

Towry, K. L. (2003). Control in a Teamwork Environment—The Impact of Social Ties on the Effectiveness of Mutual Monitoring Contracts. *The Accounting Review*, *78*(4), 1069-1095.

Turban, D. B., & Greening, D. W. (1997). Corporate Social Performance and Organizational Attractiveness to Prospective Employees. *Academy of Management Journal*, *40*(3), 658-672.

UN (2023). The 17 Goals. https://sdgs.un.org/goals. Accessed 02.09.2023.

Vitolla, F., Raimo, N., & Rubino, M. (2019). Appreciations, criticisms, determinants, and effects of integrated reporting: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, *26*(2), 518-528.

Wang, R., Zhou, S., & Wang, T. (2020). Corporate Governance, Integrated Reporting and the Use of Credibility-enhancing Mechanisms on Integrated Reports. *European Accounting Review*, *29*(4), 631-663.

Welch, K., & Yoon, A. (2022). Do high-ability managers choose ESG projects that create shareholder value? Evidence from employee opinions. *Review of Accounting Studies*, 1-28.

Wijethilake, C., & Upadhaya, B. (2020). Market drivers of sustainability and sustainability learning capabilities: The moderating role of sustainability control systems. *Business Strategy and the Environment*, *29*(6), 2297-2309.

Appendix

Table A 1: Interview guide

<table>
<tr><th colspan="4">Interview guide</th></tr>
<tr><td>Section 1</td><td>Section 2</td><td>Section 3</td><td>Section 4</td></tr>
<tr><td colspan="4">Section 1 – Background information

Brief introduction of the respondent in terms of
▪ Personal background
▪ Position and tasks in the company

Brief introduction of the company the respondent works for in terms of
▪ Name and year of foundation
▪ Industry
▪ Business model
▪ Products/services
▪ Location
▪ Number of employees
▪ Revenue</td></tr>
<tr><td>Section 1</td><td>Section 2</td><td>Section 3</td><td>Section 4</td></tr>
<tr><td colspan="4">Section 2 – Conceptualization of corporate purpose
Querying the respondents on the definition, conceptualization, components, and characteristics of corporate purpose

1. What do you understand by the term corporate purpose?
2. Does your company define a corporate purpose? If yes, how is it defined and how do you specify it? If no, why not?
3. What measures must be taken to successfully implement a corporate purpose in the company?
4. Who are the primary stakeholders that the corporate purpose should serve?
5. Who should define the corporate purpose? In which area of the company should this be done?
6. What do you see as the advantages and opportunities of a corporate purpose implemented in the company?</td></tr>
</table>

7. **What do you see as the disadvantages and risks of a corporate purpose implemented in the company?**
8. **What differences and distinctions do you see between corporate purpose and related constructs such as**
   - mission and vision
   - CSR and ESG
   - guiding principle, values, standards, etc.?
9. **What is the reason for the existence of your company?**
10. **What practical relevance do you attribute to corporate purpose?**
11. **To what extent is internal communication based on a corporate purpose/reason for existence? How is the corporate purpose/reason for existence communicated internally?**
12. **How important is the acceptance of the corporate purpose/reason for existence by employees as well as managers?**
13. **How do you think corporate purpose can be measured/ evaluated?**
14. **What do you think distinguishes your company's corporate purpose/reason for existence from that of a non-family business?**

Section 1	Section 2	Section 3	Section 4

Section 3 – Social goals and management control systems

Inquiry into the practical relevance of corporate purpose from the point of view of the respondents

15. **What role does socially oriented behavior play for you in principle?**
16. **What social goals does your company pursue?**
    - What is the underlying motivation for this?
    - Which positive effects result from social goals?
    - What difficulties arise from social goals?
17. **How are these initiatives developed and defined?**
18. **How is the success of these initiatives assessed?**
19. **Which areas/departments/people in your company are responsible for social goals?**
20. **Does your company define its own budget for social and charitable activities?**
21. **How do these social goals relate to your company's fundamental strategic direction?**

Section 1	Section 2	Section 3	Section 4

Section 4 – Materialization of social goals in management control systems

Querying the respondents on the materialization of social goals in their management control systems

22. How do social goals materialize in your outcome-oriented controls?

22.1 How do social goals affect the **definition of the overarching corporate objectives**?
22.2 How do social goals affect the **allocation of corporate objectives to key figures**?
22.3 How do social goals affect the **definition of target values**?
22.4 How do social goals affect **performance evaluation**?
22.5 How do social goals affect the **type and design of rewards**?
22.6 How do social goals affect **work performance**?
22.7 How do social goals affect the **quality of decisions**?
22.8 How do social goals affect **knowledge sharing**?
22.9 How do social goals affect **planning accuracy**?
22.10 How do social goals affect **creativity and innovation**?

23. How do social goals materialize in your behavior-oriented controls?

23.1 How do social goals affect **misconduct**?
23.2 How do social goals affect **necessary restrictions**?
23.3 How do social goals affect the **allocation of authority rights**?
23.4 How do social goals affect the **achievement of objectives**?
23.5 How do social goals affect **deviation from targets**?
23.6 How do social goals affect the **degree of monitoring**?
23.7 How do social goals affect the **degree to which responsibility is accepted**?

24. How do social goals materialize in your culture-oriented controls?

24.1 How do social goals affect **corporate culture**?
24.2 How do social goals affect the company's **internal communication of values**?
24.3 How do social goals affect **external communication**?
24.4 How do social goals affect **performance-related compensation**?
24.5 How do social goals affect **group incentive contracts**?
24.6 How do social goals affect **team identification**?
24.7 How do social goals affect **peer pressure**?
24.8 How do social goals affect **tone at the top**?
24.9 How do social goals affect the **implementation of previously communicated statements**?
24.10 How do social goals affect **internal job rotations**?
24.11 How do social goals affect **workplace design and social design elements**?

25. How do social goals materialize in your employee-oriented controls?

25.1 How do social goals affect **self-control and self-motivation**?
25.2 How do social goals affect **employee loyalty**?
25.3 How do social goals affect the **recruiting and deployment of employees**?
25.4 How do social goals affect **training and education**?
25.5 How do social goals affect the **design of tasks and the resources provided**?
25.6 How do social goals affect **personnel development and promotion decisions**?

Table A 2: Overview of the materialization of social goals in company 1

<table>
<tr><td>Industry:
Mechanical engineering (extraction technology)</td><td>Number of employees: 175
Annual revenue (in million €): 50</td><td>Position:
Chief Executive Officer</td></tr>
<tr><td colspan="3">Cultural Controls:
Social initiatives are exemplified at the forefront through a strong tone at the top by the management (e.g., participation in an inclusive theatre play) who lead by example and initiate social projects hand-in-hand with the employees in order to follow up words with actions
Definition of guiding principles that are based on the twelve sustainability principles of the German Engineering Association to ensure that every employee internalizes the social goals and takes them into account in their day-to-day work. Additionally, these guiding principles are communicated externally
Querying social attitudes, norms, and values of applicants using standardized questions in the recruiting process to match mindset with corporate culture and social goals
When making promotion decisions, a catalogue of criteria on values is asked in order to fill management positions with like-minded employees
Academy and benefit program for training & education on social values and skills</td></tr>
<tr><td>Cybernetic Controls:
Managers are assessed using a grading system in various categories, such as social and leadership skills</td><td>Administrative Controls:
Meaningful assignment of activities could reduce misconduct of employees and control by supervisors
CSR committee that is composed of executives from various areas of the company and advises, implements, and monitors on social goals and initiates corresponding projects. The CSR committee meets semi-annually, discusses new projects, and reviews the success of previous projects using an Excel tool</td><td>Reward and Compensation:
Apprentices are given responsibility for organizing social initiatives (e.g., planting a company forest, Christmas market, inclusive theater play)
The team-oriented leadership style induces employees to work toward a common goal. Cohesion and mutual trust relate to the internal social goal orientation and employees are more intrinsically motivated and concentrated at work if they know that they are contributing to social goals and the common good
The company operates as a factor of identification and generates intensified intrinsic motivation through social direction, which leads to more loyal and long-term employee retention</td></tr>
<tr><td colspan="3">Planning:
Annual employee dialogue on a personal, informal basis, which involves soft, social factors, the basic mood among employees, and the corporate image</td></tr>
</table>

Table A 3: Overview of the materialization of social goals in company 2

<table>
<tr><td>Industry:
Imaging and optics</td><td>Number of employees: 31,250
Annual revenue (in million €): 6,400</td><td>Position:
Chief Financial Officer</td></tr>
<tr><td colspan="3">Cultural Controls:
Employee brochure that informs employees about the company’s values and social goals and ensures that each employee individually lives the goals of the company</td></tr>
</table>

▪ The products of the company contribute to the health of the general public (e.g., medical equipment is provided and doctors in developing countries are trained)		
Cybernetic Controls: ▪ Regular employee surveys on corporate values and employer attractiveness ▪ Financial (e.g., amount of charitable donations) and non-financial (e.g., gender ratio) social key performance indicators ▪ Booklet with criteria to measure and monitor quantitative success factors (e.g., Net Promoter Score, Balanced Scorecard), which comprises financial and non-financial measures ▪ Sustainability report that consolidates the company's social goals and their management and monitoring	**Administrative Controls:** ▪ Corporate foundation with the purpose of promoting scientific disciplines in research and teaching (e.g., projects with universities, funding of endowed chairs). The foundation's social projects (such as the regional sponsorship of sports and culture) represent the corporate purpose	**Reward and Compensation:** ▪ The company operates as a factor of identification and generates intensified intrinsic motivation through social direction, which leads to more loyal and long-term employee retention
Planning: ▪ Blue book, wherein principles of the company's direction, structure, and operating model are summarized for managers' decision making according to the company's values and its social goal orientation		

Table A 4: Overview of the materialization of social goals in company 3

Industry: Furniture manufacturing	**Number of employees:** 220 **Annual revenue** (in million €)**:** 40	**Position:** Chief Executive Officer
Cultural Controls: ▪ Employee brochure that informs employees about the company's values and social goals and ensures that each employee individually lives the goals of the company ▪ Brochure for external communication to illustrate the company's values in furniture manufacturing ▪ Personality assessment happens subconsciously in conversation between applicants and recruiters to make sure that applicants fit the corporate value profile ▪ Querying of cultural fit with regard to internal promotions during informal interviews ▪ Furniture is considered a cultural asset, which is why the company sponsors cultural events, thus reflecting the company's values externally ▪ Production in Germany despite high costs in order to preserve jobs in the region and the corporate values of the founding family and to give back to society ▪ Company-owned sports facilities on the corporate premises for use by employees free of charge increase team identification and a sense of unity		
Cybernetic Controls:	**Administrative Controls:**	**Reward and Compensation:**
Planning:		

Table A 5: Overview of the materialization of social goals in company 4

<table>
<tr><td>Industry:
Electrical engineering (power supplies)</td><td>Number of employees: 1,000
Annual revenue (in million €): 250</td><td>Position:
Chief Financial Officer</td></tr>
<tr><td colspan="3">Cultural Controls:
▪ The owner family exemplifies social responsibility and activities for the public good as tone at the top: Social values were defined as part of customer and employee branding and accompanied by numerous personal speeches, videos, emails, letters, and other communications from the management
▪ Personality assessment happens subconsciously in conversation between applicants and recruiters to make sure that applicants fit the corporate value profile
▪ Mandatory training for all managers to ensure that the values are passed on to all employees and internalized by them. This widespread dissemination is intended to build up social pressure so that employees mutually adhere to these values</td></tr>
<tr><td>Cybernetic Controls:
▪ Social budget for sports and health activities as well as cultural events sponsored by shareholders of the family business
▪ Points system under which each employee has an annual points account that can be used for individual training and education: In addition to classic courses on soft skills and technical training (e.g., language courses, product training, employee management, presentation techniques, etc.), there is also training on corporate culture and the company values
▪ Company-owned research facility conducting research on early medical detection through innovation budget
▪ Employees can be released from work for a certain percentage of working hours once a year in order to pursue private or social obligations
▪ Defined budget for achieving climate targets</td><td>Administrative Controls:
▪ Code of conduct serves as a set of rules and regulations and contains social behavioral guidelines, especially concerning legal issues such as corruption, antitrust law, or gifts
▪ Alliance of work that goes beyond the union’s demands and gives employees the option of redefining their weekly working hours every two years, allows for sabbaticals, and rules out layoffs for operational reasons</td><td>Reward and Compensation:</td></tr>
<tr><td colspan="3">Planning:</td></tr>
</table>

Table A 6: Overview of the materialization of social goals in company 5

<table>
<tr><td>Industry:
Mechanical engineering (system components)</td><td>Number of employees: 3,750
Annual revenue (in million €): 860</td><td>Position:
Chief Human Resources Officer</td></tr>
<tr><td colspan="3">Cultural Controls:
▪ The tone at the top is communicated through a family carta which states that the primary monolithic corporate purpose is to secure the existence of the family business
▪ Family members of the family business are in the public eye and transmit the tone at the top with regard to social goals and initiatives by means of this public presence. The social commitment is thus made perceptible through the behavior of the owner family, who act as role models
▪ Personality assessment happens subconsciously in conversation between applicants and recruiters to make sure that applicants fit the corporate value profile. The more management responsibility the position involves, the more relevant the value system is when selecting applicants
▪ Advanced training programs and assessment centers for prospective managers from the entrepreneurial family with internal and external coaches on strategic and cultural direction</td></tr>
<tr><td>Cybernetic Controls:
▪ The employee foundation manages a fixed annual budget for social goals, the use of which is decided by the employees</td><td>Administrative Controls:
▪ Code of conduct serves as a set of rules and regulations
▪ An employee foundation (managed by five employees from different areas of the company as a board of directors and an advisory board consisting of family members) represents the social understanding of the founder of the family business with the purpose of supporting employees in need</td><td>Reward and Compensation:</td></tr>
<tr><td colspan="3">Planning:</td></tr>
</table>

Table A 7: Overview of the materialization of social goals in company 6

<table>
<tr><td>Industry:
Heating, ventilation, and air conditioning</td><td>Number of employees: 2,700
Annual revenue (in million €): 200</td><td>Position:
Chief Executive Officer</td></tr>
<tr><td colspan="3">Cultural Controls:
▪ The managing director of the company volunteered as a spokesperson for the regional sustainability initiative and conveyed the respective tone at the top to all employees as well as to the region</td></tr>
</table>

▪ The definition and communication of guiding principles and mission statements ensure that every employee internalizes the social goals and takes them into account in their day-to-day work ▪ Internal training measures instead of short-time work during the COVID-19 pandemic ▪ Working spaces in the production area that are accessible to external parties so that they can contribute their ideas, commission productions, or develop patents ▪ App for onboarding new employees and communicating the company's values		
Cybernetic Controls: ▪ Managers are assessed using a grading system in various categories, such as social and leadership skills ▪ Sustainability report that consolidates the company's social goals and their management and monitoring	**Administrative Controls:** ▪ Steering committee consisting of, among others, representatives of the management, the HR department, a business association, and an economic development agency. Together, they decide on social goals and initiatives that they consider worthy of investment and support in order to make their region more attractive	**Reward and Compensation:**
Planning: ▪ Annual employee dialogue on a personal, informal basis, which involves soft, social factors, the basic mood among employees, and the corporate image		

Table A 8: Overview of the materialization of social goals in company 7

Industry: Safety engineering	**Number of employees:** 750 **Annual revenue** (in million €)**:** 170	**Position:** Chief Financial Officer
Cultural Controls: ▪ The definition and communication of guiding principles and mission statements ensure that every employee internalizes the social goals and takes them into account in their day-to-day work ▪ The communication of these guiding principles can be addressed both internally and externally as they directly refer to the safety aspects the company's products provide in terms of occupational safety. Thus, the social contribution here refers not only to additional initiatives but also to the core activities of the company itself ▪ Personality assessment happens subconsciously in conversation between applicants and recruiters to make sure that applicants fit the corporate value profile. The same applies to promotion decisions ▪ Training on CSR, code of conduct, compliance, and data protection guidelines contribute to social education		
Cybernetic Controls: ▪ Regular employee surveys on employee satisfaction, employer attractiveness, employer branding, and the company's values	**Administrative Controls:** ▪ Code of conduct serves as a set of rules and regulations that define social behaviors for both the internal perspective of employees and the external perspective of suppliers and contractors	**Reward and Compensation:**

	▪ Compliance management system, which comprises all measures, structures, and processes set up in a company to comply with regulations ▪ Official audits (e.g., S-Rating for self-disclosure of sustainability efforts), awards, ratings, and certifications (issued, e.g., by organizations or governments) credibly attest to the company's social goal orientation ▪ Decision-making body, composed of a representative of the works council, the HR manager, and a representative of the management, that deliberates on social goals and initiatives (e.g., Girls' Day, integration day for refugees, support for the Children's Fund, subsidies for public transport and business bikes, etc.)	
Planning:		

Table A 9: Overview of the materialization of social goals in company 8

Industry: Foundry and filtering	**Number of employees:** 50 **Annual revenue** (in million €)**:** 125	**Position:** Director Family Office
Cultural Controls: ▪ Through the social tone at the top and by acting according to the company's values and culture, the managers and family members set a good example and act as role models for the region ▪ The definition and communication of guiding principles and mission statements ensure that every employee internalizes the social goals and takes them into account in their day-to-day work ▪ The communication of these guiding principles can be addressed both internally and externally as they directly refer to the safety aspects the company's products provide in terms of mobility safety. Thus, the social contribution here refers not only to additional initiatives but also to the core activities of the company itself ▪ Personality assessment happens subconsciously in conversation between applicants and recruiters to make sure that applicants fit the corporate value profile ▪ Transition from family leadership to appointed management: Those responsible had already been familiarized with the values in the preceding years and had been "educated" accordingly		
Cybernetic Controls:	**Administrative Controls:**	**Reward and Compensation:**

▪ A precise percentage of profit is used as budget for social initiatives and donations. Thus, the company's success also benefits regional social institutions ▪ Budget for innovation and ideas from employees	▪ Meaningful assignment of activities could reduce misconduct of employees and control by supervisors ▪ With the awareness that personal performance has a direct influence on the social goals of the company, intrinsically motivated employees can take on more responsibility and perceive a lower need for control by supervisors ▪ Decision-making body, composed of members of the family as shareholders and the management, that sets targets for social spending and subsequently evaluates the results in quarterly meetings	▪ The company operates as a factor of identification and generates intensified intrinsic motivation through social direction, which leads to more loyal and long-term employee retention. Consequently, long-term commitment is considered beneficial to both employers and employees
Planning:		

Table A 10: Overview of the materialization of social goals in company 9

Industry: Food retail	**Number of employees:** 650 **Annual revenue** (in million €)**:** 300	**Position:** Chief Executive Officer
Cultural Controls: ▪ Social initiatives are exemplified at the forefront through a strong tone at the top by the management who lead by example and initiate social projects hand-in-hand with the employees in order to follow up words with actions ▪ Stakeholder dialogue and relevance matrix in the areas of working and living conditions (e.g., environmentally friendly agriculture), efficiency, and fairness ▪ The definition and communication of guiding principles and mission statements ensure that every employee internalizes the social goals and takes them into account in their day-to-day work ▪ Personality tests to determine the extent to which the applicant's character matches that of the company ▪ Querying of cultural fit with regard to internal promotions during informal interviews ▪ Development program for young executives focusing on personality development to build social and cultural role understanding ▪ Program to support employee families in cooperation with the corporate foundation (e.g., compatibility of family and career, care, etc.)		
Cybernetic Controls: ▪ Employee survey on the success of social initiatives	**Administrative Controls:** ▪ Code of conduct serves as a set of rules and regulations that define social behaviors for both the internal perspective of employees and the external perspective of suppliers and	**Reward and Compensation:** ▪ The company operates as a factor of identification and generates intensified intrinsic motivation through social direction, which leads to more loyal and long-term employee retention

▪ Consumer analyses of whether and how the social and sustainable orientation of the company is perceived by customers ▪ Sustainability report that consolidates the company's social goals and their management and monitoring	contractors and contains social behavioral guidelines, especially concerning legal issues such as corruption, antitrust law, or gifts ▪ Compliance management system, which comprises all measures, structures, and processes set up in a company to comply with regulations ▪ Completion of a supplier questionnaire with social requirements as a necessary condition for cooperation with suppliers ▪ Official audits, awards, ratings, and certifications (issued, e.g., by organizations or governments) credibly attest to the company's social goal orientation ▪ Meaningful assignment of activities could reduce misconduct of employees and control by supervisors ▪ With the awareness that personal performance has a direct influence on the social goals of the company, intrinsically motivated employees can take on more responsibility and perceive a lower need for control by supervisors ▪ Sustainability officer who provides impetus for the initiatives and is responsible for their implementation ▪ Corporate foundation that maintains a close connection to the company's value chain and cooperates with certified aid organizations when selecting concrete aid projects, which in turn guarantees authenticity	▪ Internal social employee benefits (e.g., works council, disabled representatives, refugee integration, subsidies for cafeteria or business bikes and gyms, daycare slots, mail and laundry service, financial advice, medical consultation hours, corporate benefit discounts, etc.), in combination with appropriate salary, not only improve team building but also play a role in retaining employees and incentivize employees to maintain their best possible behavior and performance in a cost-conscious and self-responsible manner ▪ Employee participation program (profit and capital sharing in the form of participation rights) that intrinsically motivates employees as entrepreneurs, supports them socially, and creates a foundation of trust with the company
Planning: ▪ Annual employee dialogue on a personal, informal basis, which involves soft, social factors, the basic mood among employees, and the corporate image ▪ Blue book, wherein principles of the company's direction, structure, and operating model are summarized for managers' decision making according to the company's values and its social goal orientation. Additionally, this direction is communicated through employee newsletters, annual reports, and long-term goal setting charts		

Table A 11: Overview of the materialization of social goals in company 10

<table>
<tr><td>Industry:
Logistics</td><td colspan="2">Number of employees: 2,100
Annual revenue (in million €): 335</td><td>Position:
Director Quality and Environmental Management</td></tr>
<tr><td colspan="4">Cultural Controls:
▪ Through the social tone at the top and by acting according to the company’s values and culture, the managers set a good example and act as role models for the region
▪ Employees can be released from work to volunteer at charitable institutions
▪ The communication of guiding principles and mission statements (e.g., on roadshows and during fireside chats) that have been defined by the owner ensure that every employee internalizes the social goals and takes them into account in their day-to-day work
▪ Personality assessment happens subconsciously in conversation between applicants and recruiters to make sure that applicants fit the corporate value profile. The same applies to promotion decisions
▪ Advanced training programs for prospective managers with internal and external coaches on strategic and cultural direction
▪ Change process as organizational learning for anchoring the social and sustainable goals in the company core
▪ Tripartite strategic orientation: 1. mission, 2. vision, 3. action principles
▪ Multipliers at management level convey the corporate values and mindset to initiate change
▪ Program to support employee families (e.g., compatibility of family and career, care, children’s retreat, etc.)</td></tr>
<tr><td colspan="2">Cybernetic Controls:
▪ Idea workshop with budget for innovation research
▪ Employee survey on the success of social initiatives and the employer attractiveness every three years
▪ Consumer analyses of whether and how the social and sustainable orientation of the company is perceived by customers
▪ Consistent investment program focuses exclusively on social and sustainable investments</td><td>Administrative Controls:
▪ Code of ethics that includes ethical values, principles, and standards (e.g., loyalty, sincerity, honesty, reliability) to which employees aspire and against which their actions can be evaluated
▪ Whistleblowing system, whereby employees can anonymously report violations of principles and social pressure can be exerted
▪ Company self-disclosure and ISO certifications (e.g., ISO 45001 for occupational health and safety)
▪ Official audits and certifications (e.g., Qualified Carrier as quality standard with which transport operators prove that they master the legal, economic, and social parameters of their business) credibly attest to the company’s social goal orientation</td><td>Reward and Compensation:
▪ The company operates as a factor of identification and generates intensified intrinsic motivation through social direction, which leads to more loyal and long-term employee retention. Consequently, long-term commitment is considered beneficial to both employers and employees
▪ Internal social employee benefits (e.g., works council, disabled representatives, refugee integration, subsidies for cafeteria or business bikes and gyms, daycare slots, mail and laundry service, financial advice, medical consultation hours, corporate benefit discounts, etc.), in combination with appropriate salary, not only improve team building but also play a role in retaining employees and incentivize employees to maintain their best possible behavior and</td></tr>
</table>

		performance in a cost-conscious and self-responsible manner ▪ Incentive system for social goals, which includes bonuses as performance-based payments on operating results based on social pillar (e.g., employee satisfaction or accident rate)
Planning: ▪ Employee dialogue follows an interview guide based on the company's competency model ▪ Guidebook for examining the scope for action in the definition and evaluation of social goals and initiatives (such initiatives can include not only sports and health offerings or humanitarian aid and education but also cultural programs for employees and the community in general) ▪ Blue book, wherein principles of the company's direction, structure, and operating model are summarized for managers' decision making according to the company's values and its social goal orientation ▪ Strategy of holistic corporate development as a team (includes e.g., living sustainability and people-oriented corporate culture)		

Table A 12: Overview of the materialization of social goals in company 11

Industry: Heating, ventilation, and air conditioning	**Number of employees:** 4,000 **Annual revenue** (in million €)**:** 533	**Position:** Chief Executive Officer
Cultural Controls: ▪ Social initiatives are exemplified at the forefront through a strong tone at the top by the management who lead by example and initiate social projects hand-in-hand with the employees in order to follow up words with actions ▪ The tone at the top is also communicated through a family carta which states that the primary monolithic corporate purpose is to secure the existence of the family business ▪ Multipliers at management level convey the corporate values and mindset to initiate change ▪ Employees are encouraged to engage in charitable and social activities on which they can then report in the company magazine ▪ The communication of guiding principles and mission statements that have been defined by the owner ensure that every employee internalizes the social goals and takes them into account in their day-to-day work ▪ Program to communicate leadership competencies and values worldwide ▪ The products of the company contribute to the health of the general public and have been classified as systemically important by the government		
Cybernetic Controls: ▪ A precise percentage of profit is used as budget for social initiatives and donations (two thirds of which is donated to science and education and one third to culture). The focus of these social initiatives is on the	**Administrative Controls:** ▪ Code of conduct serves as a set of rules and regulations that define social behaviors for both the internal perspective of employees and	**Reward and Compensation:** ▪ The company operates as a factor of identification and generates intensified intrinsic motivation through social direction, which

communities where the company's production facilities are located (e.g., support for schools, kindergartens, retirement homes, etc.) ▪ Sustainability round-table that generates ideas and decisions for social initiatives and has a profit-based budget at its command ▪ Sustainability report that consolidates the company's social goals and their management and monitoring (documents e.g., average length of service, number of corruption cases, and occupational accidents) ▪ Budget for educational cooperations ▪ Annual budget for management development and advanced training	the external perspective of suppliers and contractors ▪ Compliance management system, which comprises all measures, structures, and processes set up in a company to comply with regulations ▪ Company self-disclosure and ISO certifications (e.g., ISO 45001 for occupational health and safety) ▪ Official audits, awards, ratings, and certifications (issued, e.g., by organizations or governments) credibly attest to the company's social goal orientation ▪ CSR committee conducting a study for the psychological risk assessment of employees ▪ Sustainability officer who provides impetus for the initiatives and is responsible for their implementation ▪ Representative for occupational health management ▪ Corporate foundation to safeguard the company and its tradition for decades. Social projects such as the regional sponsorship of culture, charities, and education (e.g., donations for hospitals) represent the corporate purpose and are embedded in the company by the foundation in such a way that they will still be relevant in the future ▪ The foundation council includes a sustainability officer ▪ Non-profit subsidiary that conducts research and provides scientific studies to society free of charge. It authentically embodies the company's social goal orientation and communicates it to employees	leads to more loyal and long-term employee retention
Planning:		

3 Is Real Also Ideal? A Field Experiment on Inflation Adjustment in Employee Performance Measures

Authors:	Marvin Kalla; Maximilian Kohler; Matthias D. Mahlendorf; Mischa Seiter; Timo Vogelsang
Presented at:	2024 ENEAR 4th European Network for Experimental Accounting Research Conference in Rotterdam, The Netherlands
Acknowledgements:	We thank the conference participants of the 2024 European Network for Experimental Accounting Research Conference in Rotterdam. We are also grateful for the valuable comments provided by Liliana Dewaele, Laurence van Lent, and Jasmijn Bol. Additionally, we thank the company for the assistance and perseverance in working with us.
Preregistration:	This project has been preregistered before its intervention start date on https://www.socialscienceregistry.org/trials/12174.
Conflicts of interest:	Maximilian Kohler is working at the company that is subject of the study. In his role as an authorized signatory, he is responsible for management accounting, human resources, and marketing. However, no funding was received from the company, and none of the results were adjusted to the company's demand. Any errors and all opinions are our own. The workers' council of the company and the ethics committee of Frankfurt School of Finance & Management approved the experiment prior to implementation.

Abstract

Standard economic theory and the controllability principle both suggest adjusting performance measures for uncontrollable factors. Such adjustments can address not only internal corporate aspects but also exogenous developments and shocks such as inflation. To the best of our knowledge, the effect of such adjustments that explicitly correct for influencing factors that are uncontrollable by the actor has not yet been tested in the field. We study a setting in a German retail chain in which the organization introduces adjustments to weekly sales reports to make employees aware of the gap between nominal sales change and inflation-adjusted sales change. Therefore, we randomly assign retail store employees to a control group receiving nominal sales

reports that reflect sales without inflation adjustment and a treatment group receiving real sales reports that reflect inflation-adjusted sales. We use this experimental setting to examine the effects on sales performance and find declining sales in treated departments with inflation-adjusted sales reports, which are, however, minimal and not statistically significant. In addition, we find that overall sales decrease significantly with increasing inflation rates, suggesting that retailers should reconsider their pricing strategies under inflationary conditions. Accordingly, our study lays the foundation for answering the open empirical question of whether correcting for inflation has an overall positive or negative impact on sales performance.

Keywords: controllability principle, exogenous shock, inflation adjustment, field experiment

3.1 Introduction

Global inflation remained at a persistently high level in recent years, averaging 4.9 percent worldwide in 2024 (IMF, 2025). Beyond this, only little improvement is expected in terms of future inflation expectations (IFO, 2024). Food prices in particular have been a major driver of inflation: For instance, the inflation rate for food in Germany exceeded 20 percent at the beginning of 2023 (Destatis, 2023). As a result, nominal sales data of retail chains show inflated sales, which rise as the rate of inflation increases even though the real sales of goods (in units) may develop differently or remain the same. This can give employees and managers the misleading impression of improved performance, even though the apparent gains are driven largely by inflation rather than skill or effort. This is consistent with prior research showing that attention to inflation is endogenous and varies with the level of inflation: When inflation is high, both households and companies become more attentive to it and better informed about it (cf. Bean et al., 2022; Cavallo et al., 2017; Korenok et al., 2023; Pfäuti, 2023). People perceive inflation primarily through the prices they regularly encounter in everyday life, such as grocery shopping (e.g., Cavallo et al., 2017; Coibion & Gorodnichenko, 2015; D'Acunto et al., 2021; Wong, 2015), as well as through media coverage (e.g., Carroll, 2003; Lamla & Maag, 2012; Pfajfar & Santoro, 2010). Weber et al. (2023) further conclude that high inflation causes households and companies to be less responsive to exogenously provided information about inflation and monetary policy, since this inattention itself is an endogenous outcome that depends on the economic environment.

Given the intensive media coverage and excessive price increases for food in particular, employees are likely to already be well informed in this regard and may react less attentively

to further exogenously provided information on inflation. In this context, we investigate the effects of showing employees real sales data compared to nominal sales data. We do so by studying a setting in a German retail chain that introduced inflation-adjusted weekly sales reports to make employees aware of the gap between nominal sales change and inflation-adjusted sales change. Therefore, we randomly assign retail store employees to either a control group, receiving nominal sales reports that reflect sales without inflation adjustment, or a treatment group, receiving real sales reports that reflect inflation-adjusted sales. Consequently, such adjustments can be based not only on internal corporate aspects but also on exogenous developments such as inflation. We use this experimental setting to examine the effects on sales performance.

In doing so, we present the first causal evidence in the field on how adjustments of performance measures to correct for inflation affect employees' performance. On the one hand, *standard economic theory* and the *controllability principle* suggest adjusting performance measures for uncontrollable factors (i.e., exogenous shocks). This inflation adjustment should make the performance measure more controllable and transparent by removing exogenous factors. On the other hand, *behavioral research* indicates that employees may resist downward adjustments to their performance metrics and that such an occurrence could demotivate them. To the best of our knowledge, the effect of such adjustments that explicitly correct for influencing factors that are uncontrollable by the actor has not yet been tested in the field with a randomized controlled trial. Thus, it is an open empirical question whether correcting for inflation has overall positive or negative consequences on employees' performance in the workplace. Our study contributes to addressing this gap.

Accordingly, our research question is as follows: *How does the adjustment of performance measures for uncontrollable factors on the difference to a performance reference point affect employees' performance?*

Our study provides five key results. First, a supermarket department that receives the inflation-adjusted sales report generates less sales in a calendar week than a department that receives the non-adjusted report. However, this main treatment effect is not only minimal but also not statistically significant. Second, overall sales in the supermarket departments in our sample generally fall significantly when inflation rises. Third, increasing sick leave and decreasing overtime hours in treated departments under certain circumstances indicate that employees tend to feel rather unfairly treated and demotivated by the inflation adjustment. Fourth, inflation rates have fallen so sharply that there have been no high inflation rates in any of the departments

during our treatment phase. This could be one explanation for the fact that we generally find hardly any differences between treatment and control groups. The same applies to the fifth result, which is related to decreasing inflation rates and states that around a quarter of the data even showed deflationary values, resulting in a deflation adjustment of the sales reports. These departments of the treatment group receiving deflation-adjusted sales reports generate higher sales in a calendar week than departments that receive the unadjusted report. However, this effect is not statistically significant either. Consequently, our field experiment implies that the *controllability principle* should rather not be applied, and sales reports should not be adjusted for inflation. Since most of the effects in our study are not only minimal but also statistically insignificant, they must be interpreted with caution. However, as we find that sales significantly decrease with increasing inflation, our results imply that supermarkets should reconsider their pricing strategy under inflationary conditions.

3.2 Theoretical background

Controllability principle and filtering out exogenous shocks

According to the *controllability principle*, managers should be held accountable only for actions and results that they can significantly influence and control (Antle & Demski, 1988). In the context of *agency theory*, Holmstrom (1979, 1982) argues that filtering out exogenous shocks from company performance leads to a more transparent and realistic evaluation of that performance. The principle is based on the concept that excluding uncontrollable elements from performance evaluation leads to higher employee satisfaction, as it makes the evaluation fairer (Giraud et al., 2008). Based on this reasoning, it would be expected that employees whose sales reports account for an exogenous shock that is uncontrollable for them would perceive this as unfair and their motivation and productivity would therefore decrease.

One prominent example of such an exogenous shock that is uncontrollable for employees is inflation. During the COVID-19 pandemic from 2020 onwards, the global economy recorded substantial inflation rates. While the restrictions on economic activity initially justified this development, Acharya et al. (2023) show that even after supply chain pressures eased, organizations with strong pricing power were able to further increase their markups due to the stickiness of inflation expectations among households. Since employees' perception of fairness has a significant impact on their job satisfaction, motivation, and effort (cf. Bol et al., 2015; Fehr & Schmidt, 1999; Maas et al., 2012), it is interesting to examine whether the inflation adjustment is actually perceived as fairer by the employees in our setting. Especially as

unfairness is perceived more strongly when the reward is lower than what employees consider just (Bol & Smith, 2011; Cropanzano & Folger, 1989). Overall, organizations do indeed partially filter out common shocks to performance measures and the extent of this filtering increases with the number of peers (Jayaraman et al., 2021). Literature also indicates that boards filter industry and market shocks from company performance before deciding on CEO retention (e.g., Barro & Barro, 1990; Gibbons & Murphy, 1990; Morck et al., 1989).

Nevertheless, previous findings show that in some circumstances managers are evaluated based on factors beyond their control. For instance, Ghosh and Lusch (2000) find in their field study that central management determinants of outcome outside a manager's control still influence their performance evaluations. Similarly, although *standard economic theory* suggests that corporate boards should filter out exogenous components of company performance that are caused by factors beyond CEOs' control, Jenter and Kanaan (2015) show that CEOs are significantly more likely to be dismissed from their jobs following poor industry performance. Remuneration also follows an asymmetric pattern, increasing more with positive exogenous shocks than declining with negative exogenous shocks (Bertrand & Mullainathan, 2001; Garvey & Milbourn, 2006). From a *principal-agent* perspective, any outcome that conveys information about an individual's actions should be used to determine their remuneration (Roodhooft, 1995).

Furthermore, managers themselves do not always desire the full application of the *controllability principle*: More specifically, they favor the application of the *controllability principle* when their performance is affected by internal uncontrollable factors, but not when their results are influenced by external factors (Giraud et al., 2008). Therefore, it may even be beneficial to expose managers to more uncontrollable factors and evaluate how they handle them (Burkert et al., 2011). Managers also hesitate to adjust bonuses for uncontrollable events when the likelihood of such events is high in order to avoid setting a precedent and instead motivate employees' adaptation to changing conditions. In addition, managers are less willing to adjust bonuses to uncontrollable events, regardless of the likelihood of the event, when compensation interdependence is high to avoid demotivating unaffected employees (Bol et al., 2015). Similarly, when managers observe noisy signals of employee performance and strive for accurate evaluations but feel more averse to unfavorable errors than favorable ones, their ratings will be biased upwards (Golman & Bhatia, 2012).

Bol and Smith (2011) examine how subjective performance evaluations are influenced by the level and controllability of a performance dimension and find an asymmetric uncontrollability

effect. Namely, supervisors' evaluations are higher when an uncontrollable factor decreases subordinate's performance which means that they compensate for bad luck. However, supervisors' evaluations are not lower when an uncontrollable factor increases subordinate's performance which means that they do not punish for good luck. We complement the findings of this study, yet, instead of investigating the influence of uncontrollable exogenous factors on subjective performance evaluations of employees by supervisors in a laboratory experiment, we run a field experiment focusing on the employees' perspective. A similar asymmetric controllability effect is found by Garvey and Milbourn (2006): The authors show that executives emphasize industry or market benchmarking of their performance in their compensation decision and therefore remove exogenous influences from compensation only when it is in their interest, namely, when the benchmark is down. Similarly, the employees in our study might be dissatisfied with the adjustment for the commonly known exogenous shock (i.e., inflation), even though it increases controllability, as it reduces their performance, which would also represent an asymmetric controllability effect.

Similar to our study and unlike Bol and Smith (2011), Garvey and Milbourn (2006) analyze employees' evaluation of their own performance. However, rather than drawing on archival data, we use a field experiment and investigate how inflation adjustment affects performance. Beyond this, uncontrollable factors can provide employees with valuable information that helps them make better decisions about controllable aspects of performance, such as learning from peer groups (e.g., Choi et al., 2016; KC et al., 2013). Zureich (2023) attributes this effect to the fact that goal-oriented employees only take information into account that appears relevant to their goal, while uncontrollable factors only appear relevant to the goal if employees are held accountable for them.

In order for employees to be able to evaluate controllability, the concept of *situational awareness* becomes important. Originally developed in military aviation, *situational awareness* refers to "knowing what is going on around you" (Endsley, 2000, p. 2). More precisely it is defined as "the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future" (Endsley, 1988, p. 97). In assessing whether something is controllable for employees or not (in the sense of the *controllability principle*), it is initially important to know what is happening in their environment. *Situational awareness* therefore represents an important precursor to decision-making (Endsley, 2000) and is a crucial antecedent to achieve higher task performance (Endsley, 2017; Wickens, 2008). In this respect, organizations nowadays generate vast amounts

of data on both the state of the company's internal components and the external environment. The main challenge here often is not a lack of information, but rather identifying, accessing, and processing the right information at the right time (cf. Endsley, 2000). Accordingly, the most common obstacle to *situational awareness* is that all the necessary information might be available but is not taken into account by employees, for instance due to distraction from competing tasks (Jones & Endsley, 1996).

Consequently, it is of high relevance for our study that more data (i.e., inflation-adjusted sales reports) is not automatically equivalent to more useful information (cf. Endsley, 2000). When the environment changes, *situational awareness* must likewise be adapted, requiring cognitive effort on the part of the individual (Nadj et al., 2020). In this respect, existing knowledge affects the process of acquiring and interpreting new knowledge (Jain & Huang, 2022; Nonaka, 1994; Zhou & Li, 2012). With regard to our setting, it is therefore on the one hand possible that the additional information on inflation-adjusted sales and the inflation rate in the reports (see section 3.3.2) contributes to an improvement in employees' *situational awareness* and thus helps to enhance their task performance. On the other hand, however, it is also possible that employees, already well-informed about the inflation topic as a result of extensive media coverage, gain no added benefit through the additional information. Similarly, it is also conceivable that the additional information even distracts them or causes information overload. Consequently, when considering *situational awareness*, the *controllability principle* offers both arguments for and against using inflation-adjusted sales reports to enhance motivation and productivity.

Target setting as motivational factor

In line with this, another relevant concept in our scenario is *goal-setting theory*. Although in our setting only managers, and not rank-and-file employees, have formally specified sales targets, the initial sales numbers before the inflation adjustment can be interpreted as the original target. Achieving these targets after the artificial sales reduction through the inflation adjustment can therefore be regarded as target tightening. Consequently, it becomes more difficult and requires greater effort for employees to reach this original level again after the inflation adjustment. We are thus interested in whether effects similar to those previously documented in literature occur here and whether employees set themselves certain personal performance targets, such as restoring their performance to the pre-inflation-adjusted level.

Even though *goal-setting theory* suggests that challenging targets have a positive effect on performance (Locke et al., 1984; Locke & Latham, 2002), previous studies have come to

ambiguous results (e.g., Matějka & Ray, 2017; Shang et al., 2023; Webb et al., 2010; Webb et al., 2013). In this regard, *goal-setting theory* provides the foundation, emphasizing the importance of targets and the significant relationship between targets and performance. Accordingly, targets play an important role in affecting behavior and directing attention as well as action (Locke & Latham, 2002). Moreover, setting challenging yet achievable targets not only mobilizes energy but also enhances motivation, effort, and persistence (Kuroki & Shirinashihama, 2025; Locke & Latham, 1990; Merchant & van der Stede, 2017). Arnold and Artz (2015) conclude that although experimental studies suggest that setting difficult targets can improve performance, evidence from empirical field studies remains mixed. By demonstrating that the difficulty of business unit targets exerts a direct positive effect and an indirect negative effect (mediated by company target flexibility) on company performance, they contribute to explaining this ambiguity.

Moreover, Webb et al. (2013) find that challenging targets and target-based pay can motivate high productive effort, causing individuals to work harder and more productively. This is consistent with the findings that companies setting more difficult targets or offering monetary incentives are able to achieve a higher percentage of their targets – however, bundling difficult targets with monetary incentives has a negative impact on target completion (Ioannou et al., 2016). Furthermore, it has been found that individual's performance increases with target difficulty only up to a certain point, beyond which the targets become so demanding that the individual gives up on them (Latham & Locke, 1991; Locke & Latham, 2002; Merchant & van der Stede, 2017). Such overly challenging goals can also be triggered by environmental shocks. In this context, Kelly et al. (2015) and Liu and Leitch (2013) find that adjusting goals previously set at an achievable level increases employee motivation and performance. Similarly, Berger et al. (2024) provide experimental evidence that downward revisions of performance targets during a crisis enhance their motivational effect – not only because they become more realistically achievable, but also because such revisions signal empathy toward employees. In addition, target difficulty represents an important compensation design choice that is able to boost short-term performance, but it is unlikely to be effective in increasing the long-term value of the company (Kim et al., 2023).

Furthermore, high-profitability (low-profitability) organizations commonly decrease (increase) earnings targets when their managers fail to meet (meet or exceed) prior-year targets but rarely adjust them in the opposite direction (Indjejikian et al., 2014). Related to this, managers tend to delegate tasks with difficult goals to avoid potential blame and retain tasks with easier goals to

gain potential recognition (Maas & Shi, 2023). Self-set targets based on intrinsic motivation are particularly important in this context (Hartmann & Schreck, 2018; Lau & Roopnarain, 2014), as these personal targets act as reference points for satisfaction (Matějka, 2018). Webb et al. (2010) even argue that the effect of target difficulty on motivation and performance is stronger when individuals are more involved in the target-setting process, as this makes them more likely to internalize these targets as personal goals. Nonetheless, employee target setting is often not intrinsic in nature but is instead aligned with the company's endogenous interests (e.g., defined by executives within the company).

In contrast, there is limited evidence regarding the effects of target setting that is not only endogenously defined but also exogenously influenced. To shed light on this topic, we leverage a common exogenous shock (i.e., the inflation rate in sales reports) to study how employees behave when they suddenly fall behind their expected performance. Given the mixed results on the impact of target difficulty on performance so far, it is valuable to investigate what the effects of disclosing inflation-adjusted sales reports are. This allows us to examine how employees respond to an exogenous shock which they cannot independently influence or control, but which makes it more challenging for them to reach the pre-adjusted sales level.

Literature strands with ambiguous expected outcome: contrasting derivation of hypotheses

Hence, while target difficulty provides evidence that more challenging targets can increase motivation and performance, the *controllability principle* posits that avoiding uncontrollable elements in performance evaluations enhances employee satisfaction, as it brings fairness to the evaluation. Thus, adjusting sales reports for inflation technically makes the performance evaluation more transparent and less biased, potentially leading to employees feeling they are being treated more fairly, although the actual sales numbers documented are reduced as a result. This perception may positively affect effort and performance of employees. Conversely, falling behind a natural reference point reduces satisfaction, whereas being ahead has little impact on satisfaction and subsequent performance (Akerlof & Yellen, 1990; Ockenfels et al., 2015). Moreover, employees dislike falling behind their recently held expectations about outcomes (Bell, 1985; Kahneman & Tversky, 1979; Koszegi & Rabin, 2006; Loomes & Sugden, 1986), and providing information about relative rankings affects their performance negatively (Barankay, 2012). As a result, individuals falling below a reference value tend to take more risks, which can also influence performance (Bolton & Ockenfels, 2010; Kahneman & Tversky, 1979). This means that employees might perceive inflation adjustments as unfair even though

their performance evaluation is corrected for external influences, which could have a negative impact on their motivation and consequently on their effort and performance. The additional information from inflation adjustments can therefore affect employees' *situational awareness* positively, negatively, or not at all (cf. Endsley, 2000; Nadj et al., 2020).

Existing literature thus offers findings that may suggest both an increase and a reduction in performance after adjusting the performance measure for inflation. It is particularly interesting to examine what happens when only the employees' individual reports are supplemented with additional information encompassing sales adjustment by an exogenous factor. Insights into improved employee performance as a consequence of such an adjustment could be helpful, for instance, to offset a decline in customer spending during inflation. Accordingly, we are particularly interested in finding out how the exogenous shock of communicating inflation-adjusted sales reports affects sales performance. Given our conflicting theoretical arguments and the fact that it is not clear ex-ante which effects prevail, we split our hypotheses to be tested as follows:

H1a: *Adjusting sales for inflation (a commonly known exogenous shock) in performance measures increases performance.*

H1b: *Adjusting sales for inflation (a commonly known exogenous shock) in performance measures decreases performance.*

3.3 Setting, experimental design, and method

3.3.1. Setting

We conduct a field experiment in a large German retail chain operating supermarkets to investigate the effects of an exogenous shock (i.e., the inflation rate in sales reports) on department-level sales performance[4]. The average store in our sample is about 2,899 square meters in size and has sales of about €349,267 per calendar week. Our study focuses on sales performance data from eleven supermarkets in the retail chain's southern German region. Each supermarket has 16 different departments, some of which sell goods directly to customers (e.g., at the butchery counter), while others offer self-service products on shelves (e.g., fruits and

[4] This setting is particularly appropriate for our research question as food inflation rates were well above average at the time of the experiment. Moreover, the company does not use explicit incentives or performance-based compensation based on individual performance. In addition, the retail sector is critical and representative of the economy, for instance, employing about 6.3 percent of the total labor force in the United States of America (Anderson & Laughlin 2020).

vegetables). For simplicity, in our analysis we exclude some departments that are too small (e.g., the deli counter) and combine some departments as they share identical department managers (e.g., beverages & wine and spirits). Thus, we consider the following six departments in each of the eleven supermarkets: bakery, beverages & wine and spirits, dairy, fresh food counter (butchery, cheese, fish), food, as well as fruits and vegetables.

Each supermarket belongs to a retailers' cooperative and is organized in such a way that a store manager coordinates several department managers, who in turn supervise further sales employees. These sales employees are generally responsible for stocking and presenting products as well as for customer service (i.e., selling and providing advice). They have practically no influence on how many customers visit their department. Nonetheless, they do have a few options to influence sales (e.g., advising on product purchases, ordering supplies, restocking items, offering special deals, refining products, setting up sales displays or themed promotional setups (see Figure A 1 in the appendix for an exemplary display of such a special product setup in the store)). Beyond that, employees with direct customer contact have the opportunity to upsell products. In addition, employees do not receive any individual performance-based compensation or bonuses but a fixed salary in accordance with the collective wage agreement for their industry. Moreover, no financial incentives are linked to sales performance. However, given their highly competitive and prestigious environment, employees naturally strive to exceed prior-year sales and outperform the peer group in other stores. Thus, prestige through higher sales numbers can serve as an implicit incentive. We therefore consider employees to have both the motivation and the leverage to influence sales numbers in their respective departments.

3.3.2. Experimental design

Before our intervention, department managers received a weekly sales report from the store manager containing department-level information on gross weekly sales, the percentage sales change compared to the previous year, and the absolute average receipt per customer, in each case benchmarked against the ten other stores in our sample and without adjustment for inflation. Typically, the department managers display these sales reports in their department's respective break room for all their subordinates to access them (see Figure A 2, Figure A 3, and Figure A 4 in the appendix for exemplary displays of sales reports in the break rooms of departments). We use stratified randomization with respect to the six departments to randomly assign the department managers (and thus also their respective subordinates) of these eleven stores to a control group, receiving nominal sales reports that reflect sales with inflation, and a

treatment group, receiving real sales reports that reflect inflation-adjusted sales. Figure 3 illustrates the average sales distribution of the departments in the randomized treatment and control groups. Per store, departments sharing the same break room must be assigned to the same group. Since the employees of the three fresh food counters (butchery, cheese, fish) share the same break room where the sales reports are displayed, they were combined into one department. Both within the stores and across them, the two groups must be evenly distributed among the departments. Therefore, we stratify our randomization both across stores and within departments. On the one hand, this ensures that three departments of each store are randomly assigned to the treatment group and three departments to the control group. On the other hand, this ensures that five respectively six of the identical departments across all eleven stores are randomly assigned to the treatment group and the control group. The experiment is clustered at the department level, meaning that all employees within the same department receive the same treatment. The control group in our field experiment receives a slightly modified version of the usual sales report, namely, at the beginning of the report, the department's own percentage change in sales compared to the same week of the previous year is restated separately, without a store comparison and without inflation adjustment.

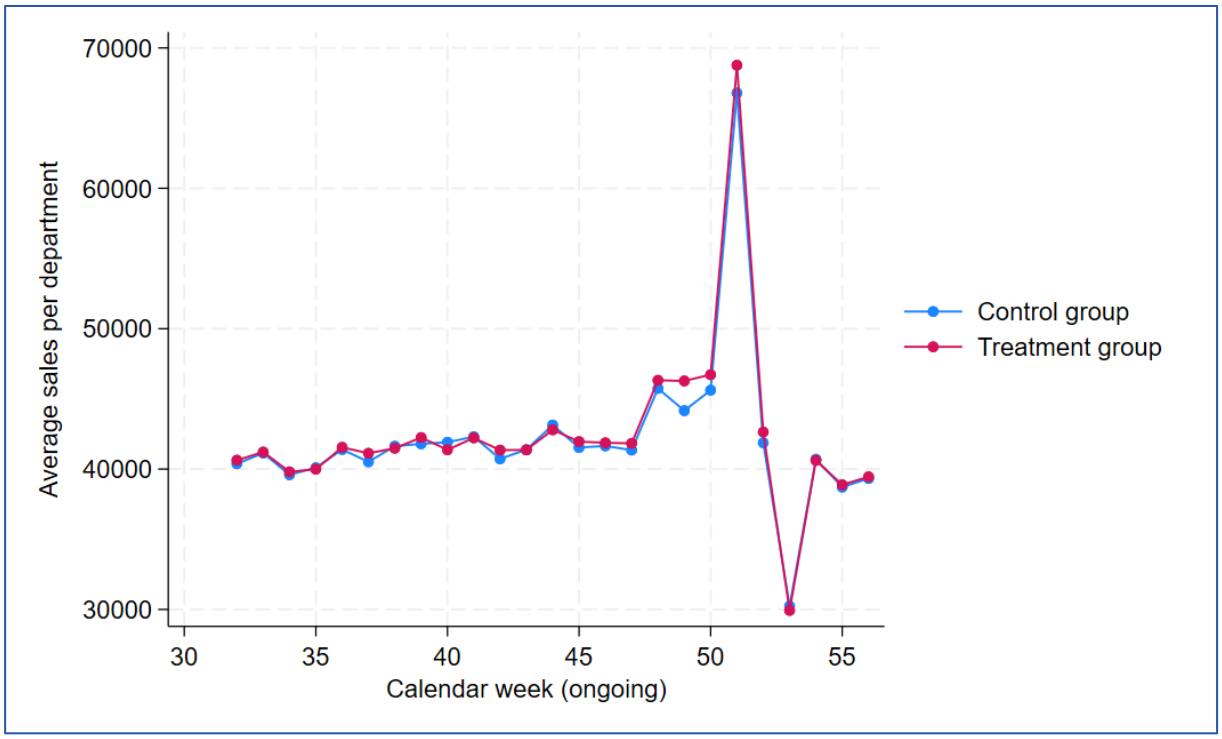

Figure 3: Average sales distribution of the departments in the randomized treatment and control groups

We follow a within-subjects experimental design, whereby the treatment group also receives this exact same report as the control group during the first four months of the experiment

(starting from calendar week 41 in 2023). In the subsequent two months of the experiment (starting from calendar week 7 in 2024 until the end of calendar week 15 in 2024), however, the treatment group receives the identical information in the report, with the exception that instead of the separate nominal sales change, the inflation-adjusted sales change compared to the same week of the previous year is shown here at the beginning of the report. This includes the inflation adjustment rate and a footnote comparison to the inflation-unadjusted value. We derive the department-specific inflation rates from the retail chain's in-house inflation indicators at the product category level. Figure 4 exemplarily shows the control group's sales report for the food department on the left and the treatment group's sales report for the beverages department on the right in calendar week 6 of 2024.

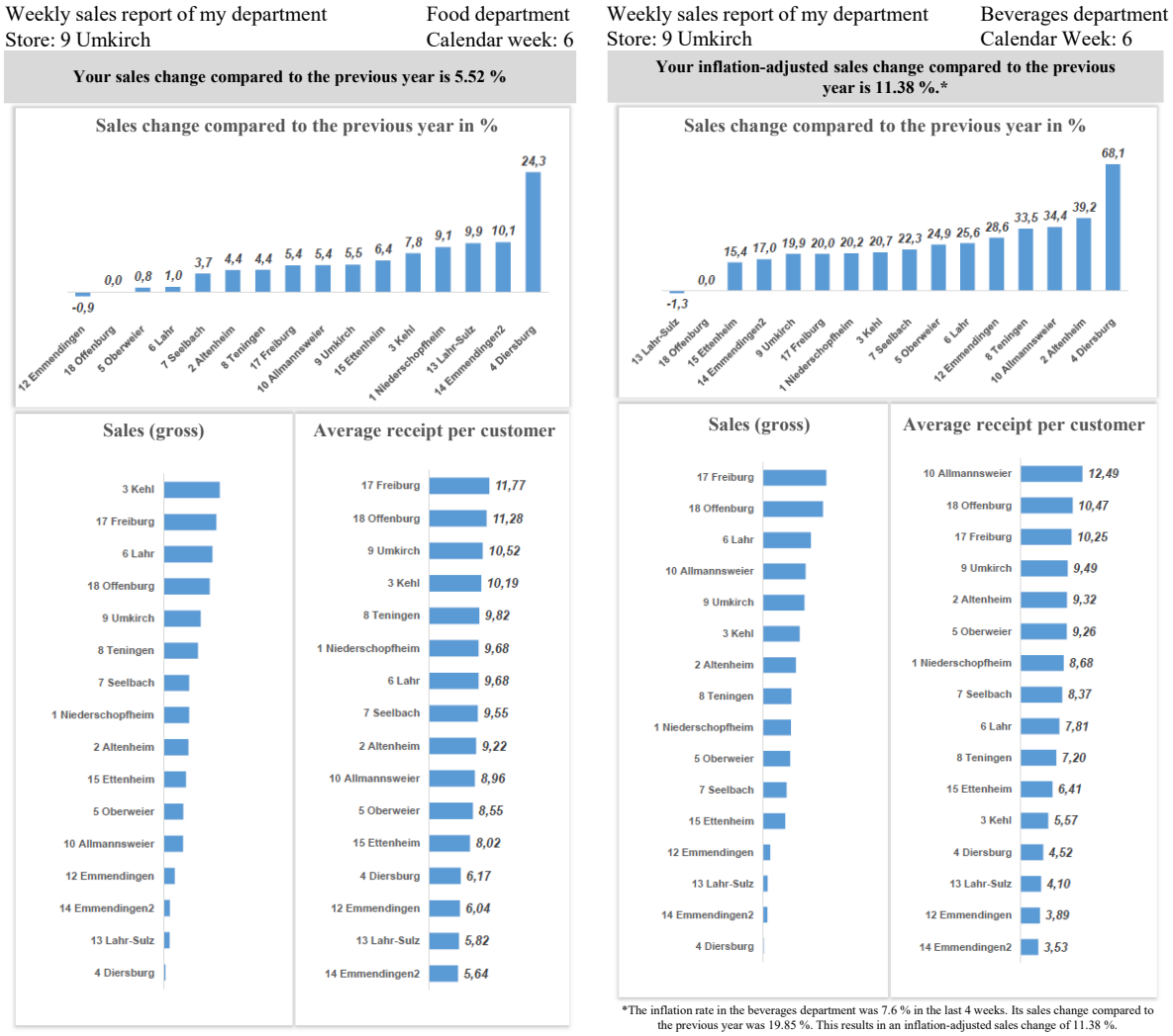

Figure 4: Exemplary sales report for the control group (left) and the treatment group (right)

The primary performance measure of interest is the weekly sales numbers of each supermarket department. Consequently, the independent variable *inflation-adjusted sales report* indicates whether employees are shown the nominal sales report as before (coded as 0) or the real sales

report acting as a treatment (coded as 1). The dependent variable refers to the *number of weekly sales in euros* in the sales reports.

3.3.3. Method

To test our hypotheses, we run fixed effects difference-in-differences regressions with time as well as department and store fixed effects to account for unobserved heterogeneity. Moreover, standard errors are clustered at the level of the department and store variable to reflect the within-cluster correlation.

The respective regression equation is specified as follows:

$$(1)\ Y_{i,t} = \beta_0 + \beta_1 * InflationAdjusted_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t}$$

$Y_{i,t}$ denotes the dependent variable weekly sales for department i in calendar week t. $InflationAdjusted_{i,t}$ is a dummy variable equal to 1 for departments in the treatment group, receiving the inflation-adjusted sales reports, and 0 otherwise. This dummy variable represents the interaction term and is calculated as $Treatment_i * Time_t$, whereby $Treatment_i$ takes the value 1 if the respective department receives the inflation-adjusted sales report and 0 otherwise, and $Time_t$ takes the value 1 if the time period from calendar week 7 2024 onwards is considered, before that it is 0. α_i captures department and store fixed effects, while δ_t records time fixed effects by calendar week. The error term $\varepsilon_{i,t}$ is clustered on the unit of randomization which is the store department level.

3.4 Results

3.4.1. Main analyses

We use the regression equation (1) above to test our hypotheses on the effects of the inflation-adjusted sales reports on weekly sales numbers. As Table 7 shows, the point estimate for the treatment variable inflation-adjusted sales reports is neither economically nor statistically significant. If a department receives the inflation-adjusted sales report, it generates €171.52 less sales in a calendar week than a department that receives the unadjusted report. This difference exists beyond any general time trends or pre-existing differences between treatment and control groups. As a result, adjusting the reports for inflation causes the department concerned to experience a reduction in sales, albeit a minimal one, thereby potentially harming overall performance. However, this effect is not statistically significant. Figure 5 illustrates that during the treatment phase there are hardly any noticeable differences between the treatment and

control groups with regard to changes in sales. A year-over-year comparison of the sales change, reflected in the regression over the treatment phase in 2024 and the corresponding weeks in 2023, shows an identical insignificant pattern: If a department receives the inflation-adjusted sales report, it generates €74.82 less sales in a calendar week during the treatment phase in 2024 and the corresponding weeks in 2023 than a department that receives the unadjusted report (see Table A 13 and Figure A 5 in the appendix).

Table 7: Main treatment effect

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	−171.519	634.329	−0.27	0.788	−1,438.361	1,095.323
(Constant)	43,008.48***	117.468	366.13	0.000	42,773.88	43,243.08

n = 1,782; R^2 = 0.930; *p < 0.10, **p < 0.05, ***p < 0.01

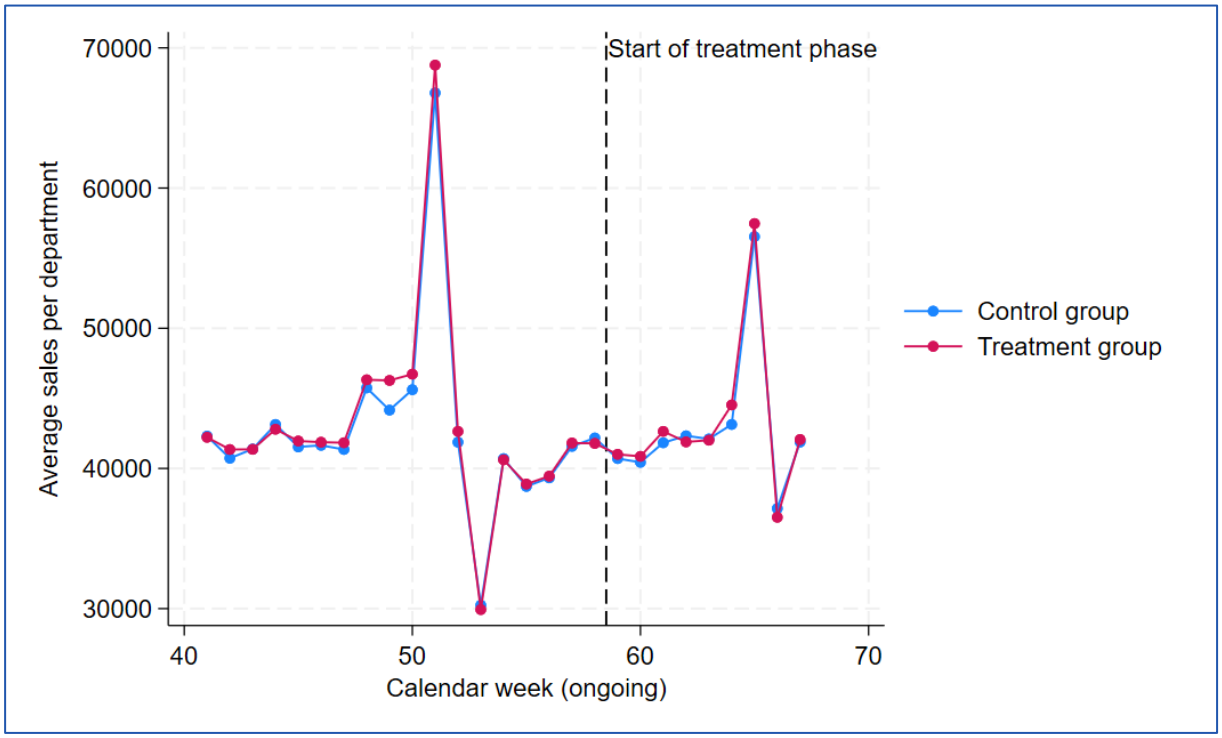

Figure 5: Comparison of the sales development between treatment and control groups during control and treatment phases

3.4.2. Additional analyses

In order to assess the robustness of these main treatment effects, we conduct additional analyses. The first of these additional analyses extends the previous regression to include inflation as an

explanatory variable (see Table 8). In this scenario, if a department receives the inflation-adjusted sales report, it generates €219.63 less sales in a calendar week than a department that receives the unadjusted report. In addition, for each percentage point of inflation, all departments, irrespective of whether they receive the inflation-adjusted sales report or not, generate an average of €211.56 less sales. However, only the latter effect is statistically significant. Thus, this additional analysis reinforces the message of the main treatment effect: Adjusting the reports for inflation results in the department concerned experiencing a reduction in sales, albeit a minimal and not significant one, thereby potentially harming overall performance. Furthermore, the additional analysis supplements the main treatment effect with the significant finding that sales in the supermarket departments in our sample generally fall with rising inflation.

Table 8: Additional analyses – Inflation as explanatory variable

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	−219.631	603.234	−0.36	0.717	−1,424.372	985.110
Inflation rate	−211.562**	84.521	−2.50	0.015	−380.361	−42.762
(Constant)	43,876.60***	369.152	118.86	0.000	43,139.35	44,613.85

n = 1,782; R^2 = 0.930; *p < 0.10, **p < 0.05, ***p < 0.01

A second additional analysis distinguishes between adjustments of the sales reports in terms of inflation values and deflation values. This consideration is interesting as during our treatment phase, the high inflation rates in some product categories fell so sharply that they turned into deflationary values. As a result, almost a quarter of the adjustments announced in the adjusted sales reports were in fact deflation adjustments. Consequently, prices fell in the affected departments in these cases, which in turn means that the departments in the treatment group actually received higher sales numbers in their reports compared to the control group due to the adjustment (as opposed to lower sales numbers in the case of actual inflation adjustments). We therefore conduct a group-specific investigation to separately analyze whether the treatment effect differs between departments exposed only to inflation values and those exposed only to deflation values. Table 9 presents the group-specific analysis with departments that are only subject to inflation values, while Table 10 shows the analysis with departments that are only subject to deflation values. Figure 6 respectively Figure 7 provide the corresponding graphical

comparisons of the sales development between the treatment and control groups during control and treatment phases.

Table 9: Additional analyses – Inflation values only

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	−696.251	892.291	−0.78	0.438	−2,478.28	1,085.777
(Constant)	45,739.28***	141.791	322.58	0.000	45,456.11	46,022.46

n = 1,353; R^2 = 0.928; *p < 0.10, **p < 0.05, ***p < 0.01

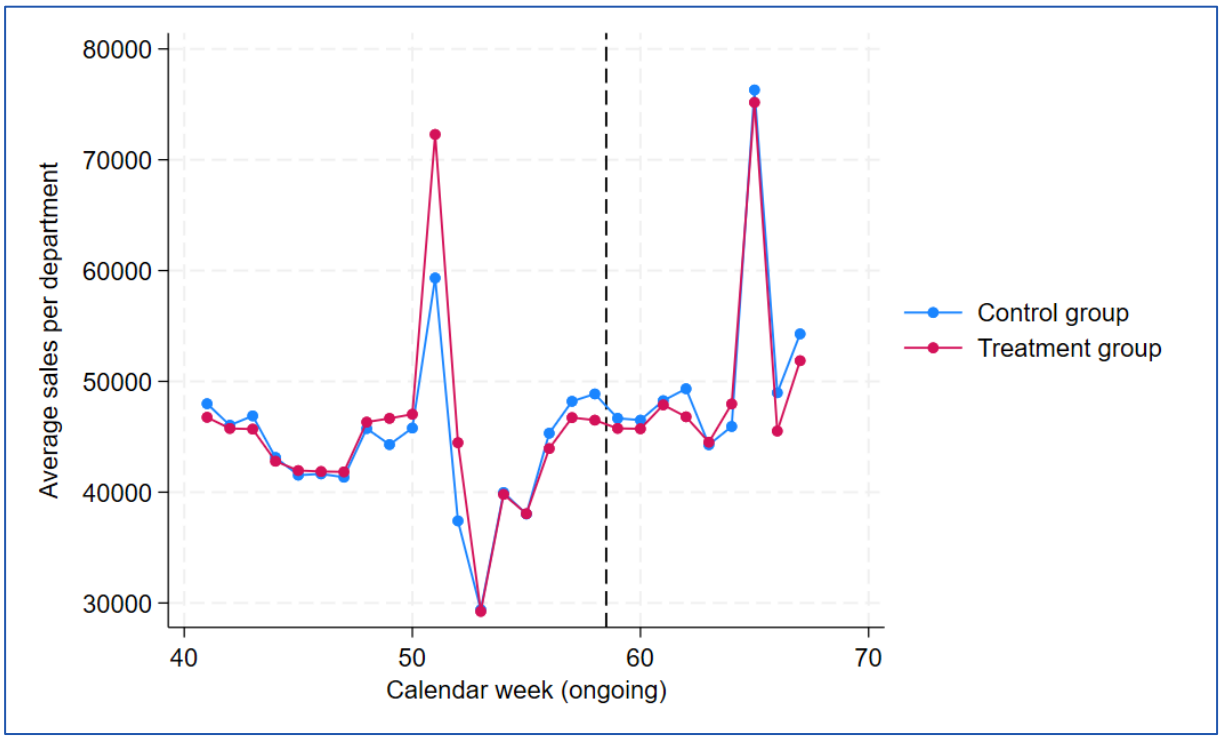

Figure 6: Comparison of the sales development between treatment and control groups during control and treatment phases with inflation values only

On the one hand, if a department receives the inflation-adjusted sales report and considering only inflation values, it generates €696.25 less sales in a calendar week than a department that receives the unadjusted report. This group-specific analysis thus supports the insight of the two previous analyses indicating that departments that receive inflation-adjusted sales reports experience a decline in sales, which can affect overall performance negatively. On the other hand, if a department receives the deflation-adjusted sales report and considering only deflation values, it generates €473.33 more sales in a calendar week than a department that receives the

unadjusted report. This group-specific analysis in turn indicates that departments that receive deflation-adjusted sales reports experience an increase in sales, which can have a positive impact on overall performance. Although these treated departments already receive higher sales numbers in their reports as a result of the deflation adjustment (as opposed to lower sales numbers in the case of actual inflation adjustment), they still generate even more sales in comparison to the control group. However, again, neither effect is significant. Figure 6 and Figure 7 confirm this insignificance by showing that there are hardly any noticeable differences between the treatment and control groups in terms of sales changes during the treatment phase, both for scenarios with inflation values only and with deflation values only.

Table 10: Additional analyses – Deflation values only

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	473.328	555.169	0.85	0.399	−646.278	1,592.933
(Constant)	34,486.05***	148.822	231.73	0.000	34,185.92	34,786.18

n = 429; R^2 = 0.973; *p < 0.10, **p < 0.05, ***p < 0.01

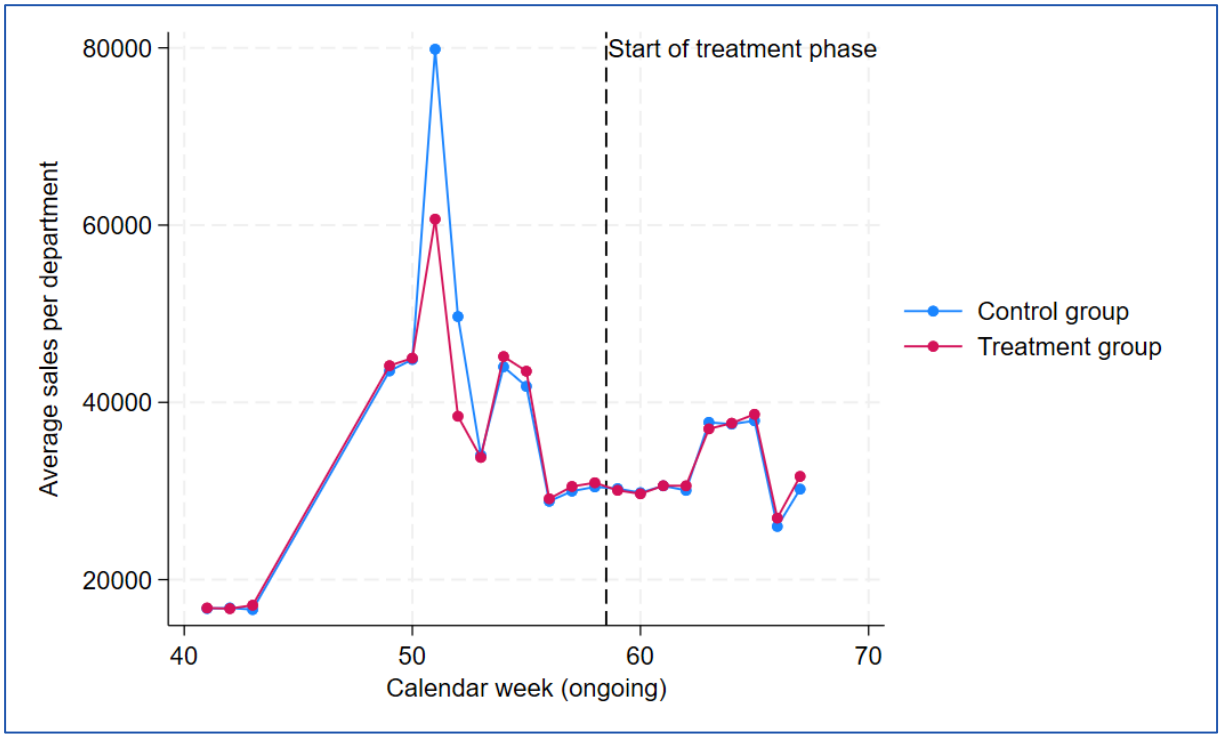

Figure 7: Comparison of the sales development between treatment and control groups during control and treatment phases with deflation values only

A third additional analysis relates to the group-specific consideration of different levels of inflation. For this purpose, we split the departments into three groups, which are affected by inflation at different levels, namely low (the first quartile comprises departments with an inflation rate of 3.6 percent or less), moderate (the second quartile comprises departments with an inflation rate of more than 3.6 percent and less than 8.53 percent), and high (the third quartile comprises departments with an inflation rate of 8.53 percent or more) levels of inflation. For this conditional cross-sectional comparison, we then examine sales differences between departments with different inflation levels relative to a no-inflation reference group. Table 11 shows that departments facing only low inflation rates generate €1,747.70 less sales per calendar week compared to departments that do not face any inflation. Departments that are exposed to moderate inflation rates even generate €2,284.98 less sales per calendar week than departments without inflation. Both effects are highly significant. In contrast, departments that are affected by high inflation rates generate €817.83 less sales per calendar week compared to departments that are not exposed to inflation, which is not significant.

Table 11: Additional analyses – Different levels of inflation

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	−119.434	608.168	−0.20	0.845	−1,334.029	1,095.162
Low inflation	−1,747.698***	501.274	−3.49	0.001	−2,748.812	−746.584
Medium inflation	−2,284.980***	841.261	−2.72	0.008	−3,965.094	−604.866
High inflation	−817.833	869.780	−0.94	0.351	−2,554.904	919.238
(Constant)	44,365.85***	560.608	79.14	0.000	43,246.24	45,485.46

n = 1,782; R^2 = 0.930; *p < 0.10, **p < 0.05, ***p < 0.01

The detailed group-specific analyses according to the level of inflation can be found in the appendix. Table A 14 considers low levels of inflation; Table A 15 shows medium levels of inflation; and Table A 16 covers high levels of inflation. These additional group-specific analyses do not show any further relevant significant results. Figure A 6, Figure A 7, and Figure A 8 in the appendix present the corresponding graphical comparisons of the sales development between the treatment and control groups for departments with low, medium, and high inflation rates respectively. Notably, Figure A 8 reveals that there have been no high inflation values at

all during the treatment phase, which could be one explanation for the limited differences between the treatment and control groups.

Another aspect that might affect the treatment effect during our treatment phase is the sales performance of the departments prior to the treatment. In this respect, it could be the case that departments that were already performing well before the treatment phase reduce their efforts during the treatment or vice versa. A further additional analysis therefore addresses potential changes in the cross-market ranking of each department (see Figure 4 for an illustrative visualization of these rankings as part of the sales reports) before and after the treatment phase. For this purpose, we use a dummy variable that indicates whether the overall sales performance of a department prior to the first week and after the last week of the treatment phase is below or above the median to classify low and high performers. Table A 17 in the appendix shows that for every rank a department holds above the median in the last week before treatment, it ranks 0.155 positions higher in the weekly sales figures after the last week of the treatment phase. However, this effect is not significant. The separate analysis of low and high performers confirms this non-significant result: In the group of low (high) performers, a department improves by 0.1 (0.05) ranks after the last week of the treatment phase for every rank it ranks higher in the last week before treatment (see Table A 18 and Table A 19 in the appendix). Thus, also no significant difference can be determined between low and high performers before and after the treatment phase. We therefore cannot make a reliable statement as to whether departments that were already performing well before the treatment phase reduce their efforts during treatment or vice versa. Even though the tendency suggests that companies with better performance before the treatment also perform better after the treatment.

A final additional analysis considers employee effort based on changes in sick time and overtime worked by employees following the inflation-adjusted sales reports as dependent variables. Accordingly, if a department receives the inflation-adjusted sales report, its employees record an average of 1.21 less sick hours in a calendar week than a department that receives the unadjusted report. However, this effect is not significant (see Table A 20 in the appendix). Including inflation as an explanatory variable, we see that the employees of a department face an average of 0.18 more sick hours per calendar week for each percentage point of inflation – this effect is again not significant (see Table A 21 in the appendix). Interestingly, a department that is only affected by low inflation rates and receives the inflation-adjusted sales report has 16.89 more sick hours in a calendar week than a department that receives the unadjusted report. This effect is significant (see Table A 22 in the appendix). Looking at the

overtime worked by employees, a similar picture emerges. If a department receives the inflation-adjusted sales report, it records an average of 0.18 more overtime hours in a calendar week for its employees than a department that receives the unadjusted report. However, this effect is not significant (see Table A 23 in the appendix). Adding inflation as an explanatory variable, we see that with each percentage point increase in inflation, the employees of a department work an average of 0.47 less overtime hours per calendar week – this effect is significant (see Table A 24 in the appendix).

3.5 Discussion

Our study examines the effects of providing employees with real sales reports that reflect inflation-adjusted sales on supermarket departments' sales performance. Contrary to the expected effect in H1a, the provision of inflation-adjusted sales reports (in response to a commonly known exogenous shock) does not appear to increase performance, i.e., the weekly sales numbers in the respective department. Instead, consistent with our hypothesis H1b, the results suggest that the provision of inflation-adjusted sales reports (in response to a commonly known exogenous shock) does indeed have a consistently negative effect on performance, i.e., weekly sales numbers. However, this effect is not only marginal but also not statistically significant, both in the analysis of the main treatment effect and in the additional analyses. An exception to this pattern arises in the group-specific additional analysis of departments that merely experience deflation. In our setting, departments that receive deflation-adjusted sales reports, considering only deflation values, record an increase in sales numbers, implying a potential positive impact on overall performance. This group-specific analysis would therefore support H1a but is also not statistically significant.

One significant finding that does emerge from our additional analyses, however, concerns the general relationship between inflation rates and sales numbers. Our data shows that sales in the supermarket departments in our sample generally fall with rising inflation. This outcome aligns with the group-specific analyses by levels of inflation: Departments that are exposed to low and medium levels of inflation generate significantly less sales per week than those facing no inflation. For departments that are exposed to high inflation rates, this effect is not significant. This could indicate that the setback caused by the low and medium inflation adjustments does not sufficiently motivate employees in these departments to enhance their performance, as they may not yet perceive the necessity to do so.

A similar pattern appears with regard to employees' sick days, namely that the treatment group generally does not differ significantly from the control group, except for departments affected by low inflation rates, where we observe a significant increase in sick days. This may again indicate that the setback caused by the inflation adjustment reduces employee motivation rather than enhancing it in these departments, possibly leading them to stay away from work more often – either due to demotivation or because they do not yet see an immediate need to increase their performance at the low inflation rates. The situation is similar for overtime worked by employees. Apart from the fact that each percentage point of inflation corresponds with a reduction of overtime hours per department per calendar week, we find no other significant effects. This significant finding suggests that employees might feel unfairly treated by the inflation adjustment as inflation rates rise, which might reduce their motivation and thus also their willingness to work overtime in order to recover sales. One possible explanation for the lack of notable differences between the treatment and control groups in our data is that, according to our group-specific analyses, there were no high inflation values (as defined in our study) at all during the treatment phase.

These vague results are consistent with previous findings in the literature, from which no clear expectation regarding the inflation adjustment of sales reports could be derived for our setting. While *standard economic theory* and the *controllability principle* suggest an adjustment of performance measures to uncontrollable factors (i.e., exogenous shocks), *behavioral research* implies that employees may be resistant to adjusting their performance downward. According to the *controllability principle*, managers should only be held accountable for the actions and results that they can significantly influence and control (Antle & Demski, 1988). Likewise, *agency theory* argues that filtering out exogenous shocks from company performance leads to a more transparent and realistic evaluation of that performance (Holmstrom, 1979, 1982). Nevertheless, our results tend to suggest that performance actually decreases as a result of such adjustments. Consequently, the recommendation in our setting is rather that the *controllability principle* should not be applied and that the sales reports should not be adjusted for inflation. This aligns with the findings of Burkert et al. (2011) and Giraud et al. (2008), who show that managers do not always desire full application of the *controllability principle*, preferring its implementation when their performance is influenced by internal uncontrollable factors but not by external factors.

Beyond this, the asymmetric controllability effect identified by Bol and Smith (2011) and Garvey and Milbourn (2006) is also reflected in our study. To a certain extent, the deflation

adjustment in our context is comparable to compensation for bad luck in their settings, as prices initially fall in the event of deflation and sales numbers drop as a result ceteris paribus. The deflation adjustment then causes sales numbers in the sales reports to rise again. During the treatment phase, the departments receiving deflation-adjusted sales reports then achieve even higher sales compared to those in the control group, although, as mentioned, this effect is not statistically significant. Conversely, the adjustment for inflation can be interpreted as a punishment for good luck, as inflation initially drives sales upwards through rising prices ceteris paribus. The inflation adjustment by contrast reduces sales numbers in the sales reports, meaning that the treatment group receiving inflation-adjusted sales reports achieves even lower sales numbers compared to the control group during our treatment phase. Again, this effect is not statistically significant. Nevertheless, these two effects ultimately support the notion that employees prefer to remove exogenous influences only when doing so benefits them (cf. Garvey & Milbourn, 2006). Otherwise, employees might be dissatisfied with the adjustment for the commonly known exogenous shock (i.e., inflation), even though it increases controllability, as it reduces their performance.

The recommendation that sales reports should not be adjusted for inflation in our setting can also be substantiated by *goal-setting theory*. Even though previous insights in this regard are ambiguous and acknowledge that challenging targets can motivate productive effort (cf. Locke et al., 1984; Locke & Latham, 1990), our findings suggest that inflation adjustment can lead to targets becoming so demanding that individuals give up on them (cf. Ioannou et al., 2016; Latham & Locke, 1991; Locke & Latham, 2002; Merchant & van der Stede, 2017). In this sense, the setback in relation to the sales of the departments treated may therefore have a demotivating rather than a motivating effect. This is consistent with previous studies showing that falling behind a natural reference point and previously held expectations about outcomes reduces employees' satisfaction (cf. Akerlof & Yellen, 1990; Bell, 1985; Kahneman & Tversky, 1979; Koszegi & Rabin, 2006; Loomes & Sugden, 1986; Ockenfels et al., 2015) and that providing information about relative rankings affects their performance negatively (Barankay, 2012). However, as this effect is not only minimal in our data but also not statistically significant, these conclusions must be treated with caution. As a consequence of our results, we accept the null hypothesis and reject H1a and H1b, as no significant difference exists between the treatment and control groups.

Nonetheless, since the inflation-adjusted sales reports in our experiment are not explicitly communicated to the employees, a possible future approach in practice would be to discuss the

impact of inflation on prices and sales development with them. This could engage employees more deeply in the target-setting process, potentially encouraging them to internalize these targets as personal goals (cf. Webb et al., 2010). Prior research supports this procedure: Adjusting targets that were originally set at an achievable level can increase employee motivation and performance (cf. Kelly et al., 2015; Liu & Leitch, 2013). Berger et al.'s (2024) study comes to the same conclusion and states that downward adjustments to performance targets during crises enhance employee motivation, as such revisions make them more realistically achievable and convey empathy.

As mentioned, one potential explanation for the marginal and statistically insignificant differences between the treatment and control groups in our study may lie in the flattening of the inflation rates in the food sector during our treatment phase. The inflation rate for food in Germany fell from 6.4 percent in October 2023 (the start of our control phase) to 1.1 percent in April 2024 (the end of our treatment phase) before rising again (Destatis, 2025). Since there were no longer any high inflation rates, the setback caused by the inflation adjustment of the sales reports was potentially not drastic enough to prompt employees to act. Another explanation could also be related to information processing and the sales reports themselves. Following the *situational awareness* framework, the additional information on the inflation-adjusted sales data, including the explanatory footnote in the reports, might lead to employees spending less time on this data and no longer processing the content in their hectic workday due to information overload (cf. Endsley, 2000; Jones & Endsley, 1996; Nadj et al., 2020). This is especially likely when the inflation adjustment shows only minor differences from the unadjusted report, thus offering limited additional information value. As Kohler et al. (2024) conclude, having more information is not always useful: For instance, while modern technology enables more and more opportunities to provide data to support decision-making, employees increasingly have to be selective about which of this data they should focus on.

Another possible explanation for our results is that attention to inflation may be endogenous and vary with its magnitude. This means that when inflation is high, households and companies pay more attention to it and are better informed about it through media coverage and daily experience (cf. Bean et al., 2022; Carroll, 2003; Cavallo et al., 2017; Coibion & Gorodnichenko, 2015; D'Acunto et al., 2021; Korenok et al., 2023; Lamla & Maag, 2012; Pfajfar & Santoro, 2010; Pfäuti, 2023). However, high inflation also causes households and companies to be less responsive to exogenously provided information about inflation and monetary policy (Weber et al., 2023). Following the *situational awareness* perspective again, it might therefore be

possible that employees are already accustomed to inflation and informed about it, meaning that they have a high level of information in this regard (cf. Endsley, 2000; Nadj et al., 2020). Consequently, they might be "blunted", making them less receptive to further exogenously provided information on inflation. Hence, the additional information provided in the inflation-adjusted reports might not add value in terms of awareness and insights, even if employees study them intensively. Consequently, this could explain the absence of significant differences between the treatment and control groups.

Especially the realization that sales in the supermarket departments fall with rising inflation nevertheless provides a relevant managerial implication. While it might be assumed that rising product prices due to inflation would, ceteris paribus, increase supermarket sales numbers, our results indicate the opposite, suggesting a shift in customer purchasing behavior that leads to lower sales overall. Inflation may cause consumers to generally shop less frequently, forego certain items, substitute products (e.g., with cheaper product categories or private labels and special offers), or switch to lower-priced retailers such as discounters. From the supermarkets' point of view, even in times of high inflation rates, managers should try to maintain a healthy balance between price increases and constant sales volumes in order to avoid cannibalizing themselves and losing customers on a permanent basis. Historically, it has regularly been the case that companies with substantial pricing power were able to further increase their markups due to the stickiness of inflation expectations of households, even as supply chain pressure eased (cf. Acharya et al., 2023). A potential approach to mitigate this risk could be to avoid fully passing inflation rates on to customers, allowing partial price relief that maintains competitiveness and customer loyalty.

3.6 Conclusion

As a result of the crises of the recent past, high inflation rates have emerged as one of the key global challenges. Even though there was a brief period of slight relief at the beginning of 2024, this downward trend has since ended and inflation remains persistently high (Destatis, 2024; IMF, 2024). In the food retail sector in particular, the rising consumer price index is forcing numerous individuals to change their purchasing behavior as they can no longer afford certain products (ECB, 2024; Tighe, 2024). At the same time, the sales numbers of retail chains increase with rising inflation, although the actual sales of goods in units may remain constant or even decline. This can give employees the impression that their performance is improving,

although these effects are actually driven by exogenous inflationary forces rather than by their own efforts.

In this context, our experimental study in a German retail chain investigates the effects of presenting employees with real sales data compared to nominal sales data. It is, to our knowledge, the first of its kind to examine how the inflation adjustment (as correction of an exogenous, uncontrollable factor) of performance measures affects employee performance. For this purpose, we assign retail employees to a control group, which receives nominal sales reports reflecting sales without inflation adjustment, and a treatment group, which receives real sales reports reflecting inflation-adjusted sales, to make them aware of the difference. We then look at the subsequent development of sales performance in these two groups.

This study is particularly interesting not only because of the topicality of its issue, but also because different streams of theory predict different outcomes. In line with *standard economic theory* and the *controllability principle*, such an inflation adjustment should make performance measurement more controllable and transparent by eliminating exogenous factors. *Behavioral research*, however, suggests that employees are reluctant to have their performance adjusted downwards and that they could be demotivated as a result. Consequently, an asymmetric controllability effect may arise, whereby employees might become dissatisfied with the adjustment for a commonly known exogenous shock (i.e., inflation) as it reduces their performance, even though such adjustment theoretically enhances controllability.

Our study provides five main results. First, the investigation of the main treatment effect of the provision of inflation-adjusted sales reports on sales performance concludes that a department receiving adjusted reports generates less sales in a calendar week than a department receiving non-adjusted reports. Consequently, in our setting, adjusting the reports for inflation leads to a reduction in performance for the departments treated. However, this effect is not only minimal but also not statistically significant. Additional analyses confirm this finding and, as a second result, show that sales in the supermarket departments in our sample fall significantly as inflation rises. When this consideration is further differentiated by the level of inflation, we find that departments exposed to low and medium levels of inflation, compared to no inflation, generate considerably less sales per calendar week, which is highly significant. By contrast, for departments exposed to high inflation, compared to no inflation, the drop in sales is substantially lower and this effect is not significant. Third, when a department receives the inflation-adjusted sales report, its employees record fewer (more) sick hours (overtime hours) than a department that receives the unadjusted report, although this relationship is not

significant. However, looking at departments that are only exposed to low inflation rates, the treated departments exhibit significantly more sick hours, and for each percentage point of inflation, the employees of the treated departments work significantly less overtime hours. Interpreting this as an indicator of effort, these findings suggest that employees might feel demotivated or possibly even unfairly treated by the inflation adjustment, which would explain their increased absenteeism. Fourth, the group-specific analysis by the level of inflation additionally shows that inflation rates have fallen so sharply in our setting that we were unable to observe high inflation rates according to our definition (above 8.53 percent) in any of the departments during our treatment phase. Fifth, the inflation rates of some product categories have fallen so sharply during our field study that almost a quarter of the data even showed deflationary values, resulting in deflation adjustments of the sales reports. These departments, which are exposed to deflation and thus receive higher sales numbers in their reports as a result of the adjustment, generate more sales in a calendar week than departments that receive the unadjusted report. However, this effect is again not significant.

Taken together, the results of our field experiment provide the implication that in our setting the *controllability principle* should rather not be applied, and sales reports should not be adjusted for inflation. To avoid potential employee demotivation resulting from the setback of inflation adjustment, a possible practical approach to this issue would be to discuss the impact of inflation on prices and sales development directly with employees. Such communication could more deeply involve employees in the target-setting process, encouraging them to internalize performance targets as personal objectives. With regard to inflation-driven changes in consumer purchasing behavior, it is advisable for retailers to ensure that not all cost hikes are always fully passed on to customers and that reductions in costs are also shared with them. This allows a healthy balance to be struck between moderate price increases and constant sales volume which prevents cannibalization and long-term customer loss. However, as most effects in our study are not only minimal but also statistically insignificant, these implications must be interpreted with caution.

This lack of significant differences between the treatment and control groups may stem from several factors. On the one hand, employees may have become accustomed to and informed about inflation through daily experience and intensive media coverage of high inflation rates, leading them to react less to exogenously provided information about inflation. As a result, the inflation-adjusted reports may not provide any added value in terms of awareness and insights. On the other hand, inflation rates fell so sharply during our treatment phase that the setback

from the inflation adjustment may not have been drastic enough for employees to feel compelled to take measures to increase sales in their department. Another possible explanation could be that the additional information in the inflation-adjusted sales reports is too extensive or too complex. Such potential information overload could deter employees from engaging with the reports. This effect may even be amplified if the inflation-adjusted sales represent only marginal differences compared to the unadjusted sales.

The use of physically displayed sales reports also constitutes a potential limitation of our field experiment. In contrast to laboratory studies, in our field study we are unable to determine whether and how intensively employees actually engage with the analog reports. A similar study using digital information delivery found that only about 30 percent of participants in the field viewed the respective performance reports at least once (cf. Kohler et al., 2024). It is therefore plausible that laboratory-based effects may overestimate actual engagement in the field. Nevertheless, future research could replicate our experiment in a laboratory environment in order to ensure that all participants actually fully engage with the reports and notice the differences between the inflation-adjusted and unadjusted versions. In addition, carrying out a follow-up questionnaire study in this context would help to clarify the employees' interpretations of the reports and whether they feel motivated or unfairly treated by the inflation adjustment. Such a questionnaire study would also be conceivable in the field in order to obtain authentic views from the day-to-day work of supermarket employees as well as insights into their subjective responses to inflation adjustments. This could also lead to greater consideration being given to the concept of *locus of control* (cf. Anderson, 1977; Anderson & Schneier, 1978; Brownell, 1981, 1982; Majerczyk et al., 2020; Miller et al., 1982; Spector et al., 2002). By exploring employees' personality traits and perceptions of control, for instance, it would be possible to determine whether they believe that they can actively influence sales in their department and which measures might enhance their perceived control.

Another limitation of our study certainly concerns the relatively short treatment phase of two months, which was initially determined by the supermarket chain as part of a pilot project. During this period, the food retail sector benefited greatly from declining inflation rates, further weakening the potential impact of the inflation-adjusted sales reports. Apart from this, the changes in sales could also be influenced by various other factors, particularly in the fast-moving food retail sector. For instance, Christmas during the control phase and Easter during the treatment phase, which are by far the two weeks with the highest sales for the supermarket chain, fall within our study period. In this respect, a repeated and, above all, long-term analysis

of our study would help to control for short-term and seasonal effects as well as other external factors. At the same time, differences in the ownership structure of supermarkets could also be considered in this context. It would be interesting to see whether other effects can be found in an environment that differs from the retailers' cooperative in our setting, for instance in a franchise store system.

At the outset, we posed the research question: *How does the adjustment of performance measures for uncontrollable factors on the difference to a performance reference point affect employees' performance?* Our study provides no significant evidence for or against such inflation adjustment of sales reports in terms of its impact on sales performance. Nonetheless, our study lays the valuable groundwork for further investigation into how adjustments of performance measures to correct for exogenous, uncontrollable shocks affect employee behavior and organizational outcomes. In essence, our study reminds both researchers and practitioners that the effectiveness of performance measures depends not only on their accuracy, but also on how fairly and meaningfully they are perceived by those who live by them. Future research can build on this.

References

Acharya, V., Crosignani, M., Eisert, T., & Eufinger, C. (2023). How Do Supply Shocks to Inflation Generalize? Evidence from the Pandemic Era in Europe. *NBER Working Paper.* Advance online publication. https://doi.org/10.3386/w31790

Akerlof, G. A., & Yellen, J. L. (1990). The Fair Wage-Effort Hypothesis and Unemployment. *The Quarterly Journal of Economics*, *105*(2), 255. https://doi.org/10.2307/2937787

Anderson, C. R. (1977). Locus of control, coping behaviors, and performance in a stress setting: A longitudinal study. *Journal of Applied Psychology*, *62*(4), 446-451. https://doi.org/10.1037/0021-9010.62.4.446

Anderson, C. R., & Schneier, C. E. (1978). Locus of Control, Leader Behavior and Leader Performance Among Management Students. *Academy of Management Journal*, *21*(4), 690-698. https://doi.org/10.2307/255709

Anderson, D. A., & Laughlin, L. (2020). *Retail Workers: 2018: American Community Survey Reports*. Retrieved August 23, 2023, from https://www.census.gov/content/dam/Census/library/publications/2020/demo/acs-44.pdf

Antle, R., & Demski, J. S. (1988). The Controllability Principle in Responsibility Accounting. *The Accounting Review*, *63*(4), 700-718.

Arnold, M. C., & Artz, M. (2015). Target difficulty, target flexibility, and firm performance: Evidence from business units' targets. *Accounting, Organizations and Society*, *40*, 61-77. https://doi.org/10.1016/j.aos.2014.12.002

Barankay, I. (2012). Rank incentives: Evidence from a randomized workplace experiment. *Working Paper*.

Barro, J. R., & Barro, R. J. (1990). Pay, Performance, and Turnover of Bank CEOs. *Journal of Labor Economics*, *8*(4), 448-481. https://doi.org/10.1086/298230

Bean, L., Bracha, A., & Tang, J. (2022). *Federal Reserve Bank of Boston Research Department Working Papers.* Federal Reserve Bank of Boston. https://doi.org/10.29412/res.wp.2022.04

Bell, D. E. (1985). Disappointment in Decision Making Under Uncertainty. *Operations Research*, *33*(1), 1-27. https://doi.org/10.1287/opre.33.1.1

Berger, L., Guo, L., & Wick, S. (2024). Navigating Unprecedented Times: How Managers' Empathetic Adjustments in a Crisis Influence Employee Effort in a Competitive Environment. *Journal of Management Accounting Research*, *36*(3), 73-94. https://doi.org/10.2308/JMAR-2023-041

Bertrand, M., & Mullainathan, S. (2001). Are CEOs Rewarded for Luck? The Ones Without Principals Are. *The Quarterly Journal of Economics*, *116*(3), 901-932. https://doi.org/10.1162/00335530152466269

Bol, J. C., Hecht, G., & Smith, S. D. (2015). Managers' Discretionary Adjustments: The Influence of Uncontrollable Events and Compensation Interdependence. *Contemporary Accounting Research*, *32*(1), 139-159. https://doi.org/10.1111/1911-3846.12070

Bol, J. C., & Smith, S. D. (2011). Spillover Effects in Subjective Performance Evaluation: Bias and the Asymmetric Influence of Controllability. *The Accounting Review*, *86*(4), 1213-1230. https://doi.org/10.2308/accr-10038

Bolton, G. E., & Ockenfels, A. (2010). Betrayal Aversion: Evidence from Brazil, China, Oman, Switzerland, Turkey, and the United States: Comment. *American Economic Review*, *100*(1), 628-633. https://doi.org/10.1257/aer.100.1.628

Brownell, P. (1981). Participation in Budgeting, Locus of Control and Organizational Effectiveness. *The Accounting Review*, *56*(4), 844-860.

Brownell, P. (1982). A Field Study Examination of Budgetary Participation and Locus of Control. *The Accounting Review*, *57*(4), 766-777.

Burkert, M., Fischer, F. M., & Schäffer, U. (2011). Application of the controllability principle and managerial performance: The role of role perceptions. *Management Accounting Research*, *22*(3), 143-159. https://doi.org/10.1016/j.mar.2011.03.002

Carroll, C. D. (2003). Macroeconomic Expectations of Households and Professional Forecasters. *The Quarterly Journal of Economics*, *118*(1), 269-298. https://doi.org/10.1162/00335530360535207

Cavallo, A., Cruces, G., & Perez-Truglia, R. (2017). Inflation Expectations, Learning, and Supermarket Prices: Evidence from Survey Experiments. *American Economic Journal: Macroeconomics*, *9*(3), 1-35. https://doi.org/10.1257/mac.20150147

Choi, J., Hecht, G., Tafkov, I. D., & Towry, K. L. (2016). Vicarious Learning under Implicit Contracts. *The Accounting Review*, *91*(4), 1087-1108. https://doi.org/10.2308/accr-51293

Coibion, O., & Gorodnichenko, Y. (2015). Is the Phillips Curve Alive and Well after All? Inflation Expectations and the Missing Disinflation. *American Economic Journal: Macroeconomics*, *7*(1), 197-232. https://doi.org/10.1257/mac.20130306

Cropanzano, R., & Folger, R. (1989). Referent cognitions and task decision autonomy: Beyond equity theory. *Journal of Applied Psychology*, *74*(2), 293-299. https://doi.org/10.1037/0021-9010.74.2.293

D'Acunto, F., Malmendier, U., Ospina, J., & Weber, M. (2021). Exposure to Grocery Prices and Inflation Expectations. *Journal of Political Economy*, *129*(5), 1615-1639. https://doi.org/10.1086/713192

Destatis (2023). *Consumer price index for Germany*. Retrieved August 23, 2023, from https://www.destatis.de/EN/Themes/Economy/Short-Term-Indicators/Basic-Data/vpi041j.html

Destatis (2024). *Inflation rate at +2.2% in April 2024*. Retrieved May 28, 2024, from https://www.destatis.de/EN/Press/2024/05/PE24_188_611.html

Destatis (2025). *Consumer price indices, food and non-alcoholic beverages*. Retrieved February 13, 2025, from https://www.destatis.de/EN/Themes/Economy/Short-Term-Indicators/Prices/kpre520.html#250148

ECB (2024). *How have households adjusted their spending and saving behaviour to cope with high inflation?* Retrieved May 28, 2024, from https://www.ecb.europa.eu/press/economic-bulletin/focus/2024/html/ecb.ebbox202402_03~289573ea78.en.html

Endsley, M. R. (1988). Design and Evaluation for Situation Awareness Enhancement. *Proceedings of the Human Factors Society Annual Meeting*, *32*(2), 97-101. https://doi.org/10.1177/154193128803200221

Endsley, M. R. (2000). Theoretical underpinnings of situation awareness: A critical review. *Situation Awareness Analysis and Measurement*, *1*(1), 3-21.

Endsley, M. R. (2017). From Here to Autonomy. *Human Factors*, *59*(1), 5-27. https://doi.org/10.1177/0018720816681350

Fehr, E., & Schmidt, K. M. (1999). A Theory of Fairness, Competition, and Cooperation. *The Quarterly Journal of Economics*, *114*(3), 817-868. https://doi.org/10.1162/003355399556151

Garvey, G. T., & Milbourn, T. T. (2006). Asymmetric benchmarking in compensation: Executives are rewarded for good luck but not penalized for bad. *Journal of Financial Economics*, *82*(1), 197-225. https://doi.org/10.1016/j.jfineco.2004.01.006

Ghosh, D., & Lusch, R. F. (2000). Outcome effect, controllability and performance evaluation of managers: some field evidence from multi-outlet businesses. *Accounting, Organizations and Society*, *25*(4-5), 411-425. https://doi.org/10.1016/S0361-3682(99)00045-8

Gibbons, R., & Murphy, K. J. (1990). Relative Performance Evaluation for Chief Executive Officers. *ILR Review*, *43*(3), 30-S-51-S. https://doi.org/10.1177/001979399004300303

Giraud, F., Langevin, P., & Mendoza, C. (2008). Justice as a rationale for the controllability principle: A study of managers' opinions. *Management Accounting Research*, *19*(1), 32-44. https://doi.org/10.1016/j.mar.2007.09.002

Golman, R., & Bhatia, S. (2012). Performance evaluation inflation and compression. *Accounting, Organizations and Society*, *37*(8), 534-543. https://doi.org/10.1016/j.aos.2012.09.001

Hartmann, F., & Schreck, P. (2018). Rankings, Performance, and Sabotage: The Moderating Effects of Target Setting. *European Accounting Review*, *27*(2), 363-382. https://doi.org/10.1080/09638180.2016.1244015

Holmstrom, B. (1979). Moral Hazard and Observability. *The Bell Journal of Economics*, *10*(1), 74. https://doi.org/10.2307/3003320

Holmstrom, B. (1982). Moral Hazard in Teams. *The Bell Journal of Economics*, *13*(2), 324. https://doi.org/10.2307/3003457

IFO (2024). *Economic Experts Survey: Decline in Inflation Expected in the New Year (Q4 2023)*. Retrieved March 1, 2024, from https://www.ifo.de/en/facts/2024-01-05/economic-experts-survey-decline-inflation-expected-new-year-Q4-2023

IMF (2024). *World Economic Outlook: Steady but slow: Resilience amid divergence.* Retrieved May 28, 2025, from

https://www.imf.org/en/publications/weo/issues/2024/04/16/world-economic-outlook-april-2024

IMF (2025). *Inflation rate, end of period consumer prices*. Retrieved July 11, 2025, from https://www.imf.org/external/datamapper/PCPIEPCH@WEO/WEOWORLD

Indjejikian, R. J., Matějka, M., Merchant, K. A., & van der Stede, W. A. (2014). Earnings Targets and Annual Bonus Incentives. *The Accounting Review*, *89*(4), 1227-1258. https://doi.org/10.2308/accr-50732

Ioannou, I., Li, S. X., & Serafeim, G. (2016). The Effect of Target Difficulty on Target Completion: The Case of Reducing Carbon Emissions. *The Accounting Review*, *91*(5), 1467-1492. https://doi.org/10.2308/accr-51307

Jain, A., & Huang, K. G. (2022). Learning from the Past: How Prior Experience Impacts the Value of Innovation After Scientist Relocation. *Journal of Management*, *48*(3), 571-604. https://doi.org/10.1177/0149206320979658

Jayaraman, S., Milbourn, T., Peters, F., & Seo, H. (2021). Product Market Peers and Relative Performance Evaluation. *The Accounting Review*, *96*(4), 341-366. https://doi.org/10.2308/TAR-2018-0284

Jenter, D., & Kanaan, F. (2015). CEO Turnover and Relative Performance Evaluation. *The Journal of Finance*, *70*(5), 2155-2184. https://doi.org/10.1111/jofi.12282

Jones, D. G., & Endsley, M. R. (1996). Sources of situation awareness errors in aviation. *Aviation, Space, and Environmental Medicine*, *67*(6), 507-512.

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, *47*(2), 263. https://doi.org/10.2307/1914185

KC, D., Staats, B. R., & Gino, F. (2013). Learning from My Success and from Others' Failure: Evidence from Minimally Invasive Cardiac Surgery. *Management Science*, *59*(11), 2435-2449. https://doi.org/10.1287/mnsc.2013.1720

Kelly, K. O., Webb, R. A., & Vance, T. (2015). The Interactive Effects of Ex Post Goal Adjustment and Goal Difficulty on Performance. *Journal of Management Accounting Research*, *27*(1), 1-25. https://doi.org/10.2308/jmar-50729

Kim, S., Matějka, M., & Park, J. (2023). Economic Determinants and Consequences of Performance Target Difficulty. *The Accounting Review*, *98*(2), 361-387. https://doi.org/10.2308/TAR-2021-0319

Kohler, M., Mahlendorf, M. D., Seiter, M., & Vogelsang, T. (2024). Social Comparison on Multiple Tasks: Sacrificing Overall Performance for Local Excellence? *Journal of Accounting Research*, Article 1475-679X.12535. Advance online publication. https://doi.org/10.1111/1475-679X.12535

Korenok, O., Munro, D., & Chen, J. (2023). Inflation and Attention Thresholds. *Review of Economics and Statistics*, 1-28. https://doi.org/10.1162/rest_a_01402

Koszegi, B., & Rabin, M. (2006). A Model of Reference-Dependent Preferences. *The Quarterly Journal of Economics*, *121*(4), 1133-1165. https://doi.org/10.1093/qje/121.4.1133

Kuroki, M., & Shirinashihama, Y. (2025). Target Difficulty, Psychological Capital, and Work Engagement. *European Accounting Review*, 1-23. https://doi.org/10.1080/09638180.2025.2451153

Lamla, M. J., & Maag, T. (2012). The Role of Media for Inflation Forecast Disagreement of Households and Professional Forecasters. *Journal of Money, Credit and Banking*, *44*(7), 1325-1350. https://doi.org/10.1111/j.1538-4616.2012.00534.x

Latham, G. P., & Locke, E. A. (1991). Self-regulation through goal setting. *Organizational Behavior and Human Decision Processes*, *50*(2), 212-247. https://doi.org/10.1016/0749-5978(91)90021-K

Lau, C. M., & Roopnarain, K. (2014). The effects of nonfinancial and financial measures on employee motivation to participate in target setting. *The British Accounting Review*, *46*(3), 228-247. https://doi.org/10.1016/j.bar.2014.02.006

Liu, X. K., & Leitch, R. A. (2013). Performance effects of setting targets and pay–performance relations before or after operations. *Management Accounting Research*, *24*(1), 64-79. https://doi.org/10.1016/j.mar.2012.12.002

Locke, E. A., Frederick, E., Lee, C., & Bobko, P. (1984). Effect of self-efficacy, goals, and task strategies on task performance. *Journal of Applied Psychology*, *69*(2), 241-251. https://doi.org/10.1037/0021-9010.69.2.241

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall.

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation. A 35-year odyssey. *The American Psychologist*, *57*(9), 705-717. https://doi.org/10.1037/0003-066X.57.9.705

Loomes, G., & Sugden, R. (1986). Disappointment and Dynamic Consistency in Choice under Uncertainty. *The Review of Economic Studies*, *53*(2), 271. https://doi.org/10.2307/2297651

Maas, V. S., & Shi, B. (2023). The effects of target difficulty and relative ability on managers' delegation decisions. *Management Accounting Research*, *60*, 100851. https://doi.org/10.1016/j.mar.2023.100851

Maas, V. S., van Rinsum, M., & Towry, K. L. (2012). In Search of Informed Discretion: An Experimental Investigation of Fairness and Trust Reciprocity. *The Accounting Review*, *87*(2), 617-644. https://doi.org/10.2308/accr-10205

Majerczyk, M., Owens, J., & Waddoups, N. (2020). Contract Framing, Expected Disappointment, and Effort: The Moderating Role of External Locus of Control. *Journal of Management Accounting Research*, *32*(2), 183-200. https://doi.org/10.2308/jmar-52566

Matějka, M. (2018). Target Setting in Multi-Divisional Organizations. *Journal of Management Accounting Research*, *30*(3), 13-27. https://doi.org/10.2308/jmar-52159

Matějka, M., & Ray, K. (2017). Balancing difficulty of performance targets: theory and evidence. *Review of Accounting Studies*, *22*(4), 1666-1697. https://doi.org/10.1007/s11142-017-9420-4

Merchant, K. A., & van der Stede, W. A. (2017). *Management control systems: Performance measurement, evaluation, and incentives* (Fourth edition). Pearson.

Miller, D., Kets de Vries, M. F. R., & Toulouse, J.-M. (1982). Top Executive Locus of Control and Its Relationship to Strategy-Making, Structure, and Environment. *Academy of Management Journal*, *25*(2), 237-253. https://doi.org/10.5465/255988

Morck, R., Shleifer, A., & Vishny, R. (1989). Alternative Mechanisms for Corporate Control. *American Economic Review*, *79*, 842–852.

Nadj, M., Maedche, A., & Schieder, C. (2020). The effect of interactive analytical dashboard features on situation awareness and task performance. *Decision Support Systems*, *135*, 113322. https://doi.org/10.1016/j.dss.2020.113322

Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, *5*(1), 14-37. https://doi.org/10.1287/orsc.5.1.14

Ockenfels, A., Sliwka, D., & Werner, P. (2015). Bonus Payments and Reference Point Violations. *Management Science*, *61*(7), 1496-1513. https://doi.org/10.1287/mnsc.2014.1949

Pfajfar, D., & Santoro, E. (2010). Heterogeneity, learning and information stickiness in inflation expectations. *Journal of Economic Behavior & Organization*, *75*(3), 426-444. https://doi.org/10.1016/j.jebo.2010.05.012

Pfäuti, O. (2025). Inflation - Who cares? Monetary Policy in Times of Low Attention. *Journal of Money, Credit and Banking*, *57* (3), 1211-1239. https://doi.org/10.1111/jmcb.13145

Roodhooft, F. (1995). Responsibility accounting: a dynamic multiple agent approach. *European Accounting Review*, *4*(3), 583-584. https://doi.org/10.1080/09638189500000038

Shang, R., Wang, Z., & Zu, Y. (2023). Manager narcissism, target difficulty, and employee dysfunctional behavior. *Contemporary Accounting Research*, Article 1911-3846.12864. Advance online publication. https://doi.org/10.1111/1911-3846.12864

Spector, P. E., Cooper, C. L., Sanchez, J. I., O'Driscoll, M., Sparks, K., Bernin, P., Büssing, A., Dewe, P., Hart, P., Lu, L., Miller, K., Moraes, L. R. de, Ostrognay, G. M., Pagon, M., Pitariu, H. D., Poelmans, S. A., Radhakrishnan, P., Russinova, V., Salamatov, V., . . . Yu, S. (2002). Locus of Control and Well-Being at Work: How Generalizable are Western Findings? *Academy of Management Journal*, *45*(2), 453-466. https://doi.org/10.5465/3069359

Tighe, D. (2024). *Impact of inflation on consumer behavior - Statistics & Facts*. Retrieved May 28, 2024, from https://www.statista.com/topics/9729/impact-of-inflation-on-consumer-behavior/#topicOverview

Webb, A., Jeffrey, S. A., & Schulz, A. (2010). Factors Affecting Goal Difficulty and Performance When Employees Select Their Own Performance Goals: Evidence from the Field. *Journal of Management Accounting Research*, *22*(1), 209-232. https://doi.org/10.2308/jmar.2010.22.1.209

Webb, R. A., Williamson, M. G., & Zhang, Y. (. (2013). Productivity-Target Difficulty, Target-Based Pay, and Outside-the-Box Thinking. *The Accounting Review*, *88*(4), 1433-1457. https://doi.org/10.2308/accr-50436

Weber, M., Frache, S., Georgarakos, D., Candia, B., Meyer, B. H., Coibion, O., Ropele, T., Kumar, S., Kenny, G., Lluberas, R., Gorodnichenko, Y., & Ponce, J. (2023). Tell Me Something I Don't Already Know: Learning in Low and High-Inflation Settings. *SSRN Electronic Journal.* Advance online publication. https://doi.org/10.2139/ssrn.4515596

Wickens, C. D. (2008). Situation awareness: Review of Mica Endsley's 1995 articles on situation awareness theory and measurement. *Human Factors*, *50*(3), 397-403. https://doi.org/10.1518/001872008X288420

Wong, B. (2015). Do Inflation Expectations Propagate the Inflationary Impact of Real Oil Price Shocks? Evidence from the Michigan Survey. *Journal of Money, Credit and Banking*, *47*(8), 1673-1689. https://doi.org/10.1111/jmcb.12288

Zhou, K. Z., & Li, C. B. (2012). How knowledge affects radical innovation: Knowledge base, market knowledge acquisition, and internal knowledge sharing. *Strategic Management Journal*, *33*(9), 1090-1102. https://doi.org/10.1002/smj.1959

Zureich, J. (2023). The (Un)Controllability Principle: The Benefits of Holding Employees Accountable for Uncontrollable Factors. *Journal of Accounting Research*, *61*(2), 653-690. https://doi.org/10.1111/1475-679X.12467

Appendix



Figure A 1: Exemplary display of a special product setup in the store



Figure A 2: Exemplary display of sales reports in the break room of a department (I/III)



Figure A 3: Exemplary display of sales reports in the break room of a department (II/III)



Figure A 4: Exemplary display of sales reports in the break room of a department (III/III)

Table A 13: Year-over-year comparison

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	−74.822	281.214	−0.27	0.791	−636.446	486.802
(Constant)	28,479.12***	84.722	336.15	0.000	28,309.92	28,648.33

n = 2,277; R^2 = 0.795; *p < 0.10, **p < 0.05, ***p < 0.01

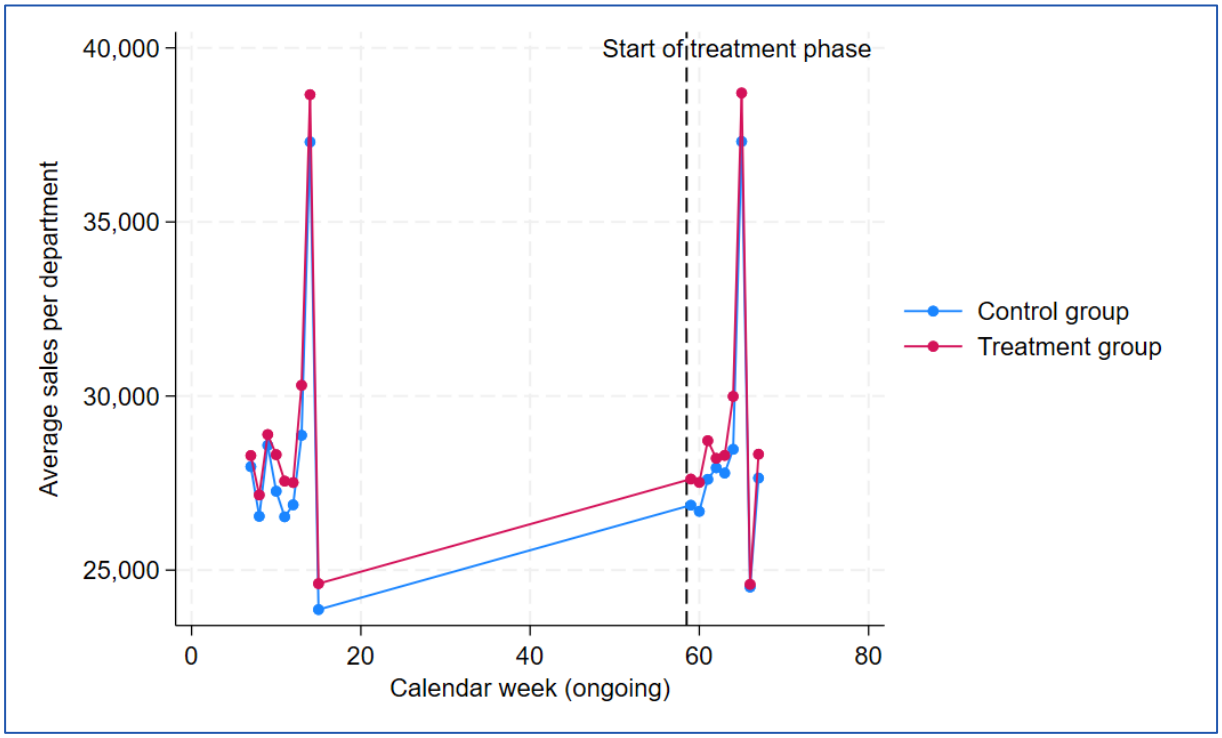

Figure A 5: Comparison of the sales development between treatment and control groups during treatment phase with year-over-year comparison

Table A 14: Additional analyses – Only low levels of inflation

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	−144.660	598.537	−0.24	0.810	−1,351.724	1,062.405
Inflation rate	−151.855	188.792	−0.80	0.426	−532.591	228.881
(Constant)	28,471.05***	345.900	82.31	0.000	27,773.48	29,168.62

n = 297; R^2 = 0.991; *p < 0.10, **p < 0.05, ***p < 0.01

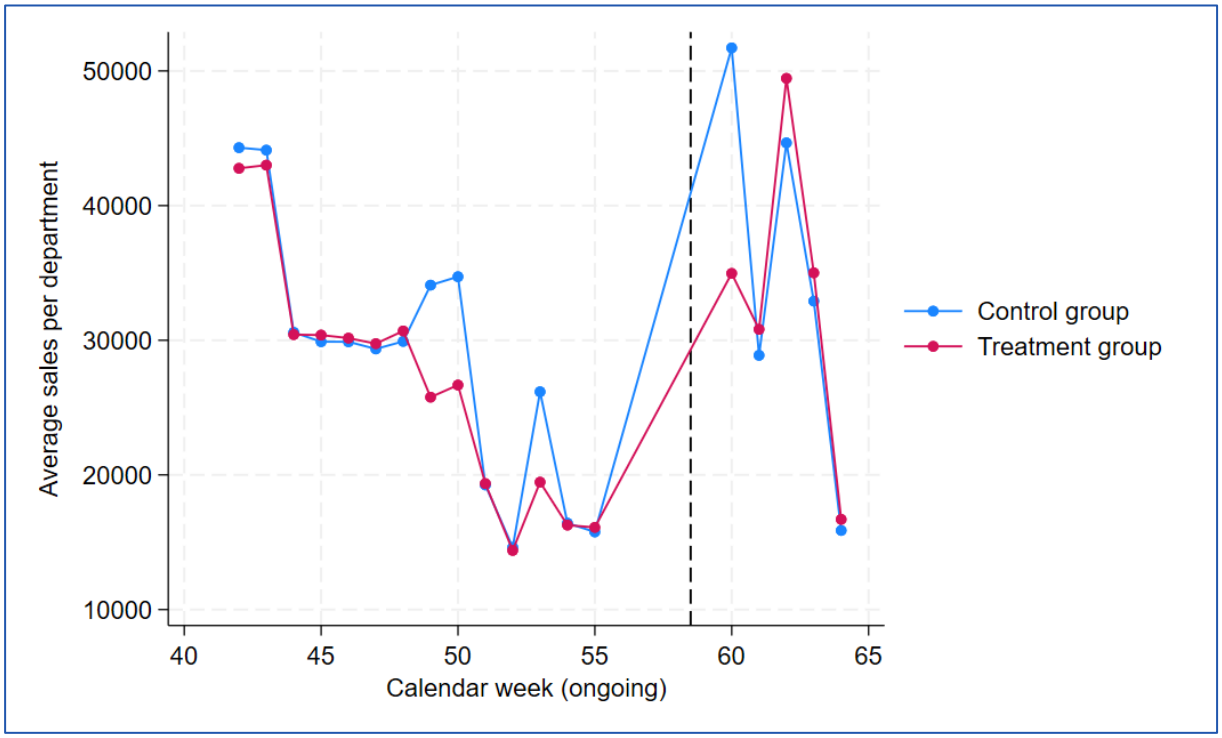

Figure A 6: Comparison of the sales development between treatment and control groups during control and treatment phases only with low levels of inflation

Table A 15: Additional analyses – Only medium levels of inflation

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	−590.647	1,059.115	−0.56	0.580	−2,726.557	1,545.262
Inflation rate	−174.764	194.191	−0.90	0.373	−566.387	216.859
(Constant)	53,507.31***	1,205.245	44.40	0.000	51,076.70	55,937.92
n = 693; R^2 = 0.926; *p < 0.10, **p < 0.05, ***p < 0.01						

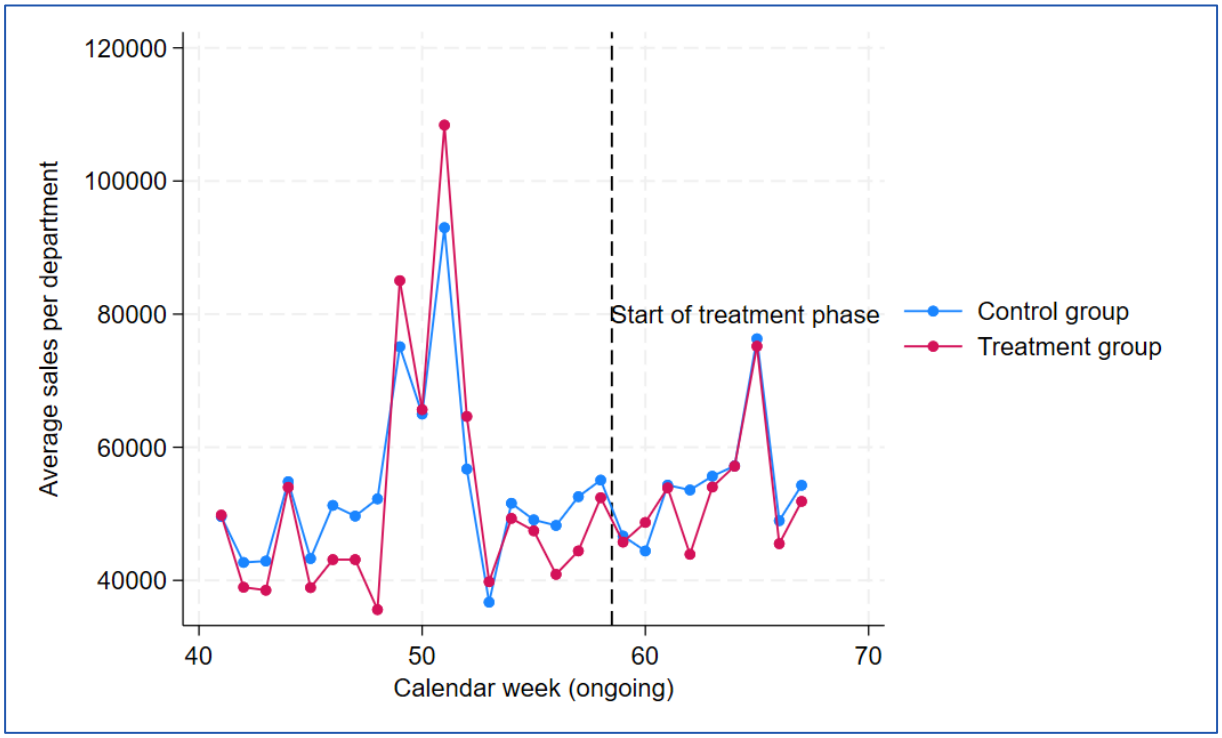

Figure A 7: Comparison of the sales development between treatment and control groups during control and treatment phases only with medium levels of inflation

Table A 16: Additional analyses – Only high levels of inflation

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	259.544	1,549.125	0.17	0.868	−2,864.565	3,383.652
Inflation rate	−3,096.206***	559.383	−5.54	0.000	−4,224.309	−1,968.103
(Constant)	76,508.73***	5,401.516	14.16	0.000	65,615.53	87,401.92

n = 330; R^2 = 0.973; *p < 0.10, **p < 0.05, ***p < 0.01

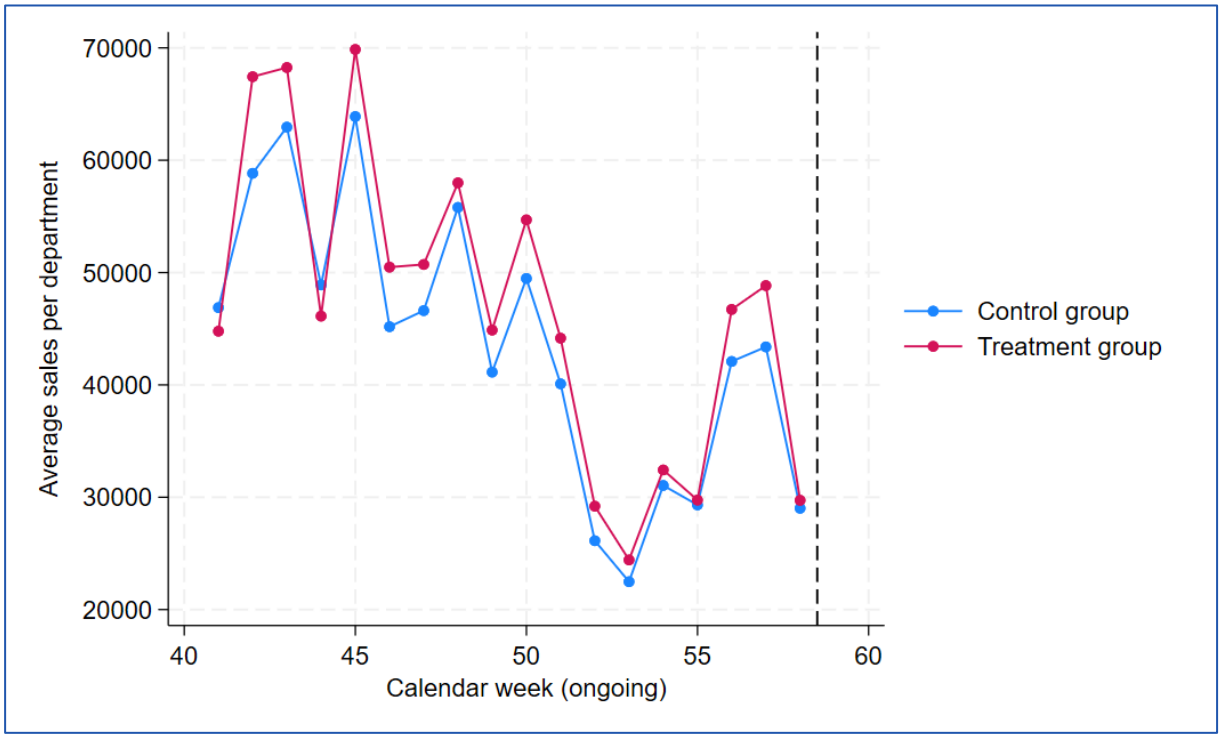

Figure A 8: Comparison of the sales development between treatment and control groups during control and treatment phases only with high levels of inflation

Table A 17: Additional analyses – Ranking of low and high performers

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	0.155	0.123	1.25	0.215	−0.092	0.401
(Constant)	5.073***	0.838	6.06	0.000	3.399	6.746
n = 66; R^2 = 0.024; *p < 0.10, **p < 0.05, ***p < 0.01						

Table A 18: Additional analyses – Ranking of low performers

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	0.100	0.408	0.24	0.808	−0.736	0.936
(Constant)	5.767	3.720	1.55	0.132	−1.853	13.386
n = 30; R^2 = 0.002; *p < 0.10, **p < 0.05, ***p < 0.01						

Table A 19: Additional analyses – Ranking of high performers

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Inflation adjustment	0.05	0.441	0.11	0.911	−0.853	0.953
(Constant)	5.483***	1.463	3.75	0.001	2.487	8.480
n = 30; R^2 = 0.001; *p < 0.10, **p < 0.05, ***p < 0.01						

Table A 20: Additional analyses – Effect on sick days

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Sick days	−1.213	2.697	-0.45	0.654	−6.606	4.180
(Constant)	11.283***	0.527	21.41	0.000	10.230	12.337
n = 1.648; R^2 = 0.340; *p < 0.10, **p < 0.05, ***p < 0.01						

Table A 21: Additional analyses – Effect on sick days with inflation as explanatory variable

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Sick days	−1.142	2.697	−0.42	0.673	−6.526	4.240
Inflation rate	0.183	0.195	0.94	0.351	−0.207	0.574
(Constant)	10.479***	0.939	11.16	0.000	8.601	12.357
n = 1.648; R^2 = 0.340; *p < 0.10, **p < 0.05, ***p < 0.01						

Table A 22: Additional analyses – Effect on sick days with inflation as explanatory variable with only low levels of inflation

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Sick days	16.888*	9.771	1.73	0.092	−2.893	36.669
Inflation rate	1.650	1.654	1.00	0.325	−1.698	4.999
(Constant)	6.638*	3.463	1.92	0.063	−0.372	13.648
n = 245; R^2 = 0.592; *p < 0.10, **p < 0.05, ***p < 0.01						

Table A 23: Additional analyses – Effect on overtime

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Overtime	0.178	1.240	0.14	0.887	−2.304	2.659
(Constant)	−0.222	0.226	−0.99	0.328	−0.674	0.229
n = 1.584; R^2 = 0.161; *p < 0.10, **p < 0.05, ***p < 0.01						

Table A 24: Additional analyses – Effect on overtime with inflation as explanatory variable

					95 % confidence interval	
	Coefficient	Standard error	t	p	Lower limit	Upper limit
Overtime	−0.019	1.226	−0.02	0.988	−2.472	2.434
Inflation rate	−0.472**	0.178	−2.66	0.010	−0.827	−0.117
(Constant)	1.813**	0.794	2.28	0.026	0.224	3.402
n = 1.584; R^2 = 0.164; *p < 0.10, **p < 0.05, ***p < 0.01						

4 Does Appreciation Only Pay off Temporarily? Effects of Voluntary One-off Payments on Employee Satisfaction

Author:	Marvin Kalla

Presented at:	ERMAC 2024 Empirical Research in Management Accounting & Control Conference in Vienna, Austria 2024 Ulm University Seminar on Emerging Research in Management Accounting and Control in Ulm, Germany
Acknowledgements:	I am grateful to the support of the Péter Horváth Foundation. Additionally, I would like to thank Kununu for providing access to their data, especially Allard van der Veen and Cordula Recht for their assistance and feedback. I have no conflicts of interest to declare. I also thank participants of the ERMAC 2024 Empirical Research in Management Accounting & Control Conference in Vienna and participants of the 2024 Ulm University Seminar on Emerging Research in Management Accounting and Control. I am especially grateful for the valuable comments provided by Felix Fritsch, Francisco de Asis Martinez-Jerez, Gerhard Speckbacher, Kai Alexander Bauch, and Simeon Schudy.

Abstract

In light of growing skilled labor shortages and workforce turnover, I investigate the effects of voluntary one-off payments on employee satisfaction. Although such one-off payments are an established corporate practice, little is known about how they are perceived by employees. Drawing on signaling theory and relational contracting, I expect that companies offering such payments experience an improvement in employee satisfaction compared to companies that do not. However, I also anticipate that this effect diminishes over time. Using the German inflation compensation premium as voluntary one-off payment and drawing on DAX and MDAX data from the employer review platform Kununu, I find evidence consistent with my first prediction: Companies that pay the premium benefit from a significant improvement in their overall score and several subcategories on Kununu relative to those companies that do not. However, I cannot confirm that this effect is strongest shortly after payment and diminishes over time, as anticipated in my second prediction. My study contributes to the literature on crowd-based data

in management accounting and control and provides valuable insights into the drivers of employee satisfaction.

Keywords: employee satisfaction; employer review platforms; one-off payments; inflation compensation premium

4.1 Introduction

Labor turnover and shortage of skilled workers have become some of the most pressing challenges for companies, having serious impact on organizational performance and cost (cf. Belo et al., 2017; Golden et al., 2020; Sanati, 2024). High turnover drives up expenses, reduces productivity, and erodes corporate culture (e.g., Allen et al., 2010; Bidwell, 2011; Brown & Matsa, 2016; Lazear, 2009). In addition, the relationship between employers and employees has changed drastically in recent times and this development has been further reinforced during the COVID-19 pandemic (e.g., Bedford et al., 2022; Lucas Ancillo et al., 2023; Mayew & Zhang, 2024). As a result, labor turnover rates in the United States of America and the United Kingdom have risen sharply and remained at a high level, as has wage growth in the United States of America (BLS, 2024a, 2024b; ONS, 2024).

This shift not only leads to a more competitive labor market, but also urges companies to create a more comprehensive working environment for their employees. This includes employers placing greater emphasis on supporting their employees during economic and social challenges. Hence, in today's globalized economy, the ability to attract and retain highly qualified employees is more important than ever for companies and represents a fundamental competitive advantage that is difficult to replicate (Grabner et al., 2024; Hatch & Dyer, 2004; Shaw et al., 2013). In this context, employee satisfaction can be interpreted as a reflection of the companies' intangible assets (Edmans, 2011). Given that recruiting new talent is generally more costly than retaining existing staff (Dabirian et al., 2017; Shaw, 2011), companies must differentiate themselves to attract and retain the most suitable candidates. Organizations capable of attracting a larger pool of applicants thereby increase their potential for cultivating a talented workforce and achieving sustained success (Greening & Turban, 2000; Jones et al., 2014).

Amid this shortage of skilled workers, labor turnover, and the growing importance of a comprehensive working environment, employer review platforms have emerged as valuable sources of crowd-based data on factors of employer attractiveness and employee satisfaction. Accordingly, voluntary disclosure of company performance is no longer carried out exclusively

through managerial reporting but can increasingly be derived in a decentralized manner from the perceptions of employees. This is due to the fact that such crowd-based data is influenced by non-public information that contains value-relevant insights into corporate performance.

Factors influencing perceptions of employer attractiveness in this respect can generally be divided into two groups (Delery & Roumpi, 2017). The first refers to tangible inducements and investments that a company offers its employees (e.g., Tsui et al., 1997), while the second concerns the perceived person-organization fit (e.g., Uggerslev et al., 2012). Among the first group, monetary incentives play a key role in influencing employer attractiveness. In this regard, one-off payments represent a long-standing corporate practice used to discretionarily supplement the regular salary of employees. Higher monetary compensation generally has a positive effect on perceived employer attractiveness (e.g., Chhabra & Sharma, 2014; Dögl & Holtbrügge, 2014). The effects of one-off payments in particular, however, have primarily been examined from an economic standpoint. Thus, little is known about the (long-term) implications of one-off payments on employee satisfaction from a corporate perspective.

According to *signaling theory*, organizational attributes (e.g., one-off payments) provide employees with signals about the company's values, thereby shaping their perception of working conditions and, in turn, employee satisfaction (cf. Connelly et al., 2011; Ehrhart & Ziegert, 2005). A similar reasoning applies within the framework of *relational contracting*: informal, self-reinforcing agreements grounded in trust, reciprocity, as well as shared values and social norms (Baker et al., 2002; Gibbons & Henderson, 2012; Grafton & Mundy, 2017). Although monetary incentives generally tend to successfully motivate behavior in the short term, this effect may fade once the incentives are removed (cf. Marinescu et al., 2021).

In order to investigate the impact of one-off payments as a cyclical measure, I analyze the effects of the German inflation compensation premium, introduced as part of the German Federal Government's relief package aimed at mitigating the European energy crisis. This premium allowed employers to voluntarily grant their employees up to €3,000 free of tax and duties from October 2022 to December 2024 (The Federal Government, 2022). By means of such a payment, employers can thus contribute to relieving the burden on their employees in view of the prevailing challenging circumstances. Given the strategic importance of attracting and retaining qualified employees, I conduct an archival data analysis to assess how these payments influence employer perceptions. Specifically, I use ratings of the German DAX 40 (German stock index consisting of the 40 major blue chip companies) and MDAX 50 (mid-cap-DAX including the 50 prime standard shares that rank in size immediately below the companies

included in the DAX) companies from the employer review platform Kununu. The respective DAX data was provided directly by Kununu as part of a research partnership. I supplemented this data set with MDAX reviews obtained via web scraping. This results in a total data set comprising 48,967 individual reviews of the 90 largest German companies. I hypothesize that those employers paying the inflation compensation premium as voluntary one-off payment benefit from an initial improvement in Kununu ratings, reflecting increased levels of appreciation and employee satisfaction. However, I also expect that this positive effect will diminish over time and eventually return to baseline satisfaction levels.

Four key findings emerge from my study. First, I show that employers in my sample paying the inflation compensation premium as voluntary one-off payment benefit from significantly better ratings on Kununu compared to companies that do not. Second, this positive effect extends beyond the overall score to the top categories of corporate culture and working environment, as well as to further subcategories (*salary/social benefits*, *working atmosphere*, *work-life balance*, *working conditions*, *environmental/social awareness*). Third, my group-specific analyses reveal a first-mover effect: Pioneering companies that are among the first to voluntarily pay the inflation compensation premium experience a significant long-term improvement in their ratings. Fourth, there is no evidence that this positive effect of one-off payments on employee satisfaction is strongest shortly after payment and then levels off over time. Taken together, my findings extend emerging research on crowd-based data in management accounting and control and provide valuable insights into one-off payments as drivers of employee satisfaction.

4.2 Theory and hypotheses

4.2.1 Drivers of employee satisfaction in transition

Driven by an increasing shortage of skilled workers, globalization, digitalization, and demographic change, the relationship between employers and employees is undergoing fundamental transformation. Young professionals in particular are acutely aware of their value and hold increasingly high expectations toward companies (Ranta & Ylinen, 2024). This transition not only intensifies the competition for talent, but also compels companies to retain their employees over the long term by offering an attractive working environment (Campello et al., 2023; Fauver et al., 2018; Garel & Petit-Romec, 2021). In order to adapt to these changing conditions in today's society, employers must respond to employees' needs and expectations, since recruiting new staff is associated with higher costs compared to retaining existing

employees (Bidwell, 2011; Dabirian et al., 2017; Holtom et al., 2008; Shaw, 2011). Considering the increasing frequency and severity of crises around the world, this also encompasses employers providing corresponding relief for employees during such times. Therefore, companies that are able to retain their employees benefit from a significantly lower weighted average cost of capital, creating a clear economic incentive for long-term employee satisfaction strategies (Mali et al., 2024).

Employee satisfaction and retention through the lens of the resource-based view

Employee satisfaction is central to this discussion, as it can be seen as a reflection of the company's intangible assets (Edmans, 2011). It not only enhances employer attractiveness and the ability to recruit and retain skilled workers, but also contributes to companies' financial success as workforce skills and knowledge accumulate over time (e.g., Crook et al., 2011; Grant, 1996). Employee tenure is positively associated with the development of human capital, knowledge, experience, loyalty, and motivation (e.g., Humphrey et al., 2009; Kline & Peters, 1991), while employee turnover has been shown to have a negative impact on company performance (Hancock et al., 2013; Hausknecht & Trevor, 2011; Kacmar et al., 2006). Consequently, in line with the *resource-based view*, existing research shows that investments in employee skills represent a source of sustained comparative advantage (Barney et al., 2011; Grant, 1996; Hitt et al., 2016). Accordingly, Edmans (2011) finds that companies listed in the "Fortune 100 Best Companies to Work For" achieve higher long-term stock returns. These findings are supported by Schneider et al. (2003), who conclude that overall employee satisfaction as well as their perception of safety, compensation, and the work group have a positive impact on return on assets and earnings per share.

Signaling theory and the communication of employer characteristics to employees

Several studies have already addressed how employee satisfaction can be effectively achieved. In this context, for instance, *signaling theory* indicates that organizational characteristics convey signals to employees about corporate values, thereby shaping their perception of working conditions, which ultimately has an impact on their satisfaction (e.g., Chatman, 1989; Connelly et al., 2011; Ehrhart & Ziegert, 2005). Factors affecting employee satisfaction can generally be categorized into two dimensions (Delery & Roumpi, 2017): on the one hand, inducements and investments such as compensation and benefits (e.g., Tsui et al., 1997), and on the other hand, so-called person-organization fit perceptions, i.e., the alignment between an individual's values and the company's culture (e.g., Uggerslev et al., 2012). Within the first category, financial incentives are important aspects influencing employee satisfaction and

fluctuation (Carter & Lynch, 2004; Hilary et al., 2025; Smart & Chamberlain, 2017). Besides the regular salary, bonuses and one-off payments can also play a part here, as higher monetary compensation has a positive effect on perceived employer attractiveness (e.g., Chhabra & Sharma, 2014; Dögl & Holtbrügge, 2014). In this respect, the introduction of performance-related remuneration systems can enhance employee retention (Ho et al., 2009). This goes hand in hand with the justification for pay disparity which can also have a decisive influence on employee satisfaction and performance (Rouen, 2020). Nonetheless, previous research emphasizes that employee satisfaction also depends on other factors that are not necessarily related to monetary remuneration (e.g., Campbell, 2008; Presslee et al., 2023).

Corporate culture, for instance, is identified by Graham et al. (2022) as a critical determinant of employee satisfaction. Likewise, a company's strong social performance enhances employer attractiveness for applicants (Greening & Turban, 2000), as this allows companies to differentiate themselves from their competitors in the labor market (Jones et al., 2014). In this regard, new work paradigms and organizational models are becoming increasingly decisive factors for employee retention (Autrey et al., 2019; Hope et al., 2021; Presslee et al., 2023). These include aspects such as part-time work (Wiswall & Zafar, 2018), remote work as well as commute length (Le Barbanchon et al., 2021), and the ability to avoid irregular working hours (Mas & Pallais, 2017).

In this context, a healthy work-life balance in general is increasingly becoming a major determinant for employee motivation, performance, and overall satisfaction (Hope et al., 2021), especially among the younger generation of employees, who consider this an important factor when choosing an employer (Baudot et al., 2022). The design of compensation contracts and job characteristics can also contribute to employee (self-)selection, which helps to align individual employee preferences with corporate objectives (Abernethy et al., 2015; Campbell, 2012; Shields & Waller, 1988; Waller & Chow, 1985). For instance, Liu et al. (2023) show that maternity leave benefits can serve as a non-wage mechanism for women to attract and retain employees with certain characteristics, while Cai (2023) finds that formal recruitment systems measuring cultural fit enhance long-term retention. Similarly, employees are less likely to leave organizations where their social group is well represented and more likely to join those where they identify with peers (cf. Ahn et al., 2025). Overall, organizational prestige and diversity orientation are certainly decisive for retaining high-performing employees (cf. Choi et al., 2023b; Collins, 2007; Condie et al., 2023).

From a corporate governance perspective, pro-social leadership that prioritizes workforce well-being has a significant impact on employee retention (Feng et al., 2024), as does corporate social responsibility when applied effectively (Schuhmacher et al., 2022). In addition, employee approval of CEOs is generally essential for organizational efficiency, employer attractiveness, and the recruitment of highly qualified staff (Barnes & Cheng, 2023).

Finally, transparency mechanisms can further enhance satisfaction and retention. The internal publication of employee performance cannot only minimize conflicts, but also promote employee productivity and retention by giving colleagues and managers a better overview of each other's performance (Hofmann & Indjejikian, 2024; Lilge & Ramchandani, 2024). Similarly, the disclosure of earnings announcements can play a decisive role in attracting and retaining employees. Job seekers are more likely to apply to companies when they are presented with evidence of positive performance (Choi et al., 2023a). Conversely, higher employee satisfaction is also associated with better financial results for the company (Chen, 2009; Green et al., 2019; Harter et al., 2002).

Relational contracting enhances employee satisfaction through trust and reciprocity

In view of the dynamic business environment and the intensified competition for skilled labor, it is becoming increasingly important to examine the equally evolving factors of employee satisfaction and retention. *Relational contracting* represents a particularly relevant manifestation of this transition. Relational contracts are informal, self-enforcing agreements between companies sustained by the anticipated value of future interactions (Baker et al., 2002). Unlike legally binding employment contracts, relational contracts rely on trust, fairness, reciprocity, shared values and social norms, as well as mutual expectations, rather than legal enforcement (Gibbons & Henderson, 2012; Grafton & Mundy, 2017). In such a scenario, companies adhere to the implicit agreements out of self-interest as they benefit from continued cooperation and face considerable loss if they are excluded (Gibbons & Henderson, 2012).

While much of the literature has focused on inter-organizational relational contracts (Bondareva & Pinker, 2019; Gibbons & Henderson, 2012), a growing body of research examines their intra-organizational impact particularly on employee motivation, productivity, and retention. In this context, well-designed relational contracts have been found to significantly improve job satisfaction, morale, and collaboration while reducing employee absenteeism (Adhvaryu et al., 2022; Akerlof & Kranton, 2005; Blader et al., 2019; Board, 2011). Brown et al. (2004) additionally argue that companies investing in long-term relational contracts tend to offer

higher wages, promote job security, and distribute productivity gains more equitably. Employees in turn reward this with greater motivation, effort, and loyalty.

Against this backdrop, it is particularly interesting to examine whether one-off payments, such as the inflation compensation premium, continue to be valued by employees and for how long this appreciation persists – or whether other factors, potentially including non-monetary ones, increasingly take precedence. From a *relational contracting* perspective, it is reasonable to assume that one-off payments help to strengthen mutual appreciation between employers and employees. If companies support their employees during challenging times, this is likely to contribute to employee satisfaction and encourages them to repay their employers with effort and loyalty (cf. Mayew & Zhang, 2024). While many companies often use pay cuts to reduce labor costs during organizational crises (cf. Carter et al., 2024; Cheng et al., 2024), by paying the inflation compensation premium, numerous companies have made a conscious decision to support their employees during this recent crisis.

4.2.2 Employer review platforms as a source of corporate information

A relatively new and transparent way to evaluate employee satisfaction arises through voluntary disclosures on employer review platforms (cf. Hales et al., 2018; Mahlendorf et al., 2023; Symitsi et al., 2021; Teoh, 2018). Positive reviews on these platforms signal employee satisfaction and offer companies the opportunity to stand out from their competitors, whereas negative reviews can harm their reputation. Job seekers, in turn, can use these reviews as informational tools when deciding where to apply.

Previous findings on the value and effects of employer review platforms in the accounting literature remain scarce. Existing studies often derive insights into the prediction of company performance from rank-and-file employees' ratings on these platforms. In this way, employer ratings can serve as forecasting tools helping to predict future company performance, for instance with regard to sales forecasts (Hales et al., 2018) or profitability (Green et al., 2019). In one of the first studies in this regard, Hales et al. (2018) show that employee assessments of company outlook on Glassdoor can predict future financial disclosures and corporate growth. Companies with more optimistic employee expectations on Glassdoor tend to have higher future returns – this forecasting power is plausibly explained by employees' access to forward-looking internal information about company fundamentals (Sheng, 2023). Likewise, Huang et al. (2020) find that employees' assessments of their employers' company outlook on Glassdoor are useful predictors of future operating performance, with predictive quality increasing when disclosures are aggregated from larger, more diverse, and more knowledgeable employee bases.

In a similar vein, Green et al. (2019) address the relation between Glassdoor employer reviews and stock returns. They document a significant association between changes in employee satisfaction and stock returns and show that this effect is related to changing employee ratings of the categories *career opportunities* and *senior management*, is modestly related to changes in *compensation & benefits* and *culture & values* ratings, and is unrelated to ratings of *work-life balance*. According to the authors, changing employer reviews also predict changes in sales growth and profitability, and can be used to forecast earnings surprises. However, the informativeness of employee reviews varies with job status, employee location, and characteristics of the review. Additionally, employees' business outlooks on Glassdoor are positively correlated with analysts' earnings forecast revisions and forecast errors, implying that these business outlooks can predict future stock returns (Green et al., 2019).

Furthermore, companies with lower job satisfaction and *culture & values* ratings on Glassdoor are more likely to be subject to SEC enforcement actions for fraud and securities class action lawsuits, indicating that the work environment appears to play a critical role in financial reporting risk (Ji et al., 2022). Complementing these insights, Welch and Yoon (2022) find that companies with highly rated managers on Glassdoor and strong ESG efforts exhibit significantly higher future stock returns than those with low ratings in both domains. Relatedly, Li et al. (2022) analyze employees' online profiles and resumes from websites and social media platforms (such as LinkedIn), and find that employee turnover is negatively associated with companies' future financial performance.

Employer reviews also respond dynamically to corporate events: Lee et al. (2021) show that employee perceptions of managers and companies on Glassdoor decrease following news about tax avoidance. Similarly, Campbell and Shang (2022) measure the "tone at the bottom" based on Glassdoor data and derive metrics for the risk of organizational misconduct. In a related study, Gao et al. (2023) observe that companies significantly increase their demand for accounting skills, measured by the share of job postings requiring accounting-related skills, after internal control weaknesses. Likewise, job seekers initiate job-search activity in response to prospective employers' positive earnings announcements and media coverage (Choi et al., 2023a; de Haan et al., 2023).

Collectively, these findings suggest that voluntary disclosure of company performance may no longer come exclusively from managerial reporting but can increasingly be derived from employee perceptions. On the other hand, companies themselves also harness ratings on these platforms (cf. Fritsch, 2022). They improve their workplace practices after being reviewed there

and disclose more information about these workplace practices after being rated, suggesting that transparency via social media has a disciplining effect on company policies (Dube & Zhu, 2021).

Previous research on broader social media and crowdsourcing data often addresses validity in terms of price information and forecasting for investment decisions and shows that such public financial analysis substantially assists investors (cf. Bartov et al., 2018; Campbell et al., 2019; Drake et al., 2023; Drake et al., 2017; Gomez et al., 2024; Jame et al., 2022). These findings support the assumption that employee reviews (and posts on other crowdsourcing platforms) are influenced by non-public information and reflect value-relevant insights into company performance (cf. Ang et al., 2021; Da & Huang, 2020; Li & Zhou, 2024; Tang, 2018). Since companies are less inclined to disclose financial news on social media when it is unfavorable (Gómez-Carrasco et al., 2021; Jung et al., 2018) or when no significant events are taking place (e.g., earnings announcements or the filing of financial statements) (Crowley et al., 2024), employer review platforms can act as a counterbalance to maintain transparency. Nonetheless, analysts still underestimate this information content about future earnings in their analyses (Li et al., 2019). Huang et al. (2018) similarly find that rank-and-file employees' predictions of their company's business outlook on Glassdoor are incorporated only partially into managers' decisions.

While prior studies (cf. Liu et al., 2017; Marinescu et al., 2021) suggest that Glassdoor ratings suffer from minimal selection bias, and while such individual ratings may be noisy, aggregating a substantial number of reviews across employees reveals balanced insider information about company fundamentals (Dube & Zhu, 2021; Green et al., 2019; Teoh, 2018). Schafhäutle and Veenman (2023) even find that crowdsourced forecasts are less biased than analyst forecasts. Landers et al. (2019) confirm the information content of such data by showing the validity of the overall Glassdoor rating as a measure of overall job satisfaction. In addition, Kununu implemented several features and policies to ensure that the reviews on their platform are authentic and credible. As a result, reviews undergo a verification process by both algorithms and quality management staff and are only published if they comply with the Kununu guidelines (Kununu, 2025). Furthermore, the anonymous nature of the reviews is intended to prevent users from submitting reviews for reputation-related incentives (de Haan et al., 2023). Crowdsourced data can thus assist in inductively identifying topics that are important to employees and quantifying their connection to employees' perception of corporate culture (Schmiedel et al., 2019). Since individuals are more inclined to share experiences characterized by emotion and

arousal, the inflation compensation premium may represent a salient employment experience that increases the likelihood of being shared as an online review (cf. Berger, 2011; Heath, 1996).

4.2.3 Cyclical measures and one-off payments

As outlined above, various studies (e.g., Bénabou & Tirole, 2006; Dögl & Holtbrügge, 2014; Gneezy et al., 2011) show that higher monetary compensation has a positive effect on perceived employer attractiveness. Salary can therefore be used strategically to enhance companies' appeal in the labor market. In addition to the fixed salary, variable bonuses and one-off payments can also play a role here. The *theory of reciprocity* predicts that employees will respond to the advance courtesy of one-off payments with increased effort (e.g., Akerlof, 1982; Bolton & Ockenfels, 2000; Dufwenberg & Kirchsteiger, 2004; Falk & Fischbacher, 2006). Nevertheless, previous studies have yielded mixed empirical evidence on the effects (cf. Gilchrist et al., 2016; Gneezy & List, 2006; Hannan et al., 2002; Kube et al., 2012). Chung and Narayandas (2017) and Isselhard et al. (2026), for instance, conclude that performance-based pay has a significantly stronger effect on employee performance than one-off payments. Esteves-Sorenson (2018) provides an overview of possible confounding factors for these fluctuating results. While monetary incentives are generally effective in motivating short-term behavior, performance may decline once these incentives are withdrawn (cf. Bareket-Bojmel et al., 2017; Marinescu et al., 2021) – making the investigation of the effects of one-off payments particularly pertinent.

Beyond the corporate perspective, such one-off payments are widely used as instruments of economic stimulus. Accordingly, the effects of cyclical and fiscal one-off payments have mainly been examined from a macroeconomic viewpoint. In general, such economic stimulus measures aim to support adequate economic growth, price stability, high employment, and external balance. For instance, Kaplan and Violante (2014) compare household consumption responses to fiscal stimulus payments (i.e., direct lump-sum payments from the government to households) during the 2001 and 2008 recessions. They find that the proportional consumption response in 2008 was about one-third lower, primarily due to the greater amount of the payment. Similarly, Liu et al. (2021) analyze a large-scale Chinese government-issued digital coupon program on consumer spending and illustrate the importance of embedding behavioral factors in public policy design to stimulate spending cost-effectively. Parker et al. (2013) add to this and show that households spent about 12 to 30 percent of their 2008 stimulus payments on nondurables, with total spending including durables reaching 50 to 90 percent of the payment value. A recent strand of research in this regard examines the effects of government relief

programs during the COVID-19 pandemic: The observed inequality of how companies benefitted from government aid programs is a general concern in such matters (e.g., Alekseev et al., 2023; Bischof et al., 2024; Granja et al., 2022). Another related area of research considers universal basic income as a cyclical tool, the effects of which, however, remain largely unexplored (cf. Bohmann et al., 2021; Hoynes & Rothstein, 2019).

Shifting the focus to labor market behavior, Parker and Souleles (2019) compare reported versus revealed preference estimates of spending from stimulus payments and find that revealed preferences indicate higher propensities to spend. Finally, Powell (2020) examines labor supply responses to transitory income using the 2008 tax rebates. He finds that households responded to the receipt of payments by reducing their labor supply. From the corporate perspective, Novak and Bilinski (2018) document that executives in companies with negative public reputations (e.g., tobacco, gambling, and alcohol) receive a compensation premium to offset reputational costs.

While these studies present insights from related disciplines, findings on the impact of one-off payments within a corporate context remain largely unexplored. My study addresses this gap. Accordingly, the research question for this endeavor is as follows: *How does the voluntary one-off payment by companies affect their employees' satisfaction?*

On the one hand, I investigate differences in employee satisfaction between companies that provide one-off payments and those that do not. On the other hand, I investigate temporal dynamics within companies that make the payment (e.g., directly after payment versus some time later). In this context, following *signaling theory* and *relational contracting*, I expect that initiating one-off payments sends signals about organizational attributes to employees and thus shapes their perception of working conditions, which in turn affects their perception of employee satisfaction. Consequently, I expect companies that make such a discretionary payment to receive higher levels of employee satisfaction shortly after the payment, as these employees perceive higher levels of appreciation. However, I also expect that this increased satisfaction levels off over time and that this positive effect, driven by one-off payments, therefore only lasts temporarily. Accordingly, my hypotheses to be tested are as follows:

H1: *The provision of voluntary one-off payments by employers leads to higher satisfaction among their employees.*

H2: *The positive effect of the provision of one-off payments on employee satisfaction is strongest shortly after payment and levels off over time.*

Nonetheless, media coverage and public discourse may also shape employee expectations. Contrary to the expected hypotheses, it could therefore also be the case that employees expect their employer to pay the inflation compensation premium. As a result, the tension could arise that companies that pay the premium experience no change in employee ratings, whereas those that do not pay it experience worse ratings. Thus, by looking at the effects of one-off payments at multiple points in time, I aim to determine whether such a corporate measure is an effective way to improve employee satisfaction.

4.3 Data and method

4.3.1 Data

In order to measure employee satisfaction, I use data from one of the largest platforms for employer reviews: Kununu.com. Launched in 2007, the website allows current and former employees to anonymously review companies, salaries, corporate culture, and corporate benefits based on a variety of characteristics. By 2023, Kununu reported over 10 million employer insights, an average of 10.800 new reviews per week, and more than 4.9 million active monthly users (Kununu, 2023). I draw on data from Kununu, as it is the leading employer review platform in Germany.

As part of an official research partnership, the respective review data from DAX-listed companies was provided directly by Kununu, ensuring the data's quality, completeness, and accuracy. I first approached Kununu regarding a possible collaboration in early 2024. After several interactions, including the submission of a detailed research proposal, I signed a formal collaboration agreement with Kununu in August 2024. This agreement granted me access to individual employee reviews collected by the platform.

To broaden the sample, I supplemented this DAX data set with reviews from MDAX-listed companies that are not part of the research partnership with Kununu, which I obtained through web scraping. There are several reasons for expanding the DAX data set to include MDAX reviews. First, incorporating 50 additional companies increases the sample size, thereby enhancing the validity and robustness of the analysis. Second, the expansion allows for a broader representation of company sizes. By including mid-cap companies, the analysis is not limited to Germany's largest corporations and thus reflects a broader range of workplace environments. This diversity is valuable as working conditions and employee benefits may already be so well established in larger companies that an additional one-off payment exerts

only reduced influence on employer reviews. Third, while nearly all DAX companies issued the inflation compensation premium, the MDAX sample shows greater variation in this regard. Consequently, the inclusion of MDAX reviews increases the number of companies that did not make such payments, which enlarges the control group and allows for more robust comparisons.

The individual reviews include the following quantitative information, although not all users evaluate every category: the *overall score* (which is calculated as the average of the ratings in the 13 subcategories), the 13 subcategories grouped into four top categories *salary/social benefits*, *image*, *career/training* (career opportunities & compensation); *working atmosphere*, *communication*, *colleague cohesion*, *work-life balance*, *supervisor behavior*, *interesting tasks* (corporate culture); *working conditions*, *environmental/social awareness* (working environment); *equal rights*, *dealing with older colleagues* (diversity). Each dimension is rated on a one-to-five-star scale, and reviews also include an *employer recommendation to a friend* category (coded as 1 for *yes* and 0 for *no*).

I use Kununu data from January 2019 to June 2024 for each of the 40 companies in the German share index DAX and each of the 50 companies in the German share index MDAX. The original DAX data set provided by Kununu contained 49,525 individual reviews, while the original MDAX data set, obtained via web scraping, comprised 25,719 individual reviews. I adjusted these two data sets by removing those reviews that did not originate from permanent employees (i.e., apprentices, contractors, freelancers, students) and that were no longer listed as online by Kununu at the time of the evaluation (e.g., because they violated the terms of use). This resulted in a final data set with a total of 48,967 individual reviews (34,323 from DAX companies and 14,644 from MDAX companies). Table A 25 in the appendix provides monthly information on the number of companies in the control and treatment groups, the number of DAX and MDAX reviews, and the average overall score of the companies in the control and treatment groups during the period analyzed.

I focus on the 90 largest German companies in these indices as the inflation compensation premium described was a cyclical measure of the German Federal Government that applied to employers in Germany. I use multiple information sources to determine which of the DAX and MDAX companies paid the inflation compensation premium, and if so, when and in what amount they did so. First, I contacted the respective press and communications offices of each of the companies and requested official information on how the inflation compensation premium was handled. Simultaneously, I made enquiries with the Federal Statistical Office of Germany and the German Federal Ministry of Finance, both of which confirmed that they had

no such data recorded. For those companies that did not provide me with any information, I conducted additional research and documented press releases, official corporate statements, annual and sustainability reports, as well as media reports on the administration of the inflation compensation premium. Since the majority of the companies in my sample are bound by collective agreements (e.g., metal and electrical industry, chemical industry), I was also able to draw on official communications from the respective trade unions, which provide detailed information about how the inflation compensation premium was handled by companies across sectors. Table A 26 and Table A 27 in the appendix give an overview of which of the DAX 40 and MDAX 50 companies paid the inflation compensation premium, when they did so, and to what amount.

4.3.2 Method

To test my hypotheses, I run difference-in-differences regressions using the Kununu data. The independent variable *inflation compensation premium* depends on whether companies paid this voluntary one-off payment to their employees or not (coded as 1 for *yes* and 0 for *no*). A company is considered to be treated from the month following the first payment of the inflation compensation premium and then remains in this treatment group thereafter. In the periods prior to the payment of the premium, the companies remain in the control group. The dependent variables relate to the *quantitative employer ratings on Kununu*, which are expected to change as a result of the payment of the inflation compensation premium. This includes the overall score of the employer rating, the four top categories and the 13 subcategories from which it is derived, as well as the recommendation rate.

I deal with a staggered treatment design in this scenario, which means that the time at which employees from different companies receive their treatment (i.e., the payment of the inflation compensation premium) is not fixed but varies across companies and over time. The standard difference-in-differences regression compares outcomes before and after the treatment between a treated group and a control group. For my sequential approach, however, I take into account that the treatment occurs at different times, which means that I compare outcomes at multiple points in time for companies that have been treated in different periods. Accordingly, within this setup the following three different cohorts emerge:

- **The treated group:** This group comprises companies that have already paid the inflation compensation premium to their employees.

- **The not yet treated group:** This group includes companies that have not yet paid the inflation compensation premium to their employees but will do so in a future period.
- **The never treated group:** This group includes companies that do not pay the inflation compensation premium to their employees.

In order to run my difference-in-differences analyses with multiple time periods, I use the *did* package in R Studio by Callaway and Sant'Anna (2021). Since in my scenario the treatment period (i.e., the payment period of the inflation compensation premium) varies across the companies in my sample, regular difference-in-differences estimates are not adequate. The group-time estimator proposed by Callaway and Sant'Anna (2021) addresses this limitation by aggregating the effects based on regular difference-in-differences treatment effects for each individual group-time combination. For this purpose, the companies are segmented into groups according to their treatment period in order to estimate the average treatment effects for each treated group in each period. This allows me to make a comparison between the never treated/not yet treated companies and the treated companies at different points in time.

The time variable in my analysis is a running variable that starts with the value 1 in January 2019 and increases by 1 for each additional month that has passed since then. The first payments of the inflation compensation premium in my sample occurred in November 2022. All companies that made a payment in this month are therefore assigned to group 1, with the designation increasing for each subsequent month.[5] I assume that companies are considered to have been treated in the month following the first payment and will remain so thereafter. According to this logic, the time variable for the treatment period of these companies in group 1 represents the value 48 (the months from the start of my analysis in January 2019 are categorized in ascending order), which marks December 2022 and indicates the first month in which these companies are part of the treatment group. Companies that do not pay the inflation compensation premium are never treated and their time variable therefore always remains at a value of 0. The regression equation is as follows:

$$(1)\ ATT_{(g,t)} = E\left[\left(\frac{G_g}{E[G_g]} - \frac{\frac{p_{g,t}(1-D_t)(1-G_g)}{1-p_{g,t}}}{E\left[\frac{p_{g,t}(1-D_t)(1-G_g)}{1-p_{g,t}}\right]}\right)\left(Y_t - Y_{g-1} - m_{g,t}^{ny}\right)\right]$$

[5] The company Eventim represents an exception and actually marks the first payment of the inflation compensation premium in October 2022. However, there are no reviews on Kununu for this company in the period immediately prior to the treatment, which is required to estimate a group-specific average treatment effect. This company is therefore treated as group 0 and cannot be included in the subsequent analyses.

$ATT_{(g,t)}$ denotes the average treatment effect on the treated companies for group g at time t, with g representing the treatment period of companies in this group. $G_g$is an indicator variable that equals 1 if the observation occurs after the treatment period g (i.e., if the companies belong to group g), and 0 otherwise. D_t is an indicator equal to 1 if the unit (i.e., the companies of this group) has already been treated at time t and 0 if it is not yet treated or never treated. $p_{g,t}$ refers to the proportion of all not-yet-treated units at time t that belong to group g, so the relative share of group g (which will get treated at the treatment period g) within the group of units that are still untreated at time t. The expression $Y_t - Y_{g-1}$ captures the change in the outcome variable from one period before the treatment period to the current time t. $m_{g,t}^{ny}$ denotes the expected change in outcome for the not-yet-treated units (i.e., the control group), serving as a bias-correction term to adjust for systematic time-related differences in outcome development, ensuring that only the treatment effect is identified. The estimator first computes the outcome change before and after treatment and weighs the observations of the treated units by their group share $\frac{G_g}{E[G_g]}$ and the observations of the control units by their relative share of belonging to group g among those not yet treated at time t, which is $\frac{p_{g,t}(1-D_t)(1-G_g)}{1-p_{g,t}}$. This difference is then further adjusted by subtracting $m_{g,t}^{ny}$, the average outcome change observed in the control group (not-yet-treated), ensuring that the estimator removes systematic differences in unrelated trends between treatment and control units and isolates the causal treatment effect.

4.4 Results

4.4.1 Main analyses

Figure 8 illustrates the development of the average review score per company in my sample, normalized to point zero before and after treatment. The X-axis shows the relative temporal development in months, while the Y-axis displays the average monthly review score on a one-to-five-star scale. This normalization to point zero indicates that the first payout period of each company corresponds to period 0, period 1 thus represents the first period after payout for each company, while period -1 denotes the period immediately preceding the first payout month of each company. Therefore, for company group 1 period 0 is November 2022, period 1 corresponds to December 2022, and period -1 represents October 2022. Across my entire observation period, the figure shows a general upward trend in average ratings over time. Immediately before and after the standardized payout period, however, the descriptive

interpretation tends to show a rather steady trend.[6] In order to examine this initial descriptive impression in greater depth, a detailed statistical analysis of the data follows.

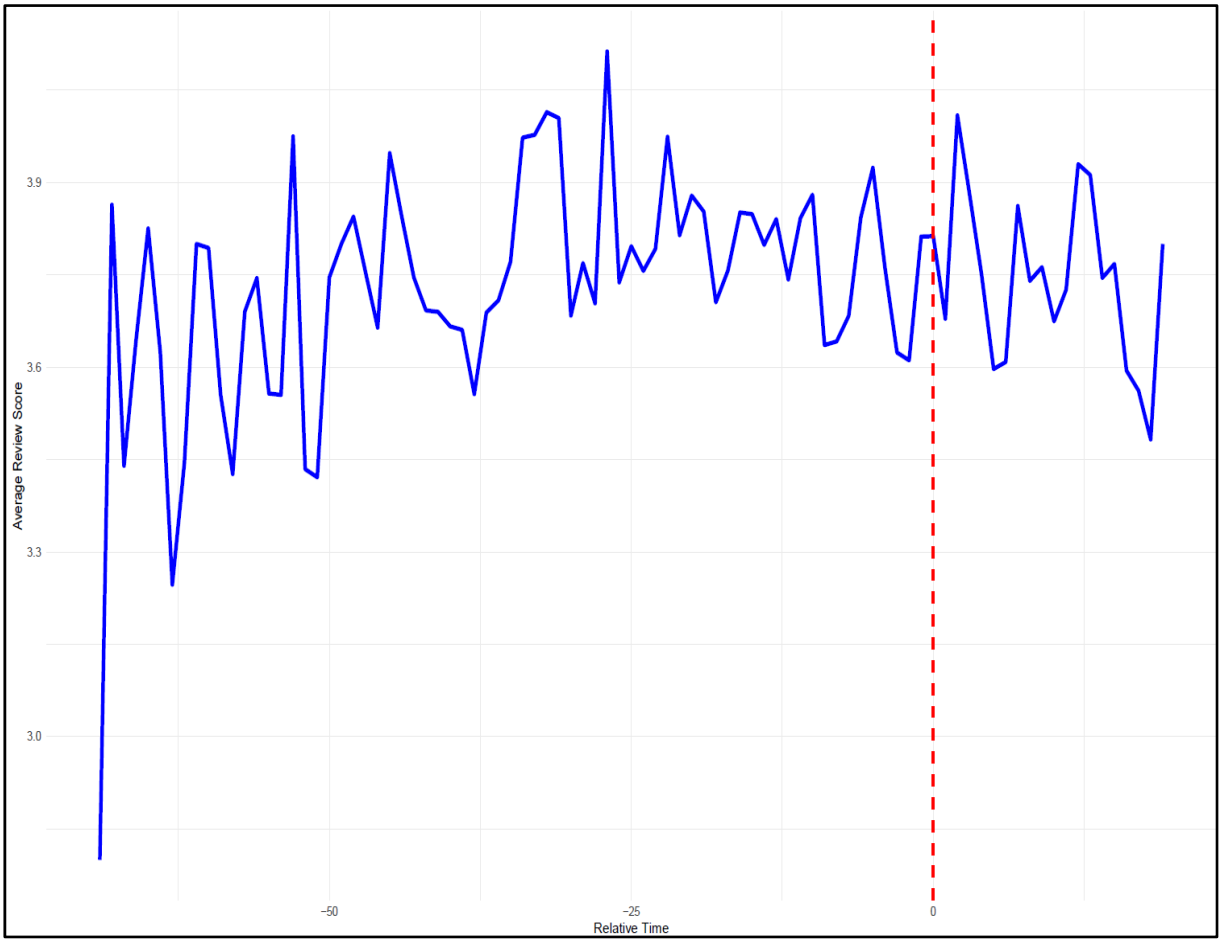

Figure 8: Average review score per company normalized to point zero before and after treatment

Table 12 presents the average treatment effect on the treated companies, which is the overall impact of the payment of the inflation compensation premium on companies' total Kununu score in my sample. Accordingly, the point estimate for the treatment is clearly different from zero and statistically significant. This means that, on average, the companies in my sample do experience a significant increase of about 0.23 stars in their respective overall score ratings on Kununu as a result of their payment of the inflation compensation premium compared to companies that do not do so. This provides evidence for my H1, indicating that employers paying the inflation compensation premium as voluntary one-off payment experience increased employee satisfaction, which in this case refers to more favorable employee ratings.

[6] The very first and last periods shown only include average ratings of a few companies, as reviews at both extremes of the timeline are only available for these companies with relatively late or early payouts. These numbers must therefore be interpreted with caution.

Table 12: Average treatment effect on the companies' overall score in the overall sample

				95 % confidence interval	
Average treatment effect	Standard error	t	p	Lower limit	Upper limit
0.2326**	0.1116	2.0846	0.0371	0.0139	0.4512

n = 48,967; *p < 0.10, **p < 0.05, ***p < 0.01

Contrary to H2, however, the analysis of the development of ratings over time does not reflect the expected pattern of an initial improvement followed by a gradual leveling off of the effect. As Table 13 shows, although there is a tendency for more significant positive effects in the first half of the observation period, these do not occur immediately after payment.

Table 13: Average treatment effect on the companies' overall score over time in the overall sample

					95 % confidence interval	
Period	Average treatment effect	Standard error	t	p	Lower limit	Upper limit
1	0.0675	0.1945	0.3472	0.7509	-0.5426	0.6776
2	0.1818	0.1256	1.4475	0.2414	-0.2122	0.5758
3	0.4157**	0.118	3.5243	0.0372	0.0457	0.7858
4	0.2744	0.2234	1.2286	0.3048	-0.4263	0.9752
5	0.2585	0.1765	1.4648	0.237	-0.2951	0.8120
6	0.3658*	0.1482	2.4683	0.088	-0.0991	0.8306
7	0.4101*	0.16	2.5638	0.0808	-0.0917	0.9120
8	0.1655	0.1899	0.8713	0.4462	-0.4303	0.7612
9	0.2404	0.1545	1.5555	0.2154	-0.2444	0.7251
10	0.3254	0.1629	1.9976	0.1373	-0.1856	0.8364
11	0.0723	0.1932	0.3739	0.7327	-0.5340	0.6785
12	0.3714	0.215	1.7278	0.1801	-0.3030	1.0459
13	0.3551	0.2497	1.4222	0.2479	-0.4282	1.1383
14	0.4599*	0.18	2.5546	0.0815	-0.1049	1.0247
15	0.1748	0.2678	0.6527	0.5594	-0.6654	1.0150
16	0.1354	0.2834	0.4779	0.6646	-0.7537	1.0245
17	0.4412	0.5357	0.8236	0.4692	-1.2394	2.1218
18	-0.242	1.0175	-0.2379	0.8269	-3.4341	2.9501

n = 48,967; *p < 0.10, **p < 0.05, ***p < 0.01

Instead, the effect size appears to first rather increase with time and then fluctuate without a consistent pattern. Period 1 here represents the change in ratings in the first month after payment of the inflation compensation premium, while period 18 indicates the change in ratings in the last month after payment in my data set. Only about one-fifth of the periods under consideration show a significant effect. Consequently, my analysis cannot confirm that the positive effect of the provision of one-off payments on employee satisfaction is strongest shortly after payment and then levels off over time.

4.4.2 Additional analyses

In order to analyze whether the observed effect is driven by the timing of the payment, I divide my sample into thirteen different subgroups according to this respective timing.[7] Group 1 consists of those companies that were the first to pay the premium in November 2022 and thus acted as pioneers. Group 13, on the other hand, comprises the company that made its first payment in April 2024 and therefore was the last to do so in my data set. Although the company Eventim formally belongs to group 0 based on the timing of its payout in October 2022, no observations are available for this company in the period immediately prior to the treatment (i.e., in period $g - 1$). As this pre-treatment data is required to estimate a group-specific average treatment effect, group 0 is excluded from the subsequent analyses.

As shown in Table 14, the group of companies that were among the first to voluntarily pay the inflation compensation premium in December 2022 experiences a significant improvement in its overall Kununu score. As a result of the payment of the premium, these companies in the second group receive average ratings that are around 0.84 stars higher than those of companies without a corresponding payment. This finding could therefore suggest a first-mover effect for these companies that were among the first to start paying the inflation compensation premium. The other significant result of this consideration appears for group 10, in which only one company paid the premium. Here, I also find a significant improvement in the ratings of the overall score, which could partly reflect company- or industry-specific dynamics rather than the treatment itself and should therefore be interpreted with caution.

Of particular interest in this context are also those groups that make the payment considerably later than most other DAX 40 and MDAX 50 companies. Over time, it can be observed that

[7] Since my data set only contains reviews from January 2019 to June 2024, the payment of the inflation compensation premium by three companies after this date cannot be taken into account. Due to this restriction, these companies are classified as never treated in the data set and their respective subgroups are not considered in this analysis.

companies with later payouts tend to receive even worse ratings than companies without payments at all. As a counterpart to the positive first mover effect, this could indicate a negative latecomer effect, although this relationship is not statistically significant. Apart from these two notable cases, the remaining group-specific breakdown does not provide any other discernible patterns or significant results.

Table 14: Group-specific average treatment effect on the companies' overall score in the overall sample

					95 % confidence interval	
Group	Estimate	Standard error	t	p	Lower limit	Upper limit
1	0.2017	0.8163	0.2471	0.8138	-1.8425	2.246
2	0.8391*	0.4061	2.0662	0.0888	-0.178	1.8562
3	0.1765	0.1321	1.3359	0.2344	-0.1544	0.5075
4	-0.1216	0.1177	-1.0329	0.3451	-0.4165	0.1733
5	0.2989	0.2647	1.1293	0.3058	-0.364	0.9618
6	0.1486	0.1872	0.794	0.4602	-0.3202	0.6175
7	0.1702	0.2049	0.8308	0.4408	-0.3429	0.6833
8	-0.5848	0.3516	-1.6633	0.152	-1.4653	0.2957
9	-0.2459	0.3002	-0.819	0.4469	-0.9976	0.5059
10	0.9313***	0.2142	4.3474	0.006	0.3948	1.4678
11	0.4278	0.2615	1.6359	0.1577	-0.2271	1.0828
12	-0.1971	0.2068	-0.953	0.3807	-0.7151	0.3209
13	-0.3147	0.2945	-1.0684	0.3302	-1.0523	0.423

n = 48,967; *p < 0.10, **p < 0.05, ***p < 0.01

The mentioned first mover effect for the second group also appears in the group-specific time trend. The second group has a significantly better overall score for numerous periods after payment of the inflation compensation premium compared to companies without a corresponding payment (see Table A 28 in the appendix: The first row here shows the effect of paying the premium for the second group in the first month after payment; the fifth row, for instance, shows the effect of paying the premium for the second group in the fifth month after payment.). Accordingly, first movers might receive positive ratings in the long term due to their pioneering role. However, the tenth group also shows a similar picture in the group-specific time trend: With their payment of the premium in August 2023, these companies still receive considerably more positive ratings in the subsequent periods (see Table A 29 in the appendix).

Therefore, these two group-specific analyses even provide a partial tendency for H2; Both in terms of effect size and significance, the positive effect tends to be strongest in the months shortly after payment and then rather decreases over time for both groups.

A similar pattern can be observed with regard to the four top categories career opportunities & compensation, corporate culture, working environment, and diversity. Table 15 shows that the average treatment effect on the treated companies is significantly positive for two of the four top categories: corporate culture and working environment. As a result of the payment of the inflation compensation premium, the companies therefore receive ratings that are about 0.2 stars higher in the category corporate culture and about 0.29 stars higher in the category working environment than those of companies without corresponding payment. In contrast, no significant average treatment effect can be observed for the other two categories career opportunities & compensation and diversity.

Table 15: Average treatment effect on the companies' top categories in the overall sample

					95 % confidence interval	
Top category	Average treatment effect	Standard error	t	p	Lower limit	Upper limit
Career opportunities & compensation	0.1454	0.1044	1.3924	0.1638	-0.0593	0.35
Corporate culture	0.2042*	0.1118	1.8268	0.0677	-0.0149	0.4233
Working environment	0.2898***	0.1013	2.8619	0.0042	0.0913	0.4882
Diversity	0.1651	0.117	1.4114	0.1581	-0.0642	0.3944

n = 48,967; *p < 0.10, **p < 0.05, ***p < 0.01

Looking at the 13 subcategories in Table 16 reveals a similar picture. The five subcategories *salary/social benefits*, *working atmosphere*, *work-life balance*, *working conditions*, and *environmental/social awareness* show significant effects, all of which are also positive. The effect size is fairly consistent in the range of approximately 0.23 to 0.33. Notably, the two subcategories *working atmosphere* and *work-life balance*, which partly form the top category corporate culture, show significantly positive effects consistent with their respective top category. Likewise, this finding is also reflected in the top category working environment, where both subcategories *working conditions* and *environmental/social awareness* show significant positive effects. In contrast, I cannot find a significant effect for the other subcategories *image*, *career/training*, *communication, colleague cohesion, supervisor behavior, interesting tasks, equal rights,* and *dealing with older colleagues*.

Table 16: Average treatment effect on the companies' subcategories in the overall sample

					95 % confidence interval	
Subcategory	Average treatment effect	Standard error	t	p	Lower limit	Upper limit
salary/social benefits	0.2601**	0.1086	2.3953	0.0166	0.0473	0.4729
image	0.1673	0.1157	1.4468	0.148	-0.0594	0.394
career/training	0.1074	0.149	0.7205	0.4712	-0.1847	0.3995
working atmosphere	0.2703**	0.1371	1.9711	0.0487	0.0015	0.5391
communication	0.1441	0.1543	0.9337	0.3505	-0.1584	0.4465
colleague cohesion	0.1745	0.111	1.5715	0.1161	-0.0431	0.3922
work-life balance	0.2339**	0.0977	2.3945	0.0166	0.0424	0.4253
supervisor behavior	0.2745	0.1673	1.6404	0.1009	-0.0535	0.6024
interesting tasks	0.1321	0.1284	1.0292	0.3034	-0.1195	0.3837
working conditions	0.325***	0.111	2.9291	0.0034	0.1075	0.5425
environmental/social awareness	0.2619**	0.1099	2.3834	0.0172	0.0465	0.4772
equal rights	0.1446	0.1259	1.1486	0.2507	-0.1022	0.3914
dealing with older colleagues	0.165	0.1135	1.4539	0.146	-0.0574	0.3875
employer recommendation to a friend	-0.0112	0.0244	-0.4581	0.6469	-0.0591	0.0367

n = 48,967; *p < 0.10, **p < 0.05, ***p < 0.01

In addition to the overall score, the four top categories, and the 13 subcategories, the ratings on Kununu also comprise the category *employer recommendation to a friend*. As users do not provide a score on a scale of one to five stars for this category, but only indicate dichotomously whether their employer is recommended or not, I coded this aspect as 1 for *yes* and 0 for *no*. For this recommendation rate, I then look at the average monthly ratings and their respective differences between the treatment and control group. To this end, the data is grouped by month and company, and the percentage of positive employment recommendations is calculated within each group. This approach is necessary as the binary nature of the variable (being true or false) limits the information available from the data. Consequently, this procedure reduces the number of observations, since rather than retaining each individual recommendation, multiple recommendations are combined into a single average monthly rate per company. As Table 16 shows, the average treatment effect for the category *employer recommendation to a*

friend is not statistically significant. See Table A 30 in the appendix for the group-specific average treatment effect on the companies' category *recommendation to a friend* in the overall sample.

Alongside looking at the changes in ratings across the various categories on Kununu, the number of submitted ratings is also an indicator that can be associated with the payment of the inflation compensation premium. Descriptively, the companies in the control group received an average of 2,342 reviews in the three months prior to the payment, whereas those companies in the treatment group received an average of 2,669 reviews in the three months following the payment. This corresponds to a 12.3 percent increase in the number of ratings for treated companies in my sample over this three-month period. However, as this comparison contrasts different groups and time periods, the observed difference should be interpreted as a descriptive association rather than as evidence of a causal effect of the inflation compensation premium.

4.5 Discussion and conclusion

In line with the *resource-based view*, the acquisition and long-term retention of high-performing employees is one of the most important resources for a company's success (e.g., Barney, 1991; Barney et al., 2011; Grant, 1996). Accordingly, the ever-growing problems of skilled labor shortages and employee turnover have become some of the greatest challenges for long-term corporate viability. In addition, the relationship between employers and employees is constantly changing; employees are aware of their value and have increasingly high expectations toward companies. As a consequence, companies pursue various measures – both monetary and non-monetary – to increase employer attractiveness and employee satisfaction. This particularly relates to employers relieving the burden on employees in the context of increasingly frequent crisis situations.

With regard to monetary measures, besides the regular salary, one-off payments also come into play here, as higher financial remuneration has a positive effect on perceived employer attractiveness (e.g., Chhabra & Sharma, 2014; Dögl & Holtbrügge, 2014). One particular variant of these one-off payments is the inflation compensation premium, which was part of the German Federal Government's political relief package aimed at cushioning the impact of the European energy crisis. The special status of the inflation compensation premium stems from the fact that it was a Federal Government initiative that allowed employers to voluntarily grant

their employees up to €3,000 free of tax and duties between October 2022 and December 2024 (The Federal Government, 2022).

In order to assess the impact and underlying factors of such employee satisfaction measures, employer review platforms like Kununu.com are becoming increasingly relevant as a new data source. Crowd-based data from the employee perspective is characterized by typically non-public information that contains value-relevant insights into company performance. In this context, I use archival data analysis to investigate the effects of the payment of the German inflation compensation premium, as a cyclical one-off-payment, on Kununu ratings of the DAX 40 and MDAX 50 companies in Germany. I consider effects on the overall score of companies as well as on four top categories, their 13 underlying subcategories, and the employer recommendation rate.

The payment of the inflation compensation premium presumably influences the evaluation of the 13 subcategories on Kununu to varying degrees. At first glance, one would certainly assume that the effect of the inflation compensation premium is most strongly reflected in the top category career opportunities & compensation, and specifically in the subcategory *salary/social benefits*. As the payment is voluntary, one would also expect a positive effect on the subcategory *image*, while *career/training* should be less affected. Within the top category corporate culture, *working atmosphere* can be assumed to be positively influenced by the premium, as typically all employees of a company received the inflation compensation premium equally, in contrast to performance- and position-related remuneration, which in turn can also strengthen *colleague cohesion*. *Supervisor behavior* could be positively influenced if employees attribute their gratitude toward the premium (at least indirectly) to their respective supervisors, even if the payment decision is made at the company level. In contrast, the evaluation of *interesting tasks*, *communication*, and *work-life balance* should not be severely affected. In the top category working environment, both *working conditions* and *environmental/social awareness* could be positively impacted by the payment of the inflation compensation premium. In the top category diversity, an effect on the subcategory *equal rights* can be assumed, following a similar line of reasoning as for the mentioned expected effect on *working atmosphere* and *colleague cohesion*. The evaluation of *dealing with older colleagues*, on the other hand, should not be influenced by the payment of the premium. Analogous to the expected effect on the *image* of the company, the *employer recommendation to a friend* should also be positively influenced by the payment. Since the overall score on Kununu is calculated

as the average of the 13 subcategories, the payment of the inflation compensation premium is also expected to have a positive effect on this overall score of the respective companies.

As predicted in H1, I find that employers paying the inflation compensation premium benefit from significantly better employee ratings on Kununu than companies without such a payment, reflecting higher levels of employee satisfaction and appreciation. These payment-related improvements in ratings are found both in the overall score of the companies and in the top categories corporate culture and working environment, as well as in the subcategories *salary/social benefits*, *working atmosphere*, *work-life balance*, *working conditions*, and *environmental/social awareness*. On average, companies in my sample that pay the premium benefit from an improvement in the overall score of around 0.23 stars compared to companies that do not. Contrary to H2, however, I do not find evidence that this positive effect of one-off payments on employee satisfaction is strongest shortly after payment and then levels off over time. Instead, it rather appears that employees first take some time to process the payment of the inflation compensation premium and translate it into improved ratings at a slightly later point.

The group-specific analyses additionally show a tendency toward a long-term first-mover effect, whereby one group of companies that has taken on a pioneering role through early premium payment experiences a significant improvement in its overall score on Kununu. In contrast, companies that pay their premium significantly later, and are therefore latecomers within the sample, tend to receive more negative ratings despite their discretionary payment compared to companies without payouts. Consequently, the results suggest that these companies may experience a negative latecomer effect. However, these increasingly negative effects in groups with later payout dates are not statistically significant. The first movers in my sample, though, benefit from higher levels of appreciation, as employees credit their employers for committing early and voluntarily to paying the inflation compensation premium. Among companies with later payouts, this effect appears weaker, as employees may no longer perceive the payment as special and may even expect it from their employers. Comprehensive media reports might contribute to triggering and reinforcing these expectations.

These results are in line with previous findings in the literature. I confirm existing studies showing that monetary compensation, as part of the inducements and investments a company offers its employees (cf. Tsui et al., 1997), has a positive effect on perceived employer attractiveness (e.g., Bénabou & Tirole, 2006; Dögl & Holtbrügge, 2014; Gneezy et al., 2011). My study thus echoes the findings of Mayew and Zhang (2024), who conclude that companies

that take care of employees during crises subsequently benefit from improved satisfaction. The payment of the inflation compensation premium thus operates as a signal of organizational characteristics in line with *signaling theory* and *relational contracting*. It gives employees and job seekers an impression of the company's values and thereby influences their perception of working conditions, which in turn affects their perception of employer attractiveness (e.g., Chatman, 1989; Ehrhart & Ziegert, 2005; Srivastava & Lurie, 2001). With the exception of a group of first movers and one additional group, which also benefit from significantly better ratings in the periods following the payment of the premium, these effects are not consistent in the long term. Consequently, one-off payments such as the inflation compensation premium bear the risk that, although monetary incentives are generally successful in the short term, their effects might not persist once they are removed, as argued by Bareket-Bojmel et al. (2017) and Marinescu et al. (2021).

Nevertheless, employers can still benefit from these short-term positive effects. For instance, jobseekers browsing employer review platforms may notice temporarily improved ratings or infer from the voluntary one-off payment the general appreciation these employers express toward their employees. As Choi et al. (2023a) emphasize, jobseekers are more likely to apply to companies that can demonstrate positive performance, which can be signaled by voluntary one-off payments. Furthermore, similar to Marinescu et al. (2021), I also find that monetary incentives can generally increase the provision of online reviews. Yet, one way to maintain this effect of employee satisfaction in the long term might be to increasingly complement monetary incentives with prosocial incentives, which aligns with the shifting requirements of employees (cf. Bénabou & Tirole, 2006; Campbell, 2008; Graham et al., 2022; Hope et al., 2021; Presslee et al., 2023).

With regard to the effect of the payment of the premium on the individual categories, some results match expectations, while others diverge. As expected, the one-off payment is reflected in the subcategory *salary/social benefits*, however, not in the respective top category career opportunities & compensation, for which I do not find a significant overall effect. Accordingly, the two other subcategories *career/training* and *image* are also not significantly affected, even though one might have assumed the latter to benefit from the voluntary payment of the premium as part of an improved external image. For the same reason, a positive effect on the category *employer recommendation to a friend* would also have been plausible, however, no significant effect emerges here either. According to Collins (2007), the prestige of a company is decisive for the long-term retention of employees. Despite the significant positive effects on the overall

score and several subcategories, a non-recurring one-off payment from the employer may therefore not be sufficient for employees to overlook other long-term aspects and recommend their employer to friends.

Instead, as expected, a significant positive effect of the one-off payment is found in the top category working environment and the two associated subcategories *working conditions* and *environmental/social awareness*. The importance of strong social performance as a distinguishing criterion is also confirmed by Greening and Turban (2000), Jones et al. (2014), as well as Mitchell et al. (2001). The benefit of pro-social managers in terms of employee retention in turn is highlighted by Barnes and Cheng (2023), Feng et al. (2024), and Schuhmacher et al. (2022).

Furthermore, and again as expected, the top category corporate culture benefits from a significant positive effect of the payment. This is consistent with the study by Graham et al. (2022), which identifies corporate culture as an essential factor in employee satisfaction. My findings are evident not only in the subcategory *working atmosphere* (though not in the related category *colleague cohesion*) but also, unexpectedly, in *work-life balance*. The increasing importance of work-life balance as a key factor for employee motivation and performance, and thus also for satisfaction – particularly among young employees – is confirmed by Baudot et al. (2022) and Hope et al. (2021). The effect on *supervisor behavior* is insignificant (suggesting that employees do not attribute gratitude toward the payment of the premium directly to their respective supervisors, as the decision is company-wide), as are the effects on the other subcategories *communication*, *colleague cohesion*, and *interesting tasks*.

Finally, no significant effect is observed in the top category diversity and its two subcategories *equal rights* and *dealing with older colleagues*, even though this could have been expected for the former due to the uniform, performance- and position-independent nature of the inflation compensation premium.

Previous research on employer review platforms shows a partly similar picture. For instance, Green et al. (2019) show a significant relationship between changes in employee satisfaction and stock returns, which is reflected in categories such as *senior management* and *culture & values*, but not in *work-life balance*. In contrast, Dabirian et al. (2017) use employer ratings to identify not only *work-life balance* but also social and management-related dimensions as decisive value propositions for employer branding. Similarly, the working environment category on these platforms also plays an important role in shaping financial reporting risk (cf. Ji et al., 2022). While Lee et al. (2021) find that employee perceptions of managers and

companies on Glassdoor decrease following news about tax avoidance, my study shows that the perception of companies on Kununu in general is positively influenced as a result of the payment of the inflation compensation premium, whereas perceived *supervisor behavior* experiences no significant change.

All in all, the payment of the inflation compensation premium in my sample thus leads to improved employer ratings. In order to maintain this effect in the long term, companies should demonstrate their appreciation for their employees by making one-off payments at an early stage and out of their own conviction, thereby positioning themselves as pioneers. Conversely, companies that merely follow established norms might not receive equivalent appreciation from their employees – or, in the case of persistent refusal, this originally positive effect could even turn negative despite eventual payment. Extensive media reports can trigger and reinforce such expectations among employees. For instance, both the sporting goods manufacturer Adidas and the energy group E.ON attracted negative publicity due to their persistent refusal to pay the inflation compensation premium. After massive criticism, Adidas relented shortly before a possible warning strike (IGBCE, 2023b), while E.ON only agreed to pay the inflation compensation premium after its employees had carried out such a warning strike (IGBCE, 2023a). It is therefore not surprising that my group-specific analysis indicates that both groups of these companies received more negative reviews on Kununu as a result of their eventual payment of the inflation compensation premium, albeit this effect is not statistically significant. Overall, there is a tendency for employees to punish employers when their behavior is not intrinsic and genuine.

As a consequence, one-off payments like the inflation compensation premium, as monetary incentives, carry the risk that they can be generally effective in the short term but may lose their impact when discontinued. Nonetheless, specifically employer review platforms have the particularity that even temporarily improved reviews provide lasting added value, as they are permanently retained on the platforms. Additionally, there is a risk that employees will take such measures for granted and expect them, especially if they learn from the media that other employers are also implementing them. When evaluating this appreciation and the extent of generosity, the employees' own base salary level may also be a factor (cf. Isselhard et al., 2026). This might be particularly pronounced when a company is merely a latecomer rather than a proactive leader. One possible solution would be to supplement such monetary remuneration with non-monetary incentives, which are increasingly demanded by the workforce, thereby

creating a comprehensive, long-term package of measures for employee satisfaction and employer attractiveness.

Despite these contributions, my study is subject to several limitations. First, my analyses only focus on quantitative evaluations on Kununu and do not consider qualitative comments in the open-response text fields, as I do not have access to this data. I therefore cannot ensure that the employees have explicitly considered the payment of the inflation compensation premium in their rating or whether they even appreciate it or simply expect it, even though it is voluntary. However, prior research shows that textual responses in online reviews correspond in their valence to the quantitative ratings (e.g., Khern-am-nuai et al., 2018). As a further limitation, it cannot be ruled out that there is some degree of selection bias in such user-generated data (cf. Liu et al., 2017; Marinescu et al., 2021). In addition, there is potential for measurement errors arising from the incomplete coverage of rating categories across reviews on Kununu. Since not all user reviews include evaluations for all available categories, the average overall scores for companies may not represent comprehensive assessments across all measured dimensions, potentially introducing systematic bias in the comparison between treatment and control groups. Nevertheless, existing studies underline the validity of the information provided by ratings on employer review platforms (cf. de Haan et al., 2023; Dube & Zhu, 2021; Green et al., 2019; Huang et al., 2020; Landers et al., 2019; Teoh, 2018). In addition, Kununu's quality management features and policies are designed to ensure that reviews on their platform are authentic and credible (cf. Kununu, 2025).

Another limitation is that some companies have not provided official information on their handling of the inflation compensation premium. For these companies, I do not have first-hand information, which is why I have to rely on corresponding statements from third-party sources (e.g., using trade union collective agreements) to be accurate. Furthermore, my study focuses solely on German companies and considers the specific context of the German inflation compensation premium as one-off payment, which limits the generalizability of the findings. Future research in different organizational and societal contexts could therefore make the results more widely applicable. Finally, since I have to use monthly averages instead of individual ratings for the *employer recommendation to a friend* category, the validity of this measure is reduced, and interpretations of this category should be treated separately and with caution.

In conclusion, my study complements and extends existing management accounting and control literature using crowd-based data and provides important insights into drivers of employer attractiveness and employee satisfaction. To this end, it is useful to look at ratings on employer

review platforms, which reflect unfiltered, typically non-public, and value-relevant employee perspectives. In the specific case of the inflation compensation premium, these reviews are even indirectly suitable for assessing the effects of a cyclical measure by the Federal Government. In this way, I make an important contribution to understanding these processes and provide insights behind the otherwise closed doors of companies, which future research can build on.

Ultimately, my study reminds us that employer appreciation is no longer a static promise but a dynamic expectation: One that employees are quick to recognize, reward, or reject. The inflation compensation premium, while temporary in nature, illustrates how even short-term actions can leave lasting impressions in the digital age of transparency. In an environment where employee voices shape corporate reputations in real time, companies must act with foresight, not merely follow. Those who lead with sincerity – early, voluntarily, and beyond mere compliance – stand to gain enduring attractiveness. As expectations rise, so too must the commitment to authentic, sustained employee value. The future of employer success, it seems, lies not in ticking boxes but in setting meaningful standards: A one-off payment may fade, but the message it sends can echo long after the money is spent.

References

Abernethy, M. A., Dekker, H. C., Schulz, A. K.-D. (2015). Are Employee Selection and Incentive Contracts Complements or Substitutes? *Journal of Accounting Research*, *53*(4), 633-668. https://doi.org/10.1111/1475-679X.12090

Adhvaryu, A., Kala, N., & Nyshadham, A. (2022). Management and Shocks to Worker Productivity. *Journal of Political Economy*, *130*(1), 1-47. https://doi.org/10.1086/717046

Ahn, J., Hoitash, R., Hoitash, U., & Krause, E. (2025). Diversity and Career Trajectories: Evidence from LinkedIn Data on Race, Ethnicity, and Gender in Auditing. *The Accounting Review*, 1-31. https://doi.org/10.2308/TAR-2023-0334

Akerlof, G. A. (1982). Labor Contracts as Partial Gift Exchange. *The Quarterly Journal of Economics*, *97*(4), 543. https://doi.org/10.2307/1885099

Akerlof, G. A., & Kranton, R. E. (2005). Identity and the Economics of Organizations. *Journal of Economic Perspectives*, *19*(1), 9-32. https://doi.org/10.1257/0895330053147930

Alekseev, G., Amer, S., Gopal, M., Kuchler, T., Schneider, J. W., Stroebel, J., & Wernerfelt, N. (2023). The Effects of COVID-19 on U.S. Small Businesses: Evidence from Owners, Managers, and Employees. *Management Science*, *69*(1), 7-24. https://doi.org/10.1287/mnsc.2022.4327

Allen, D. G., Bryant, P. C., & Vardaman, J. M. (2010). Retaining Talent: Replacing Misconceptions With Evidence-Based Strategies. *Academy of Management Perspectives*, *24*(2), 48-64. https://doi.org/10.5465/amp.24.2.48

Ang, J. S., Hsu, C., Di Tang, & Wu, C. (2021). The Role of Social Media in Corporate Governance. *The Accounting Review*, *96*(2), 1-32. https://doi.org/10.2308/TAR-2018-0144

Autrey, R. L., Bauer, T. D., Jackson, K. E., & Klevsky, E. (2019). Deploying "connectors": A control to manage employee turnover intentions? *Accounting, Organizations and Society*, *79*, 101059. https://doi.org/10.1016/j.aos.2019.101059

Baker, G., Gibbons, R., & Murphy, K. J. (2002). Relational Contracts and the Theory of the Firm. *The Quarterly Journal of Economics*, *117*(1), 39-84. https://doi.org/10.1162/003355302753399445

Bareket-Bojmel, L., Hochman, G., & Ariely, D. (2017). It's (Not) All About the Jacksons. *Journal of Management*, *43*(2), 534-554. https://doi.org/10.1177/0149206314535441

Barnes, S., & Cheng, Y. (2023). Employee approval of CEOs and firm value: Evidence from Employees' choice awards. *Journal of Corporate Finance*, *78*, 102341. https://doi.org/10.1016/j.jcorpfin.2022.102341

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99-120. https://doi.org/10.1177/014920639101700108

Barney, J. B., Ketchen, D. J., & Wright, M. (2011). The Future of Resource-Based Theory. *Journal of Management*, *37*(5), 1299-1315. https://doi.org/10.1177/0149206310391805

Bartov, E., Faurel, L., & Mohanram, P. S. (2018). Can Twitter Help Predict Firm-Level Earnings and Stock Returns? *The Accounting Review*, *93*(3), 25-57. https://doi.org/10.2308/accr-51865

Baudot, L., Kelly, K., & McCullough, A. (2022). Contemporary Conflicts in Perspectives on Work Hours across Hierarchical Levels in Public Accounting. *The Accounting Review*, *97*(6), 67-89. https://doi.org/10.2308/TAR-2020-0106

Bedford, D. S., Speklé, R. F., & Widener, S. K. (2022). Budgeting and employee stress in times of crisis: Evidence from the Covid-19 pandemic. *Accounting, Organizations and Society*, *101*, 101346. https://doi.org/10.1016/j.aos.2022.101346

Belo, F., Li, J., Lin, X., & Zhao, X. (2017). Labor-Force Heterogeneity and Asset Prices: The Importance of Skilled Labor. *Review of Financial Studies*, *30*(10), 3669-3709. https://doi.org/10.1093/rfs/hhx070

Bénabou, R., & Tirole, J. (2006). Incentives and Prosocial Behavior. *American Economic Review*, *96*(5), 1652-1678. https://doi.org/10.1257/aer.96.5.1652

Berger, J. (2011). Arousal increases social transmission of information. *Psychological Science*, *22*(7), 891-893. https://doi.org/10.1177/0956797611413294

Bidwell, M. (2011). Paying More to Get Less. *Administrative Science Quarterly*, *56*(3), 369-407. https://doi.org/10.1177/0001839211433562

Bischof, J., Doerrenberg, P., Rostam-Afschar, D., Simons, D., & Voget, J. (2024). The German Business Panel: Firm-Level Data for Accounting and Taxation Research. *European Accounting Review*, 1-29. https://doi.org/10.1080/09638180.2024.2403467

Blader, S., Gartenberg, C., & Prat, A. (2019). The Contingent Effect of Management Practices. *The Review of Economic Studies*, *87*(2). Advance online publication. https://doi.org/10.1093/restud/rdz034

BLS (2024a). *Employment Cost Index – June 2024*. Retrieved August 19, 2024, from https://www.bls.gov/news.release/pdf/eci.pdf

BLS (2024b). *Job Openings and Labor Turnover – June 2024*. Retrieved August 19, 2024, from https://www.bls.gov/news.release/pdf/jolts.pdf

Board, S. (2011). Relational Contracts and the Value of Loyalty. *American Economic Review*, *101*(7), 3349-3367. https://doi.org/10.1257/aer.101.7.3349

Bohmann, S., Fiedler, S., Kasy, M., Schupp, J., & Schwerter, F. (2021). Pre-anlysis plan: Experimental evaluation of a Basic Income Pilot in Germany. *Working Paper*.

Bolton, G. E., & Ockenfels, A. (2000). ERC: A Theory of Equity, Reciprocity, and Competition. *American Economic Review*, *90*(1), 166-193. https://doi.org/10.1257/aer.90.1.166

Bondareva, M., & Pinker, E. (2019). Dynamic Relational Contracts for Quality Enforcement in Supply Chains. *Management Science*, *65*(3), 1305-1321. https://doi.org/10.1287/mnsc.2017.2990

Brown, J., & Matsa, D. A. (2016). Boarding a Sinking Ship? An Investigation of Job Applications to Distressed Firms. *The Journal of Finance*, *71*(2), 507-550. https://doi.org/10.1111/jofi.12367

Brown, M., Falk, A., & Fehr, E. (2004). Relational Contracts and the Nature of Market Interactions. *Econometrica*, *72*(3), 747-780. https://doi.org/10.1111/j.1468-0262.2004.00511.x

Cai, W. (2023). Formalizing the Informal: Adopting a Formal Culture-Fit Measurement System in the Employee-Selection Process. *The Accounting Review*, *98*(3), 47-70. https://doi.org/10.2308/TAR-2020-0753

Callaway, B., & Sant'Anna, P. H. (2021). Difference-in-Differences with multiple time periods. *Journal of Econometrics*, *225*(2), 200-230. https://doi.org/10.1016/j.jeconom.2020.12.001

Campbell, D. (2008). Nonfinancial Performance Measures and Promotion-Based Incentives. *Journal of Accounting Research*, *46*(2), 297-332. https://doi.org/10.1111/j.1475-679X.2008.00275.x

Campbell, D. (2012). Employee Selection as a Control System. *Journal of Accounting Research*, *50*(4), 931-966. https://doi.org/10.1111/j.1475-679X.2012.00457.x

Campbell, D. W., & Shang, R. (2022). Tone at the Bottom: Measuring Corporate Misconduct Risk from the Text of Employee Reviews. *Management Science*, *68*(9), 7034-7053. https://doi.org/10.1287/mnsc.2021.4211

Campbell, J. L., DeAngelis, M. D., & Moon, J. R. (2019). Skin in the game: personal stock holdings and investors' response to stock analysis on social media. *Review of Accounting Studies*, *24*(3), 731-779. https://doi.org/10.1007/s11142-019-09498-9

Campello, M., Kankanhalli, G., & Muthukrishnan, P. (2023). Corporate Hiring Under COVID-19: Financial Constraints and the Nature of New Jobs. *Journal of Financial and Quantitative Analysis*, 1-45. https://doi.org/10.1017/s0022109023000522

Carter, M. E., & Lynch, L. J. (2004). The effect of stock option repricing on employee turnover. *Journal of Accounting and Economics*, *37*(1), 91-112. https://doi.org/10.1016/j.jacceco.2003.06.002

Carter, M. E., Lynch, L. J., & Peng, X. (2024). COVID-19-Motivated Changes to Executive Compensation. *Journal of Management Accounting Research*, *36*(3), 115-133. https://doi.org/10.2308/JMAR-2023-036

Chatman, J. A. (1989). Improving Interactional Organizational Research: A Model of Person-Organization Fit. *The Academy of Management Review*, *14*(3), 333-349. https://doi.org/10.2307/258171

Chen, C. X. (2009). Who Really Matters? Revenue Implications of Stakeholder Satisfaction in a Health Insurance Company. *The Accounting Review*, *84*(6), 1781-1804. https://doi.org/10.2308/accr.2009.84.6.1781

Cheng, M. M., Wu, S., & Di Yang (2024). Keeping Up with the Joneses during an Economic Crisis: The Effect of Different Types of Pay Cuts on Employee Performance. *Journal of Management Accounting Research*, *36*(3), 135-152. https://doi.org/10.2308/JMAR-2023-039

Chhabra, N. L., & Sharma, S. (2014). Employer branding: strategy for improving employer attractiveness. *International Journal of Organizational Analysis*, *22*(1), 48-60. https://doi.org/10.1108/IJOA-09-2011-0513

Choi, B.-G., Choi, J. H., & Malik, S. (2023a). Not Just for Investors: The Role of Earnings Announcements in Guiding Job Seekers. *Journal of Accounting and Economics*, 101588. https://doi.org/10.1016/j.jacceco.2023.101588

Choi, J. H. O., Pacelli, J., Rennekamp, K. M., & Tomar, S. (2023b). Do Jobseekers Value Diversity Information? Evidence from a Field Experiment and Human Capital Disclosures. *Journal of Accounting Research*, *61*(3), 695-735. https://doi.org/10.1111/1475-679X.12474

Chung, D. J., & Narayandas, D. (2017). Incentives versus Reciprocity: Insights from a Field Experiment. *Journal of Marketing Research*, *54*(4), 511-524. https://doi.org/10.1509/jmr.15.0174

Collins, C. J. (2007). The interactive effects of recruitment practices and product awareness on job seekers' employer knowledge and application behaviors. *The Journal of Applied Psychology*, *92*(1), 180-190. https://doi.org/10.1037/0021-9010.92.1.180

Condie, E. R., Lisic, L. L., Seidel, T. A., Truelson, J. M., & Zimmerman, A. B. (2023). Does gender and ethnic diversity among audit partners influence office-level audit personnel retention and audit quality? *Contemporary Accounting Research*, *40*(4), 2477-2511. https://doi.org/10.1111/1911-3846.12882

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, *37*(1), 39-67. https://doi.org/10.1177/0149206310388419

Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen, D. J. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *The Journal of Applied Psychology*, *96*(3), 443-456. https://doi.org/10.1037/a0022147

Crowley, R. M., Huang, W., & Lu, H. (2024). Discretionary dissemination on Twitter. *Contemporary Accounting Research*, *41*(4), 2454-2487. https://doi.org/10.1111/1911-3846.12986

Da, Z., & Huang, X. (2020). Harnessing the Wisdom of Crowds. *Management Science*, *66*(5), 1847-1867. https://doi.org/10.1287/mnsc.2019.3294

Dabirian, A., Kietzmann, J., & Diba, H. (2017). A great place to work!? Understanding crowdsourced employer branding. *Business Horizons*, *60*(2), 197-205. https://doi.org/10.1016/j.bushor.2016.11.005

de Haan, E., Li, N., & Zhou, F. S. (2023). Financial Reporting and Employee Job Search. *Journal of Accounting Research*, *61*(2), 571-617. https://doi.org/10.1111/1475-679X.12469

Delery, J. E., & Roumpi, D. (2017). Strategic human resource management, human capital and competitive advantage: is the field going in circles? *Human Resource Management Journal*, *27*(1), 1-21. https://doi.org/10.1111/1748-8583.12137

Dögl, C., & Holtbrügge, D. (2014). Corporate environmental responsibility, employer reputation and employee commitment: an empirical study in developed and emerging economies. *The International Journal of Human Resource Management*, *25*(12), 1739-1762. https://doi.org/10.1080/09585192.2013.859164

Drake, M. S., Moon, J. R., Twedt, B. J., & Warren, J. D. (2023). Social media analysts and sell-side analyst research. *Review of Accounting Studies*, *28*(2), 385-420. https://doi.org/10.1007/s11142-021-09645-1

Drake, M. S., Thornock, J. R., & Twedt, B. J. (2017). The internet as an information intermediary. *Review of Accounting Studies*, *22*(2), 543-576. https://doi.org/10.1007/s11142-017-9395-1

Dube, S., & Zhu, C. (2021). The Disciplinary Effect of Social Media: Evidence from Firms' Responses to Glassdoor Reviews. *Journal of Accounting Research*, *59*(5), 1783-1825. https://doi.org/10.1111/1475-679X.12393

Dufwenberg, M., & Kirchsteiger, G. (2004). A theory of sequential reciprocity. *Games and Economic Behavior*, *47*(2), 268-298. https://doi.org/10.1016/j.geb.2003.06.003

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, *101*(3), 621-640. https://doi.org/10.1016/j.jfineco.2011.03.021

Ehrhart, K. H., & Ziegert, J. C. (2005). Why Are Individuals Attracted to Organizations? *Journal of Management*, *31*(6), 901-919. https://doi.org/10.1177/0149206305279759

Esteves-Sorenson, C. (2018). Gift Exchange in the Workplace: Addressing the Conflicting Evidence with a Careful Test. *Management Science*, *64*(9), 4365-4388. https://doi.org/10.1287/mnsc.2017.2801

Falk, A., & Fischbacher, U. (2006). A theory of reciprocity. *Games and Economic Behavior*, *54*(2), 293-315. https://doi.org/10.1016/j.geb.2005.03.001

Fauver, L., McDonald, M. B., & Taboada, A. G. (2018). Does it pay to treat employees well? International evidence on the value of employee-friendly culture. *Journal of Corporate Finance*, *50*, 84-108. https://doi.org/10.1016/j.jcorpfin.2018.02.003

The Federal Government (2022). *Inflationsausgleichsprämie: Bis zu 3.000 Euro steuerfrei*. Retrieved March 8, 2025, from https://www.bundesregierung.de/breg-de/themen/entlastung-fuer-deutschland/inflationsausgleichspraemie-2130190

Feng, M., Ge, W., Ling, Z., & Loh, W. T. (2024). Prosocial CEOs, corporate policies, and firm value. *Review of Accounting Studies*, *29*(2), 1854-1903. https://doi.org/10.1007/s11142-023-09761-0

Fritsch, F. (2022). Listening to Twitter: Helpful for Managerial Forecasting? *Working Paper, University of Mannheim*.

Gao, J., Merkley, K. J., Pacelli, J., & Schroeder, J. H. (2023). Do Internal Control Weaknesses Affect Firms' Demand for Accounting Skills? Evidence from U.S. Job Postings. *The Accounting Review*, 1-26. https://doi.org/10.2308/TAR-2020-0109

Garel, A., & Petit-Romec, A. (2021). Engaging Employees for the Long Run: Long-Term Investors and Employee-Related CSR. *Journal of Business Ethics*, *174*(1), 35-63. https://doi.org/10.1007/s10551-020-04572-8

Gibbons, R., & Henderson, R. (2012). Relational Contracts and Organizational Capabilities. *Organization Science*, *23*(5), 1350-1364. https://doi.org/10.1287/orsc.1110.0715

Gilchrist, D. S., Luca, M., & Malhotra, D. (2016). When 3 + 1 > 4: Gift Structure and Reciprocity in the Field. *Management Science*, *62*(9), 2639-2650. https://doi.org/10.1287/mnsc.2015.2275

Gneezy, U., & List, J. A. (2006). Putting Behavioral Economics to Work: Testing for Gift Exchange in Labor Markets Using Field Experiments. *Econometrica*, *74*(5), 1365-1384. https://doi.org/10.1111/j.1468-0262.2006.00707.x

Gneezy, U., Meier, S., & Rey-Biel, P. (2011). When and Why Incentives (Don't) Work to Modify Behavior. *Journal of Economic Perspectives*, *25*(4), 191-210. https://doi.org/10.1257/jep.25.4.191

Golden, J., Mashruwala, R., & Pevzner, M. (2020). Labor adjustment costs and asymmetric cost behavior: An extension. *Management Accounting Research*, *46*, 100647. https://doi.org/10.1016/j.mar.2019.07.004

Gomez, E. A., Heflin, F., Moon, J. R., & Warren, J. D. (2024). Financial Analysis on Social Media and Disclosure Processing Costs: Evidence from Seeking Alpha. *The Accounting Review*, 1-24. https://doi.org/10.2308/TAR-2018-0659

Gómez-Carrasco, P., Guillamón-Saorín, E., & García Osma, B. (2021). Stakeholders versus Firm Communication in Social Media: The Case of Twitter and Corporate Social Responsibility Information. *European Accounting Review*, *30*(1), 31-62. https://doi.org/10.1080/09638180.2019.1708428

Grabner, I., Seiter, M., Wabnegg, M., & Wirth, H. (2024). The role of target difficulty and career tournaments in retaining creative R&D employees. *Contemporary Accounting Research*, *41*(2), 1058-1088. https://doi.org/10.1111/1911-3846.12931

Grafton, J., & Mundy, J. (2017). Relational contracting and the myth of trust: Control in a co-opetitive setting. *Management Accounting Research*, *36*, 24-42. https://doi.org/10.1016/j.mar.2016.07.008

Graham, J. R., Grennan, J., Harvey, C. R., & Rajgopal, S. (2022). Corporate culture: Evidence from the field. *Journal of Financial Economics*, *146*(2), 552-593. https://doi.org/10.1016/j.jfineco.2022.07.008

Granja, J., Makridis, C., Yannelis, C., & Zwick, E. (2022). Did the paycheck protection program hit the target? *Journal of Financial Economics*, *145*(3), 725-761. https://doi.org/10.1016/j.jfineco.2022.05.006

Grant, R. M. (1996). Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration. *Organization Science*, *7*(4), 375-387. https://doi.org/10.1287/orsc.7.4.375

Green, T. C., Huang, R., Wen, Q., & Zhou, D. (2019). Crowdsourced employer reviews and stock returns. *Journal of Financial Economics*, *134*(1), 236-251. https://doi.org/10.1016/j.jfineco.2019.03.012

Greening, D. W., & Turban, D. B. (2000). Corporate Social Performance As a Competitive Advantage in Attracting a Quality Workforce. *Business & Society*, *39*(3), 254-280. https://doi.org/10.1177/000765030003900302

Hales, J., Moon, J. R., & Swenson, L. A. (2018). A new era of voluntary disclosure? Empirical evidence on how employee postings on social media relate to future corporate disclosures. *Accounting, Organizations and Society*, *68-69*, 88-108. https://doi.org/10.1016/j.aos.2018.04.004

Hancock, J. I., Allen, D. G., Bosco, F. A., McDaniel, K. R., & Pierce, C. A. (2013). Meta-Analytic Review of Employee Turnover as a Predictor of Firm Performance. *Journal of Management*, *39*(3), 573-603. https://doi.org/10.1177/0149206311424943

Hannan, R. L., Kagel, J. H., & Moser, D. V. (2002). Partial Gift Exchange in an Experimental Labor Market: Impact of Subject Population Differences, Productivity Differences, and Effort Requests on Behavior. *Journal of Labor Economics*, *20*(4), 923-951. https://doi.org/10.1086/342894

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *The Journal of Applied Psychology*, *87*(2), 268-279. https://doi.org/10.1037/0021-9010.87.2.268

Hatch, N. W., & Dyer, J. H. (2004). Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal*, *25*(12), 1155-1178. https://doi.org/10.1002/smj.421

Hausknecht, J. P., & Trevor, C. O. (2011). Collective Turnover at the Group, Unit, and Organizational Levels: Evidence, Issues, and Implications. *Journal of Management*, *37*(1), 352-388. https://doi.org/10.1177/0149206310383910

Heath, C. (1996). Do People Prefer to Pass Along Good or Bad News? Valence and Relevance of News as Predictors of Transmission Propensity. *Organizational Behavior and Human Decision Processes*, *68*(2), 79-94. https://doi.org/10.1006/obhd.1996.0091

Hilary, G., Tian, X., & Yu, M. (2025). Does Meeting Financial Expectations Boost Employee Satisfaction? *The Accounting Review*, 1-26. https://doi.org/10.2308/TAR-2022-0018

Hitt, M. A., Carnes, C. M., & Xu, K. (2016). A current view of resource based theory in operations management: A response to Bromiley and Rau. *Journal of Operations Management*, *41*(1), 107-109. https://doi.org/10.1016/j.jom.2015.11.004

Ho, J. L. Y., Lee, L.-C., & Wu, A. (2009). How Changes in Compensation Plans Affect Employee Performance, Recruitment, and Retention: An Empirical Study of a Car Dealership *Contemporary Accounting Research*, *26*(1), 167-199. https://doi.org/10.1506/car.26.1.6

Hofmann, C., & Indjejikian, R. J. (2024). Transparency in Hierarchies. *Journal of Accounting Research*, *62*(1), 411-445. https://doi.org/10.1111/1475-679X.12516

Holtom, B. C., Mitchell, T. R., Lee, T. W., & Eberly, M. B. (2008). 5 Turnover and Retention Research: A Glance at the Past, a Closer Review of the Present, and a Venture into the Future. *The Academy of Management Annals*, *2*(1), 231-274. https://doi.org/10.1080/19416520802211552

Hope, O.-K., Li, C., Lin, A.-P., & Rabier, M. (2021). Happy analysts. *Accounting, Organizations and Society*, *90*, 101199. https://doi.org/10.1016/j.aos.2020.101199

Hoynes, H., & Rothstein, J. (2019). Universal Basic Income in the United States and Advanced Countries. *Annual Review of Economics*, *11*(1), 929-958. https://doi.org/10.1146/annurev-economics-080218-030237

Huang, K., Li, M., & Markov, S. (2018). The Information Asymmetry between Management and Rank-and-File Employees: Determinants and Consequences. *Working Paper*. https://www.smu.edu/-/media/Site/Cox/Departments/Accounting/The-Information-Asymmetry-between-Management.pdf

Huang, K., Li, M., & Markov, S. (2020). What Do Employees Know? Evidence from a Social Media Platform. *The Accounting Review*, *95*(2), 199-226. https://doi.org/10.2308/accr-52519

Humphrey, S. E., Morgeson, F. P., & Mannor, M. J. (2009). Developing a theory of the strategic core of teams: A role composition model of team performance. *The Journal of Applied Psychology*, *94*(1), 48-61. https://doi.org/10.1037/a0012997

IGBCE (2023a). *Kräftiger Energieschub für Beschäftigte bei E.ON und Co.: Tarifabschluss bringt 10,5 Prozent mehr in zwei Stufen und 3000 Euro Inflationsgeld netto*. Retrieved November 22, 2025, from

https://igbce.de/igbce/presse/medieninformationen/kraeftiger-energieschub-fuer-beschaeftigte-bei-e-on-und-co-tarifabschluss-bringt-10-5-prozent-mehr-in-zwei-stufen-und-3000-euro-inflationsgeld-netto-220044

IGBCE (2023b). *Warnstreik abgewendet: Tarifeinigung in Schuh- und Sportartikelindustrie*. Retrieved November 22, 2025, from https://igbce.de/igbce/presse/medieninformationen/warnstreik-abgewendet-tarifeinigung-in-schuh-und-sportartikelindustrie-225346

Isselhard, R., Manthei, K., & Vogelsang, T. (2026). Performance pay, monetary gifts, and the moderating role of wage level. *Management Accounting Research*, *68*, 100956. https://doi.org/10.1016/j.mar.2025.100956

Jame, R., Markov, S., & Wolfe, M. C. (2022). Can FinTech Competition Improve Sell-Side Research Quality? *The Accounting Review*, *97*(4), 287-316. https://doi.org/10.2308/TAR-2019-0266

Ji, Y., Rozenbaum, O., & Welch, K. T. (2022). Corporate Culture and Financial Reporting Risk: Looking Through the Glassdoor. *SSRN Electronic Journal*. Advance online publication. https://doi.org/10.2139/ssrn.2945745

Jones, D. A., Willness, C. R., & Madey, S. (2014). Why Are Job Seekers Attracted by Corporate Social Performance? Experimental and Field Tests of Three Signal-Based Mechanisms. *Academy of Management Journal*, *57*(2), 383-404. https://doi.org/10.5465/amj.2011.0848

Jung, M. J., Naughton, J. P., Tahoun, A., & Wang, C. (2018). Do Firms Strategically Disseminate? Evidence from Corporate Use of Social Media. *The Accounting Review*, *93*(4), 225-252. https://doi.org/10.2308/accr-51906

Kacmar, K. M., Andrews, M. C., van Rooy, D. L., Chris Steilberg, R., & Cerrone, S. (2006). Sure Everyone Can Be Replaced … But At What Cost? Turnover As A Predictor Of Unit-Level Performance. *Academy of Management Journal*, *49*(1), 133-144. https://doi.org/10.5465/amj.2006.20785670

Kaplan, G., & Violante, G. L. (2014). A Tale of Two Stimulus Payments: 2001 versus 2008. *American Economic Review*, *104*(5), 116-121. https://doi.org/10.1257/aer.104.5.116

Khern-am-nuai, W., Kannan, K., & Ghasemkhani, H. (2018). Extrinsic versus Intrinsic Rewards for Contributing Reviews in an Online Platform. *Information Systems Research*, *29*(4), 871-892. https://doi.org/10.1287/isre.2017.0750

Kline, C. J., & Peters, L. H. (1991). Research notes. Behavioral commitment and tenure of new employees: A replication and extension. *Academy of Management Journal*, *34*(1), 194-204. https://doi.org/10.2307/256307

Kube, S., Maréchal, M. A., & Puppe, C. (2012). The Currency of Reciprocity: Gift Exchange in the Workplace. *American Economic Review*, *102*(4), 1644-1662. https://doi.org/10.1257/aer.102.4.1644

Kununu (2023). *Let's make work better.* Retrieved March 4, 2025, from https://www.kununu.com/

Kununu (2025). *Unser Prüfprozess für authentische Bewertungen*. Retrieved August 22, 2025, from https://inside.kununu.com/kununu-pruefprozess/

Landers, R., Brusso, R., & Auer, E. (2019). Crowdsourcing Job Satisfaction Data: Examining the Construct Validity of Glassdoor.com Ratings. *Personnel Assessment and Decisions*, *5*(3). https://doi.org/10.25035/pad.2019.03.006

Lazear, E. P. (2009). Firm-Specific Human Capital: A Skill-Weights Approach. *Journal of Political Economy*, *117*(5), 914-940. https://doi.org/10.1086/648671

Le Barbanchon, T., Rathelot, R., & Roulet, A. (2021). Gender Differences in Job Search: Trading off Commute against Wage. *The Quarterly Journal of Economics*, *136*(1), 381-426. https://doi.org/10.1093/qje/qjaa033

Lee, Y., Ng, S., Shevlin, T., & Venkat, A. (2021). The Effects of Tax Avoidance News on Employee Perceptions of Managers and Firms: Evidence from Glassdoor.com Ratings. *The Accounting Review*, *96*(3), 343-372. https://doi.org/10.2308/TAR-2019-0148

Li, N., Wong, M. F., & Zhou, F. (2019). Analysts' Underreaction to Employee Business Outlooks. *SSRN Electronic Journal.* Advance online publication. https://doi.org/10.2139/ssrn.3409397

Li, Q., Lourie, B., Nekrasov, A., & Shevlin, T. (2022). Employee Turnover and Firm Performance: Large-Sample Archival Evidence. *Management Science*, *68*(8), 5667-5683. https://doi.org/10.1287/mnsc.2021.4199

Li, S. X., & Zhou, A. (2024). Internal Connectedness and Accrual Quality: Evidence from Employee LinkedIn Connections. *Accounting Horizons*, 1-16. https://doi.org/10.2308/HORIZONS-2023-086

Lilge, A., & Ramchandani, A. (2024). To tell or not to tell: the incentive effects of disclosing employer assessments. *Review of Accounting Studies*, *29*(3), 2832-2870. https://doi.org/10.1007/s11142-023-09769-6

Liu, Q., Shen, Q., Li, Z., & Chen, S. (2021). Stimulating Consumption at Low Budget: Evidence from a Large-Scale Policy Experiment Amid the COVID-19 Pandemic. *Management Science*, *67*(12), 7291-7307. https://doi.org/10.1287/mnsc.2021.4119

Liu, T., Makridis, C. A., Ouimet, P., & Simintzi, E. (2017). Is Cash Still King: Why Firms Offer Non-Wage Compensation and the Implications for Shareholder Value. *SSRN Electronic Journal.* Advance online publication. https://doi.org/10.2139/ssrn.3088067

Liu, T., Makridis, C. A., Ouimet, P., & Simintzi, E. (2023). The Distribution of Nonwage Benefits: Maternity Benefits and Gender Diversity. *Review of Financial Studies*, *36*(1), 194-234. https://doi.org/10.1093/rfs/hhac039

Lucas Ancillo, A. de, Gavrila Gavrila, S., & Del Val Núñez, M. T. (2023). Workplace change within the COVID-19 context: The new (next) normal. *Technological Forecasting and Social Change*, *194*, 122673. https://doi.org/10.1016/j.techfore.2023.122673

Mahlendorf, M. D., Martin, M. A., & Smith, D. (2023). Innovative Data – Use-cases in Management Accounting Research and Practice. *European Accounting Review*, *32*(3), 547-576. https://doi.org/10.1080/09638180.2023.2213258

Mali, D., Lim, H.-J., Attah-Boakye, R., & Adams, K. (2024). An analysis of the effect of employee tenure on WACC. *Accounting Forum*, 1-29. https://doi.org/10.1080/01559982.2024.2352671

Marinescu, I., Chamberlain, A., Smart, M., & Klein, N. (2021). Incentives can reduce bias in online employer reviews. *Journal of Experimental Psychology: Applied*, *27*(2), 393-407. https://doi.org/10.1037/xap0000342

Mas, A., & Pallais, A. (2017). Valuing Alternative Work Arrangements. *American Economic Review*, *107*(12), 3722-3759. https://doi.org/10.1257/aer.20161500

Mayew, W. J., & Zhang, Y. (2024). COVID-19 Human Capital Management Response and Firm Value. *Journal of Management Accounting Research*, *36*(3), 153-175. https://doi.org/10.2308/JMAR-2023-046

Mitchell, T. R., Holtom, B. C., Lee, T. W., Sablynski, C. J., & Erez, M. (2001). Why People Stay: Using Job Embeddedness to Predict Voluntary Turnover. *Academy of Management Journal*, *44*(6), 1102-1121. https://doi.org/10.5465/3069391

Novak, J., & Bilinski, P. (2018). Social stigma and executive compensation. *Journal of Banking & Finance*, *96*, 169-184. https://doi.org/10.1016/j.jbankfin.2018.09.003

ONS (2024). *Labour market overview, UK: July 2024: Estimates of employment, unemployment, economic inactivity and other employment-related statistics for the UK.* Retrieved August 19, 2024, from https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/july2024

Parker, J. A., & Souleles, N. S. (2019). Reported Effects versus Revealed-Preference Estimates: Evidence from the Propensity to Spend Tax Rebates. *American Economic Review: Insights*, *1*(3), 273-290. https://doi.org/10.1257/aeri.20180333

Parker, J. A., Souleles, N. S., Johnson, D. S., & McClelland, R. (2013). Consumer Spending and the Economic Stimulus Payments of 2008. *American Economic Review*, *103*(6), 2530-2553. https://doi.org/10.1257/aer.103.6.2530

Powell, D. (2020). Does Labor Supply Respond to Transitory Income? Evidence from the Economic Stimulus Payments of 2008. *Journal of Labor Economics*, *38*(1), 1-38. https://doi.org/10.1086/704494

Presslee, A., Richins, G., Saiy, S., & Webb, A. (2023). Small sample field study: The effects of team-based recognition on employee engagement and effort. *Management Accounting Research*, *59*, 100829. https://doi.org/10.1016/j.mar.2022.100829

Ranta, M., & Ylinen, M. (2024). Employee benefits and company performance: Evidence from a high-dimensional machine learning model. *Management Accounting Research*, *64*, 100876. https://doi.org/10.1016/j.mar.2023.100876

Rouen, E. (2020). Rethinking Measurement of Pay Disparity and Its Relation to Firm Performance. *The Accounting Review*, *95*(1), 343-378. https://doi.org/10.2308/accr-52440

Sanati, A. (2024). How Does Labor Mobility Affect Corporate Leverage and Investment? *Journal of Financial and Quantitative Analysis*, 1-39. https://doi.org/10.1017/S0022109024000115

Schafhäutle, S. G., & Veenman, D. (2023). Crowdsourced Forecasts and the Market Reaction to Earnings Announcement News. *The Accounting Review*, 1-36. https://doi.org/10.2308/TAR-2021-0055

Schmiedel, T., Müller, O., & vom Brocke, J. (2019). Topic Modeling as a Strategy of Inquiry in Organizational Research: A Tutorial With an Application Example on Organizational Culture. *Organizational Research Methods*, *22*(4), 941-968. https://doi.org/10.1177/1094428118773858

Schneider, B., Hanges, P. J., Smith, D. B., & Salvaggio, A. N. (2003). Which comes first: Employee attitudes or organizational financial and market performance? *The Journal of Applied Psychology*, *88*(5), 836-851. https://doi.org/10.1037/0021-9010.88.5.836

Schuhmacher, K., Towry, K. L., & Zureich, J. (2022). Leading by Example in Socially Driven Organizations: The Effect of Transparent Leader Compensation Contracts on Following. *The Accounting Review*, *97*(3), 373-393. https://doi.org/10.2308/TAR-2019-0227

Shaw, J. D. (2011). Turnover rates and organizational performance. *Organizational Psychology Review*, *1*(3), 187-213. https://doi.org/10.1177/2041386610382152

Shaw, J. D., Park, T.-Y., & Kim, E. (2013). A resource-based perspective on human capital losses, HRM investments, and organizational performance. *Strategic Management Journal*, *34*(5), 572-589. https://doi.org/10.1002/smj.2025

Sheng, J. (2023). Asset Pricing in the Information Age: Employee Expectations and Stock Returns. *SSRN Electronic Journal.* Advance online publication. https://doi.org/10.2139/ssrn.3321275

Shields, M. D., & Waller, W. S. (1988). A behavioral study of accounting variables in performance—incentive contracts. *Accounting, Organizations and Society*, *13*(6), 581-594. https://doi.org/10.1016/0361-3682(88)90032-3

Smart, M., & Chamberlain, A. (2017). *Why Do Workers Quit? The Factors that Predict Employee Turnover*. Retrieved August 24, 2024, from https://research.glassdoor.com/site-us/wp-

content/uploads/sites/2/2017/02/GD_ResearchReport_WhyWorkersQuit_Rebrand_Draft3-1.pdf

Srivastava, J., & Lurie, N. (2001). A Consumer Perspective on Price-Matching Refund Policies: Effect on Price Perceptions and Search Behavior. *Journal of Consumer Research*, *28*(2), 296-307. https://doi.org/10.1086/322904

Symitsi, E., Stamolampros, P., Daskalakis, G., & Korfiatis, N. (2021). The informational value of employee online reviews. *European Journal of Operational Research*, *288*(2), 605-619. https://doi.org/10.1016/j.ejor.2020.06.001

Tang, V. W. (2018). Wisdom of Crowds: Cross-Sectional Variation in the Informativeness of Third-Party-Generated Product Information on Twitter. *Journal of Accounting Research*, *56*(3), 989-1034. https://doi.org/10.1111/1475-679X.12183

Teoh, S. H. (2018). The promise and challenges of new datasets for accounting research. *Accounting, Organizations and Society*, *68-69*, 109-117. https://doi.org/10.1016/j.aos.2018.03.008

Tsui, A. S., Pearce, J. L., Porter, L. W., & Tripoli, A. M. (1997). Alternative Approaches to the Employee-Organization Relationship: Does Investment in Employees Pay Off? *Academy of Management Journal*, *40*(5), 1089-1121. https://doi.org/10.5465/256928

Uggerslev, K. L., Fassina, N. E., & Kraichy, D. (2012). Recruiting Through the Stages: A Meta-Analytic Test of Predictors of Applicant Attraction at Different Stages of the Recruiting Process. *Personnel Psychology*, *65*(3), 597-660. https://doi.org/10.1111/j.1744-6570.2012.01254.x

Waller, W. S., & Chow, C. W. (1985). The self-selection and effort effects of standard-based employment contracts: A framework and some empirical evidence. *The Accounting Review*, *60*(3), 458-476.

Welch, K., & Yoon, A. (2023). Do high-ability managers choose ESG projects that create shareholder value? Evidence from employee opinions. *Review of Accounting Studies*, *28*(4), 2448-2475. https://doi.org/10.1007/s11142-022-09701-4

Wiswall, M., & Zafar, B. (2018). Preference for the Workplace, Investment in Human Capital, and Gender. *The Quarterly Journal of Economics*, *133*(1), 457-507. https://doi.org/10.1093/qje/qjx035

Appendix

Table A 25: Monthly overview of the number of companies and review metrics by treatment and control group as well as index

Date	Number of untreated companies with reviews	Number of treated companies with reviews	Number of DAX reviews	Number of MDAX reviews	Average overall score for companies that belong to the control group	Average overall score for treated companies that belong to the treatment group
January 2019	65	0	206	102	3.4	-
February 2019	73	0	468	196	3.6	-
March 2019	80	0	576	269	3.7	-
April 2019	73	0	398	255	3.6	-
May 2019	79	0	1,214	604	3.8	-
June 2019	77	0	807	310	3.7	-
July 2019	81	0	1,052	444	3.8	-
August 2019	76	0	382	269	3.5	-
September 2019	75	0	444	301	3.6	-
October 2019	77	0	688	225	3.6	-
November 2019	75	0	548	179	3.6	-
December 2019	66	0	264	116	3.5	-
January 2020	74	0	541	173	3.6	-
February 2020	66	0	187	121	3.3	-
March 2020	71	0	246	131	3.7	-
April 2020	71	0	539	192	3.8	-
May 2020	77	0	491	259	3.9	-
June 2020	78	0	529	234	3.8	-
July 2020	81	0	707	317	3.8	-
August 2020	57	0	371	160	3.5	-
September 2020	62	0	187	155	3.5	-
October 2020	71	0	237	209	3.5	-
November 2020	74	0	436	218	3.6	-
December 2020	68	0	630	123	3.7	-
January 2021	65	0	423	127	3.7	-
February 2021	69	0	283	142	3.7	-
March 2021	76	0	383	184	3.7	-
April 2021	79	0	807	268	4.0	-
May 2021	69	0	253	145	3.6	-
June 2021	64	0	187	97	3.6	-
July 2021	80	0	631	240	3.8	-
August 2021	74	0	199	108	3.6	-
September 2021	79	0	470	200	3.7	-
October 2021	81	0	324	152	3.7	-
November 2021	73	0	615	194	3.9	-
December 2021	70	0	231	219	3.7	-
January 2022	81	0	848	318	3.9	-
February 2022	73	0	234	123	3.5	-
March 2022	66	0	469	99	3.5	-
April 2022	81	0	686	266	3.9	-
May 2022	67	0	247	82	3.4	-
June 2022	67	0	290	107	3.6	-
July 2022	73	0	279	106	3.7	-
August 2022	79	0	558	259	3.7	-
September 2022	85	0	995	343	3.8	-
October 2022	80	0	868	246	3.9	-

November 2022	63	1	315	105	3.5	4.2
December 2022	58	4	291	100	3.3	3.8
January 2023	69	14	876	527	3.9	3.9
February 2023	28	54	1,067	355	3.5	3.8
March 2023	20	49	397	154	3.3	3.5
April 2023	27	56	838	337	3.9	3.9
May 2023	21	58	469	227	3.7	3.9
June 2023	13	51	310	109	3.6	3.7
July 2023	14	55	253	183	3.3	3.5
August 2023	13	57	224	119	2.9	3.2
September 2023	12	66	504	180	3.6	3.7
October 2023	15	63	503	219	3.6	3.7
November 2023	16	68	1,167	454	3.8	3.9
December 2023	13	61	344	155	3.6	3.7
January 2024	11	59	387	150	3.9	3.6
February 2024	15	69	1,569	549	3.7	3.9
March 2024	16	67	1,033	530	3.6	3.9
April 2024	12	66	501	233	3.2	3.7
May 2024	14	67	486	225	3.3	3.8
June 2024	12	63	361	146	3.6	3.5

Table A 26: Overview of how the DAX 40 companies handled the inflation compensation premium

DAX 40 company	**First payment period**	**Payment amount**	**Group**
Adidas AG	August 2023	€ 2,000	9
Airbus SE	December 2022	€ 3,000	2
Allianz SE	January 2023	€ 2,000	3
BASF SE	January 2023	€ 3,000	3
Bayer	January 2023	€ 3,000	3
Beiersdorf	January 2023	€ 3,000	3
BMW AG	January 2023	€ 3,000	3
Brenntag SE	-	-	
Commerzbank	December 2022	€ 3,000	2
Continental AG	January 2023	€ 3,000	3
Covestro AG	January 2023	€ 3,000	3
Daimler Truck Holding AG	January 2023	€ 3,000	3
Deutsche Bank AG	December 2022	€ 3,000	2
Deutsche Börse AG	December 2022	unknown	2
Deutsche Post AG	April 2023	€ 3,000	6
Deutsche Telekom AG	March 2023	€ 2,550	5
E.ON SE	June 2023	€ 3,000	8
Fresenius SE & Co. KgaA	January 2023	€ 3,000	3
Hannover Rück SE	January 2023	€ 2,000	3
HeidelbergCement AG (Heidelberg Materials)	-	-	
Henkel AG & Co. KgaA	January 2023	€ 3,000	3
Infineon AG	January 2023	€ 3,000	3
Mercedes-Benz-Group AG	January 2023	€ 3,000	3
MERCK KgaA	January 2023	€ 3,000	3
MTU Aero Engines AG	January 2023	€ 3,000	3
Münchener Rückversicherungs-Gesellschaft AG	January 2023	€ 2,000	3
Dr. Ing. H.c.F. Porsche AG	November 2022	€ 3,000	1
Porsche Automobil Holding SE (Dr. Ing. H.c.F. Porsche AG)	November 2022	€ 3,000	1
Qiagen NV	November 2022	unknown	1

Rheinmetall	January 2023	€ 3,000	3
RWE AG	December 2022	€ 3,000	2
SAP SE	February 2023	€ 3,000	4
Sartorius AG VZ	January 2023	€ 3,000	3
Siemens AG	January 2023	€ 3,000	3
Siemens Energy	January 2023	€ 3,000	3
Siemens Healthineers AG	January 2023	€ 3,000	3
Symrise AG	December 2022	€ 3,000	2
Volkswagen AG VZ	February 2023	€ 3,000	4
Vonovia SE	January 2023	€ 3,000	3
Zalando SE	May 2023	€ 2,000	7

Table A 27: Overview of how the MDAX 50 companies handled the inflation compensation premium

MDAX 50 company	**First payment period**	**Payment amount**	**Group**
Aixtron SE	December 2022	€ 3,000	2
Aroundtown	-	-	
Aurubis AG	January 2023	€ 3,000	3
Bechtle AG	December 2022	unknown	2
Befesa S.A.	January 2023	€ 3,000	3
Bilfinger SE	September 2023	€ 3,000	10
Carl Zeiss Meditec	January 2023	€ 3,000	3
CTS Eventim AG & Co. KGaA	October 2022	unknown	0*
Delivery Hero SE	-	-	
Encavis AG	-	-	
Evonik Industries AG	January 2023	€ 3,000	3
Evotec SE	-	-	
Fresenius Medical Care (FMC)	January 2023	€ 3,000	3
Fraport AG	June 2023	€ 3,000	8
Freenet	December 2022	unknown	2
Fuchs SE	January 2023	€ 3,000	3
GEA Group	January 2023	€ 3,000	3
Gerresheimer AG	March 2024	€ 2,000	12
Hella GmbH & Co. KGaA	January 2023	€ 3,000	3
HelloFresh SE	August 2024**	€ 1,000	14
Hensoldt AG	January 2023	€ 3,000	3
HOCHTIEF	September 2024**	€ 1,750	15
Hugo Boss AG	April 2023	€ 1,500	6
Jenoptik AG***	January 2023	€ 3,000	3
Jungheinrich AG	January 2023	€ 3,000	3
K+S AG	March 2023	€ 3,000	5
Kion Group AG	January 2023	€ 3,000	3
Knorr-Bremse AG	January 2023	€ 3,000	3

* The company Eventim represents an exception as it marks the very first payment of the inflation compensation premium in October 2022. However, there are no reviews on Kununu for this company in the period immediately prior to the treatment, which is required to estimate a group-specific average treatment effect. This company is therefore treated as group 0 and cannot be included in the subsequent analyses.

** As my data set only contains reviews from January 2019 to June 2024, the payment of the inflation compensation premium by companies after this date can no longer be taken into account. Due to this restriction, these companies are therefore considered never treated in the data set.

*** For the company Jenoptik, my data set does not contain any reviews prior to their payment of the inflation compensation premium in January 2023. Consequently, no pre-post comparison between the treatment and control periods is possible, which is why I had to exclude the company from the analysis.

Krones AG	January 2023	€ 3,000	3
Lanxess AG	January 2023	€ 3,000	3
LEG Immobilien SE	December 2022	unknown	2
Lufthansa AG	April 2024	€ 3,000	13
Nemetschek SE	-	-	
Nordex SE	January 2023	€ 3,000	3
Puma SE	August 2023	€ 2,000	9
Rational AG	November 2022	€ 3,000	1
Redcare Pharmacy	-	-	
RTL Group	April 2023	€ 2,250	6
Scout24 SE	-	-	
Siltronic AG	January 2023	€ 3,000	3
Stabilus SE	January 2023	€ 3,000	3
Ströer SE & Co. KGaA	-	-	
TAG Immobilien AG	-	-	
Talanx AG	January 2023	€ 2,000	3
Teamviewer	-	-	
Thyssenkrupp AG	January 2024	€ 3,000	11
Traton SE	January 2023	€ 3,000	3
TUI AG	October 2024**	€ 1,050	16
Wacker Chemie AG	January 2023	€ 3,000	3

Table A 28: Group-specific average treatment effect on the companies' overall score in group 2 of the sample over time

						95 % confidence interval	
Group	Period after payment	Average treatment effect	Standard error	t	p	Lower limit	Upper limit
2	1	0.6632***	0.2182	3.0388	0.0024	0.2355	1.091
2	2	1.0862***	0.2955	3.6755	0.0002	0.507	1.6654
2	3	1.5216***	0.3749	4.0585	0.0000	0.7868	2.2564
2	4	0.695**	0.2797	2.4849	0.013	0.1468	1.2431
2	5	1.2993***	0.5021	2.5875	0.0097	0.3151	2.2834
2	6	0.7113	0.4591	1.5491	0.1214	-0.1887	1.6112
2	7	0.7509**	0.3787	1.9828	0.0474	0.0086	1.4931
2	8	1.4862***	0.4322	3.4383	0.0006	0.639	2.3334
2	9	0.5548	0.4302	1.2897	0.1972	-0.2884	1.398
2	10	0.5666	0.5688	0.9961	0.3192	-0.5483	1.6815
2	11	0.8369*	0.4561	1.8349	0.0665	-0.057	1.7308
2	12	1.1455**	0.4792	2.3904	0.0168	0.2063	2.0848
2	13	0.8959	0.558	1.6056	0.1084	-0.1977	1.9895
2	14	0.4023	0.6088	0.6608	0.5087	-0.7909	1.5955
2	15	0.4212	0.6446	0.6535	0.5135	-0.8422	1.6847
2	16	0.8553*	0.4831	1.7703	0.0767	-0.0917	1.8022
2	17	0.5331	0.6532	0.8161	0.4144	-0.7472	1.8134
2	18	0.6787	0.6151	1.1035	0.2698	-0.5268	1.8842

n = 4,558; *p < 0.10, **p < 0.05, ***p < 0.01

Table A 29: Group-specific average treatment effect on the companies' overall score in group 10 of the sample over time

						95 % confidence interval	
Group	Period after payment	Average treatment effect	Standard error	t	p	Lower limit	Upper limit
10	1	1.6385***	0.2274	7.2056	0.0000	1.1928	2.0841
10	2	1.4284***	0.1647	8.6744	0.0000	1.1057	1.7512
10	3	0.9962***	0.19	5.2426	0.0000	0.6237	1.3686
10	4	0.1017	0.2542	0,4	0.6892	-0.3966	0.6
10	5	1.0854***	0.2415	4.4939	0.0000	0.612	1.5588
10	6	0.6542**	0.269	2.4322	0.015	0.127	1.1814
10	7	1.5426***	0.2521	6.1199	0.0000	1.0486	2.0367
10	8	0.6238*	0.3459	1.8035	0.0713	-0.0541	1.3017
10	9	0.3109	0.3369	0.9231	0.356	-0.3493	0.9712

n = 395; *p < 0.10, **p < 0.05, ***p < 0.01

Table A 30: Group-specific average treatment effect on the companies' category recommendation to a friend in the overall sample

					95 % confidence interval	
Average treatment effect		Standard error	t	p	Lower limit	Upper limit
-0.0112		0.0244	-0.4581	0.6469	-0.0591	0.0367
					95 % confidence interval	
Group	Estimate	Standard error	t	P	Lower limit	Upper limit
1	0.0638	0.2406	0.2652	0.7943	-0.4460	0.5736
2	0.0920	0.1681	0.5472	0.5917	-0.2641	0.4481
3	-0.0344	0.0261	-1.3210	0.205	-0.0896	0.0208
4	0.0086	0.1020	0.0840	0.9341	-0.2076	0.2247
5	-0.0145	0.1124	-0.1293	0.8988	-0.2526	0.2236
6	-0.0152	0.0247	-0.6140	0.5478	-0.0675	0.0372
7	0.0803**	0.0292	2.7492	0.0142	0.0184	0.1422
8	-0.0229	0.0577	-0.3972	0.6965	-0.1452	0.0994
9	-0.2326*	0.1145	-2.0308	0.0591	-0.4753	0.0101
10	-0.0042	0.0204	-0.2082	0.8377	-0.0474	0.0389
11	0.0426	0.0495	0.8608	0.402	-0.0622	0.1474
12	0.0581	0.0786	0.7390	0.4705	-0.1084	0.2246
13	-0.0455	0.0613	-0.7419	0.4688	-0.1753	0.0843

n = 48,967; *p < 0.10, **p < 0.05, ***p < 0.01

5 General Conclusion

In a challenging era marked by rapid societal change, volatile macroeconomic forces, and the emergence of innovative data sources, organizations are required to navigate an increasingly complex global environment (Otley, 2016; van der Vegt et al., 2015; Wenzel et al., 2021). My dissertation addresses these contemporary circumstances through three interconnected, overarching research directions that collectively demonstrate how management accounting and control may evolve to remain effective in modern organizational contexts (cf. Dirks & Wouters, 2025).

The first overarching research direction focuses on sustainable transformation, specifically investigating how corporate social goals materialize in management control systems (MCSs) of family businesses. Despite growing stakeholder expectations and regulatory requirements for holistic sustainability initiatives, the social dimension remains significantly underrepresented in both research and practice (Arjaliès & Mundy, 2013; Bebbington & Thomson, 2013; Gond et al., 2012; Lueg & Radlach, 2016). Utilizing an exploratory interview study, *Paper 1* addresses this gap and identifies how socially oriented goals can be embedded in MCSs of family business using the framework of Malmi and Brown (2008), thereby facilitating their integration into organizational practice.

The second overarching research direction shifts attention to exogenous shocks, focusing on the application of the *controllability principle* (cf. Antle & Demski, 1988; Holmstrom, 1979, 1982) during periods of severe economic instability, such as significant inflation. Drawing on a randomized field experiment conducted in German retail stores, *Paper 2* provides the first causal evidence regarding the effectiveness and implications of adjusting employee performance measures for inflationary effects. Accordingly, this study addresses a pivotal dilemma faced by organizations: Whether performance measures should be adjusted to filter out uncontrollable external factors, or whether such adjustments risk undermining employee motivation and thereby overall performance (cf. Bol & Smith, 2011; Garvey & Milbourn, 2006).

The third overarching research direction explores the potential of innovative data sources, using crowd-based data on an employer review platform to analyze how voluntary one-off payments affect employee satisfaction. In an era characterized by acute shortage of skilled labor and evolving workforce expectations (Ranta & Ylinen, 2024; Sanati, 2024), organizations increasingly rely on both financial and non-financial incentives to attract and retain talent

(Campello et al., 2023; Fauver et al., 2018; Garel & Petit-Romec, 2021). Utilizing archival data from the employer review platform Kununu and considering the German inflation compensation premium, *Paper 3* investigates how voluntary one-off payments act as signals of organizational appreciation, influencing employees' corporate perception and satisfaction (cf. Edmans, 2011; Ehrhart & Ziegert, 2005). In doing so, this study examines both the immediate and temporal effects of these discretionary incentives, thus enriching our understanding of employee satisfaction and employer branding in a competitive labor market context.

Collectively, the three papers of my dissertation provide a comprehensive perspective on the evolution of management accounting and control practices, emphasizing the necessity of flexible, context-sensitive mechanisms in accordance with *contingency theory* that enable companies to respond effectively to contemporary challenges. The following section summarizes the key findings of my dissertation across its three overarching research directions.

5.1 Major findings

A holistic approach to sustainability represents one of the most pressing challenges for contemporary organizations (UN, 2021; WHO, 2023). Yet, prior research has paid relatively little attention to the social dimension of corporate sustainability (e.g., Figge & Hahn, 2013; Gerged et al., 2024; Johnstone, 2020). In addressing RQ1, which concerns how corporate social goals materialize in MCSs of family businesses, *Paper 1* identifies measures that facilitate the integration of social goal orientation into corporate practice. The qualitative evidence reveals a diverse but uneven landscape of practices. Cultural controls (e.g., tone at the top, mission statements, value-based hiring, and mandatory social-values training) play a dominant role, especially in smaller companies where informal norms often substitute for elaborate systems. By contrast, larger family businesses complement these cultural levers with more formal cybernetic and administrative mechanisms such as dedicated social-spending budgets, codes of conduct with supplier questionnaires, sustainability balanced scorecards, and foundation-based governance structures.

Overall, however, most respondents of the interview study continue to treat social initiatives as secondary by-products of commercial activity rather than as equally weighted strategic obligations. Few companies systematically track social return on investment, and success of social initiatives is often gauged through anecdotal feedback rather than defined key performance indicators (KPIs). Accordingly, my dissertation's first study not only enriches the

predominantly environmentally oriented literature on *sustainability management accounting and control* and expands on the initial approaches of Feder and Weißenberger (2021) in this regard. These insights also offer practitioners guidance for evolving from ad hoc, culturally driven social engagement toward a balanced control package that makes social performance visible, measurable, and strategically integral (cf. Creed et al., 2022; Mayer, 2021).

Another contemporary challenge for companies arises from the increasing frequency of global and geopolitical crises, which fuel widespread economic instability and, among other consequences, are contributing to extremely high inflation rates. In *Paper 2*, a randomized field experiment across eleven German supermarkets provides the first causal evidence investigating RQ2 on how inflation adjustments to performance measures affect employee performance. The results of this field experiment reveal a nuanced picture. Contrary to predictions derived from *standard economic theory* and the *controllability principle* (cf. Antle & Demski, 1988; Holmstrom, 1979, 1982), inflation-adjusted performance measures do not significantly improve sales performance in the retail setting tested. Instead, supermarket departments that receive inflation-adjusted reports generate slightly lower weekly sales than their control group counterparts, although this difference is statistically insignificant.

Additional analyses reveal that overall sales decline significantly with rising inflation, regardless of treatment status. This finding suggests that while inflation-adjusted reports may not meaningfully change behavior in isolation, rising inflation itself is associated with deteriorating performance, likely reflecting changes in price-sensitive consumer purchasing behavior (e.g., substituting products, reducing basket size). Interestingly, in cases of deflation within specific product categories (i.e., falling prices for certain products), departments that receive deflation-adjusted reports, which portray employees' performance in a more favorable light, exhibit relatively higher sales, albeit again without statistical significance. This asymmetry points to a broader behavioral tendency: Employees may resist downward adjustments that threaten established performance expectations but appear to respond more receptive to upward corrections (cf. Bol & Smith, 2011; Garvey & Milbourn, 2006).

From a managerial perspective, the findings caution against automatically applying the *controllability principle* in performance reporting. Adjusting performance measures for inflation may fail to improve behavior and might even demotivate employees if not carefully communicated and embedded in broader feedback processes. In line with *goal-setting theory* (cf. Locke & Latham, 2002), such adjustments risk being perceived as moving the goalposts, especially when employees internalize nominal performance trends as implicit benchmarks.

Hence, making performance metrics "more real" does not automatically make them "more effective." Accordingly, this paper contributes not only to literature on the *controllability principle* and performance measurement in management accounting and control, but also informs current managerial debates about how best to align incentives and information in times of economic turbulence.

In light of the additional organizational challenges arising from today's labor market dynamics, which are increasingly characterized by acute skill shortages, high turnover rates, and shifting employer-employee relationships (cf. Belo et al., 2017; Golden et al., 2020; Sanati, 2024), innovative data sources can provide new insights into employee recruitment and retention. Using crowd-based data from the employer review platform Kununu, *Paper 3* investigates RQ3 on how voluntary one-off payments by employers (in the form of the German inflation compensation premium) affect employee satisfaction. Drawing on *signaling theory* (cf. Connelly et al., 2011) and *relational contracting* (cf. Gibbons & Henderson, 2012; Grafton & Mundy, 2017), the analysis of DAX 40 and MDAX 50 companies reveals a differentiated pattern. The results of my study demonstrate that voluntary one-off payments serve as credible signals of organizational appreciation, significantly increasing overall employee satisfaction ratings as well as specific subcategories (*salary/social benefits*, *working atmosphere*, *work-life balance*, *working conditions*, *environmental/social awareness*). These findings align with prior research emphasizing the central role of corporate culture as a driver of employee satisfaction (Graham et al., 2022) and the growing significance of work-life balance, particularly among younger employees (Baudot et al., 2022; Hope et al., 2021). My results thus confirm previous research showing that monetary incentives function as effective signals of employer attractiveness (cf. Chhabra & Sharma, 2014; Dögl & Holtbrügge, 2014).

Further subgroup analyses indicate a notable first-mover advantage: Companies that disbursed the inflation compensation premium early on achieved higher ratings, whereas late adopters tended to score lower ratings, albeit without statistical significance. Contrary to the temporal hypothesis, the data does not reveal a pronounced immediate peak in ratings followed by a decline. Consequently, the findings underscore the potential and limitations of monetary incentives in strategies for long-term employee satisfaction. From a managerial standpoint, my study suggests that voluntary one-off payments can enhance perceived appreciation and strengthen employer branding, particularly when deployed proactively. While one-off payments clearly boost certain aspects of satisfaction, their impact is contingent on timing, communication, and broader context.

Nevertheless, in line with prior research on the transient nature of financial incentives (cf. Marinescu et al., 2021), such payments may be embedded within broader, especially non-monetary, initiatives to sustain and deepen positive perceptions. Accordingly, this paper enriches the literature on relational signaling in employment relationships and offers timely insights for practitioners navigating employee satisfaction in economically volatile contexts. In addition, my study makes significant methodological contributions by demonstrating the value of crowd-based employer review data for management accounting and control research. Such data sources offer unprecedented granularity of employee sentiment information (Grégoire et al., 2024; Jame et al., 2016; Mahlendorf et al., 2023; Teoh, 2018), providing access to real-time organizational insights that capture unfiltered employee perceptions influenced by non-public information (cf. Ang et al., 2021; Da & Huang, 2020; Hales et al., 2018; Tang, 2018).

Altogether, my cumulative dissertation advances the management accounting and control literature by providing compelling empirical evidence on how selected contemporary challenges shape control practices and by identifying how organizations can strategically adapt their prevailing structures and mechanisms to remain effective under changing circumstances. Consistent with *contingency theory*, my research highlights the need to reconsider traditional management accounting and control principles. This need arises in light of evolving stakeholder expectations, external economic volatility caused by successive global crises (Bundy et al., 2017; Pearson & Clair, 1998), and new technological capabilities that position management accountants as providers of comprehensive organizational insights (Mahlendorf et al., 2023). Ultimately, the multi-paradigm methodological approach of my dissertation strengthens the empirical foundation and enhances the practical applicability of its insights across diverse organizational contexts.

5.2 Limitations and further research

While my dissertation provides valuable insights into contemporary challenges in management accounting and control, several limitations must be acknowledged, which at the same time open promising avenues for future research.

First, the exploratory nature of *Paper 1* restricts the generalizability of its findings beyond family businesses and the specific national context of Germany. These circumstances may not reflect the challenges faced by organizations operating under different stakeholder pressures or regulatory environments. Future research should therefore broaden the scope to include diverse

organizational forms and examine how the materialization of social goals in MCSs varies across different ownership structures, industries, and cultural settings. Additionally, longitudinal studies would be particularly valuable to capture how social goal integration evolves over time and whether the control mechanisms identified remain effective as organizations advance in their sustainability journeys. The present research offers a snapshot of social goal orientation but does not fully account for the dynamic processes by which these control systems adapt to shifting stakeholder expectations and regulatory requirements, such as those introduced by the Corporate Sustainability Reporting Directive (CSRD) and subsequent amendments thereof, including the Omnibus package (European Commission, 2025a, 2025b).

Second, the field experiment in *Paper 2* was conducted during an exceptional period of economic instability in the German retail environment. This context limits the transferability of the findings to other industries or macroeconomic conditions. The *controllability principle* may operate differently across diverse organizational environments, and future research should examine its application under varying economic circumstances. In this context, longitudinal investigation into the phenomenon would be of interest as well, given that the present study was constrained by a two-month treatment phase. Furthermore, additional qualitative or laboratory approaches could complement experimental evidence by offering deeper insights into employees' perceptions of and responses to performance measure adjustments. This would not only help to ascertain whether employees had in fact noticed the adjusted performance reports, but also how they had interpreted them.

Third, utilizing crowd-based employer review platform data in *Paper 3* may introduce potential selection biases, as voluntarily submitted reviews may limit the representativeness of employee sentiment (cf. Hales et al., 2018; Liu et al., 2017; Marinescu et al., 2021). To strengthen validity, future research could triangulate review data with internal employee surveys, retention metrics, or interview evidence. Longitudinal analyses could further enhance understanding by capturing a broader spectrum of employee perceptions over time. Additionally, future studies could explore how variations in organizational communication strategies and incentive structures might extend or amplify the positive effects of voluntary one-off payments on employee satisfaction. Moreover, the current study's focus on German companies and the unique context of the German inflation compensation premium limit international generalizability. Labor market conditions, cultural norms regarding employer-employee relationships, and legal frameworks for voluntary payments vary substantially across countries, warranting replication studies in different national contexts to determine the broader applicability of my findings.

Finally, future research could integrate the three overarching research directions explored individually in my dissertation more comprehensively. For instance, studies could examine how sustainability goals and innovative data sources might be strategically integrated to collectively enhance organizational resilience to macroeconomic shocks. Such an integrative approach could yield valuable insights into how management accounting and control systems jointly respond to overlapping, complex challenges. Thus, while my dissertation significantly advances both theory and practice, ample opportunities remain for future research.

Overall, I hope that the insights of my dissertation contribute to a deeper understanding of emerging directions in management accounting and control, while offering guidance on how companies can navigate contemporary challenges. To paraphrase Albert Einstein, “We cannot solve our problems with the same thinking we used when we created them.” – may this dissertation serve as a stepping stone toward the fresh thinking required to shape the organizations of tomorrow.

References

Ang, J. S., Hsu, C., Di Tang, & Wu, C. (2021). The Role of Social Media in Corporate Governance. *The Accounting Review*, *96* (2), 1-32. https://doi.org/10.2308/TAR-2018-0144

Antle, R., & Demski, J. S. (1988). The Controllability Principle in Responsibility Accounting. *The Accounting Review*, *63* (4), 700-718.

Arjaliès, D.-L., & Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, *24* (4), 284-300. https://doi.org/10.1016/j.mar.2013.06.003

Baudot, L., Kelly, K., & McCullough, A. (2022). Contemporary Conflicts in Perspectives on Work Hours across Hierarchical Levels in Public Accounting. *The Accounting Review*, *97* (6), 67-89. https://doi.org/10.2308/TAR-2020-0106

Bebbington, J., & Thomson, I. (2013). Sustainable development, management and accounting: Boundary crossing. *Management Accounting Research*, *24* (4), 277-283. https://doi.org/10.1016/j.mar.2013.09.002

Belo, F., Li, J., Lin, X., & Zhao, X. (2017). Labor-Force Heterogeneity and Asset Prices: The Importance of Skilled Labor. *Review of Financial Studies*, *30* (10), 3669-3709. https://doi.org/10.1093/rfs/hhx070

Bol, J. C., & Smith, S. D. (2011). Spillover Effects in Subjective Performance Evaluation: Bias and the Asymmetric Influence of Controllability. *The Accounting Review*, *86* (4), 1213-1230. https://doi.org/10.2308/accr-10038

Bundy, J., Pfarrer, M. D., Short, C. E., & Coombs, W. T. (2017). Crises and Crisis Management: Integration, Interpretation, and Research Development. *Journal of Management*, *43* (6), 1661-1692. https://doi.org/10.1177/0149206316680030

Campello, M., Kankanhalli, G., & Muthukrishnan, P. (2023). Corporate Hiring Under COVID-19: Financial Constraints and the Nature of New Jobs. *Journal of Financial and Quantitative Analysis*, 1-45. https://doi.org/10.1017/s0022109023000522

Chhabra, N. L., & Sharma, S. (2014). Employer branding: strategy for improving employer attractiveness. *International Journal of Organizational Analysis*, *22* (1), 48-60. https://doi.org/10.1108/IJOA-09-2011-0513

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, *37* (1), 39-67. https://doi.org/10.1177/0149206310388419

Creed, W. E. D., Gray, B., Höllerer, M. A., Karam, C. M., & Reay, T. (2022). Organizing for Social and Institutional Change in Response to Disruption, Division, and Displacement: Introduction to the Special Issue. *Organization Studies*, *43* (10), 1535-1557. https://doi.org/10.1177/01708406221122237

Da, Z., & Huang, X. (2020). Harnessing the Wisdom of Crowds. *Management Science*, *66* (5), 1847-1867. https://doi.org/10.1287/mnsc.2019.3294

Dirks, P. M., & Wouters, M. (2025). Performance measurement in dynamic environments. *Management Accounting Research*, *67*, 100941. https://doi.org/10.1016/j.mar.2025.100941

Dögl, C., & Holtbrügge, D. (2014). Corporate environmental responsibility, employer reputation and employee commitment: an empirical study in developed and emerging economies. *The International Journal of Human Resource Management*, *25* (12), 1739-1762. https://doi.org/10.1080/09585192.2013.859164

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, *101* (3), 621-640. https://doi.org/10.1016/j.jfineco.2011.03.021

Ehrhart, K. H., & Ziegert, J. C. (2005). Why Are Individuals Attracted to Organizations? *Journal of Management*, *31* (6), 901-919. https://doi.org/10.1177/0149206305279759

Einstein, A. (1946). Atomic Education Urged by Einstein. *The New York Times* (25.05.1946), p. 11.

European Commission (2025a). *Corporate sustainability reporting*. Retrieved July 6, 2025, from https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

European Commission (2025b). *Omnibus package*. Retrieved August 14, 2025, from https://finance.ec.europa.eu/news/omnibus-package-2025-04-01_en

Fauver, L., McDonald, M. B., & Taboada, A. G. (2018). Does it pay to treat employees well? International evidence on the value of employee-friendly culture. *Journal of Corporate Finance*, *50*, 84-108. https://doi.org/10.1016/j.jcorpfin.2018.02.003

Feder, M., & Weißenberger, B. E. (2021). Towards a holistic view of CSR-related management control systems in German companies: Determinants and corporate performance effects. *Journal of Cleaner Production*, *294*, 126084. https://doi.org/10.1016/j.jclepro.2021.126084

Figge, F., & Hahn, T. (2013). Value drivers of corporate eco-efficiency: Management accounting information for the efficient use of environmental resources. *Management Accounting Research*, *24* (4), 387-400. https://www.academia.edu/15971152/Value_drivers_of_corporate_eco_efficiency_Management_accounting_information_for_the_efficient_use_of_environmental_resources?auto=download

Garel, A., & Petit-Romec, A. (2021). Engaging Employees for the Long Run: Long-Term Investors and Employee-Related CSR. *Journal of Business Ethics*, *174* (1), 35-63. https://doi.org/10.1007/s10551-020-04572-8

Garvey, G. T., & Milbourn, T. T. (2006). Asymmetric benchmarking in compensation: Executives are rewarded for good luck but not penalized for bad. *Journal of Financial Economics*, *82* (1), 197-225. https://doi.org/10.1016/j.jfineco.2004.01.006

Gerged, A. M., Zahoor, N., & Cowton, C. J. (2024). Understanding the relationship between environmental management accounting and firm performance: The role of environmental innovation and stakeholder integration – Evidence from a developing country. *Management Accounting Research*, *62*, 100865. https://doi.org/10.1016/j.mar.2023.100865

Gibbons, R., & Henderson, R. (2012). Relational Contracts and Organizational Capabilities. *Organization Science*, *23* (5), 1350-1364. https://doi.org/10.1287/orsc.1110.0715

Golden, J., Mashruwala, R., & Pevzner, M. (2020). Labor adjustment costs and asymmetric cost behavior: An extension. *Management Accounting Research*, *46*, 100647. https://doi.org/10.1016/j.mar.2019.07.004

Gond, J.-P., Grubnic, S., Herzig, C., & Moon, J. (2012). Configuring management control systems: Theorizing the integration of strategy and sustainability. *Management Accounting Research*, *23* (3), 205-223. https://doi.org/10.1016/j.mar.2012.06.003

Grafton, J., & Mundy, J. (2017). Relational contracting and the myth of trust: Control in a co-opetitive setting. *Management Accounting Research*, *36*, 24-42. https://doi.org/10.1016/j.mar.2016.07.008

Graham, J. R., Grennan, J., Harvey, C. R., & Rajgopal, S. (2022). Corporate culture: Evidence from the field. *Journal of Financial Economics*, *146* (2), 552-593. https://doi.org/10.1016/j.jfineco.2022.07.008

Grégoire, D. A., ter Wal, A. L. J., Little, L. M., Bermiss, S., Kotha, R., & Gruber, M. (2024). Mobilizing New Sources of Data: Opportunities and Recommendations. *Academy of Management Journal*, *67* (2), 289-298. https://doi.org/10.5465/amj.2024.4002

Hales, J., Moon, J. R., & Swenson, L. A. (2018). A new era of voluntary disclosure? Empirical evidence on how employee postings on social media relate to future corporate disclosures. *Accounting, Organizations and Society*, *68-69*, 88-108. https://doi.org/10.1016/j.aos.2018.04.004

Holmstrom, B. (1979). Moral Hazard and Observability. *The Bell Journal of Economics*, *10* (1), 74. https://doi.org/10.2307/3003320

Holmstrom, B. (1982). Moral Hazard in Teams. *The Bell Journal of Economics*, *13* (2), 324. https://doi.org/10.2307/3003457

Hope, O.-K., Li, C., Lin, A.-P., & Rabier, M. (2021). Happy analysts. *Accounting, Organizations and Society*, *90*, 101199. https://doi.org/10.1016/j.aos.2020.101199

Jame, R., Johnston, R., Markov, S., & Wolfe, M. C. (2016). The Value of Crowdsourced Earnings Forecasts. *Journal of Accounting Research*, *54* (4), 1077-1110. https://doi.org/10.1111/1475-679X.12121

Johnstone, L. (2020). A systematic analysis of environmental management systems in SMEs: Possible research directions from a management accounting and control stance. *Journal of Cleaner Production*, *244*, 118802. https://doi.org/10.1016/j.jclepro.2019.118802

Liu, T., Makridis, C. A., Ouimet, P., & Simintzi, E. (2017). Is Cash Still King: Why Firms Offer Non-Wage Compensation and the Implications for Shareholder Value. *SSRN Electronic Journal.* Advance online publication. https://doi.org/10.2139/ssrn.3088067

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation. A 35-year odyssey. *The American Psychologist*, *57* (9), 705-717. https://doi.org/10.1037/0003-066X.57.9.705

Lueg, R., & Radlach, R. (2016). Managing sustainable development with management control systems: A literature review. *European Management Journal*, *34* (2), 158-171. https://doi.org/10.1016/j.emj.2015.11.005

Mahlendorf, M. D., Martin, M. A., & Smith, D. (2023). Innovative Data – Use-cases in Management Accounting Research and Practice. *European Accounting Review*, *32* (3), 547-576. https://doi.org/10.1080/09638180.2023.2213258

Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research*, *19* (4), 287-300. https://doi.org/10.1016/j.mar.2008.09.003

Marinescu, I., Chamberlain, A., Smart, M., & Klein, N. (2021). Incentives can reduce bias in online employer reviews. *Journal of Experimental Psychology: Applied*, *27* (2), 393-407. https://doi.org/10.1037/xap0000342

Mayer, C. (2021). The Future of the Corporation and the Economics of Purpose. *Journal of Management Studies*, *58* (3), 887-901. https://doi.org/10.1111/joms.12660

Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, *31*, 45-62. https://doi.org/10.1016/j.mar.2016.02.001

Pearson, C. M., & Clair, J. A. (1998). Reframing Crisis Management. *The Academy of Management Review*, *23* (1), 59. https://doi.org/10.2307/259099

Ranta, M., & Ylinen, M. (2024). Employee benefits and company performance: Evidence from a high-dimensional machine learning model. *Management Accounting Research*, *64*, 100876. https://doi.org/10.1016/j.mar.2023.100876

Sanati, A. (2024). How Does Labor Mobility Affect Corporate Leverage and Investment? *Journal of Financial and Quantitative Analysis*, 1-39. https://doi.org/10.1017/S0022109024000115

Tang, V. W. (2018). Wisdom of Crowds: Cross-Sectional Variation in the Informativeness of Third-Party-Generated Product Information on Twitter. *Journal of Accounting Research*, *56* (3), 989-1034. https://doi.org/10.1111/1475-679X.12183

Teoh, S. H. (2018). The promise and challenges of new datasets for accounting research. *Accounting, Organizations and Society*, *68-69*, 109-117. https://doi.org/10.1016/j.aos.2018.03.008

UN (2021). *On climate and health*. Retrieved July 5, 2025, from https://www.un.org/sites/un2.un.org/files/2021/08/fastfacts-health.pdf

van der Vegt, G. S., Essens, P., Wahlström, M., & George, G. (2015). Managing Risk and Resilience. *Academy of Management Journal*, *58* (4), 971-980. https://doi.org/10.5465/amj.2015.4004

Wenzel, M., Stanske, S., & Lieberman, M. B. (2021). Strategic responses to crisis. *Strategic Management Journal*, *42* (2), 7-18. https://doi.org/10.1002/smj.3161

WHO (2023). *Climate change and noncommunicable diseases: connections*. Retrieved July 5, 2025, from https://www.who.int/news/item/02-11-2023-climate-change-and-noncommunicable-diseases-connections