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Skills and Stress of Management Accountants in the Firm

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If you're going through hell, keep going.

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Content Overview

Acknowledgements..... V

Content Overview.....VIII

Table of ContentsIX

List of Tables.....XIII

List of Figures XV

List of Abbreviations.....XVI

A Introduction..... 1

**B Management Accountants’ Skills and Performance Across Different
Hierarchy Levels 13**

**C Perceived Skill Gaps as Hindrance Stressors – What Happens When You
Don’t Have What It Takes 53**

**D How Leader Stressor Appraisals Translate into Follower Stressor Appraisals
– A Crossover Perspective..... 83**

E Conclusion 125

F References 143

Appendices 162

Table of Contents

Acknowledgements	V
Content Overview	VIII
Table of Contents	IX
List of Tables	XIII
List of Figures	XV
List of Abbreviations	XVI
A Introduction	1
A.1 Motivation.....	1
A.2 Research Objectives.....	5
A.2.1 Research objective one: Exploring the skills controllers in a firm possess and how they relate to their job performance across hierarchy levels.	5
A.2.2 Research objective two: Investigating the cognitive appraisals of perceived skill gaps as a stressor, and how this impacts controllers’ turnover intention.	6
A.2.3 Research objective three: Assessing how the cognitive appraisals of workload as a stressor can cross over from leaders to followers, and what this means for controllers’ job satisfaction.	8
A.3 Research Design.....	9
A.4 Organization of the Dissertation	12
B Management Accountants’ Skills and Performance Across Different Hierarchy Levels	13

B.1	Introduction.....	14
B.2	Theoretical Background.....	18
B.2.1	Human Capital, Skills, and Promotions	18
B.2.2	Management Accountants’ Skills	21
B.3	Methodical Specifics for Chapter B.....	26
B.3.1	Pre-Study.....	26
B.3.2	Survey	29
B.3.3	Measures	32
B.3.4	Analytical Strategy.....	34
B.3.5	fsQCA	36
B.4	Findings.....	37
B.5	Discussion.....	46
B.5.1	Theoretical Contributions.....	47
B.5.2	Practical Implications.....	49
B.5.3	Limitations and Future Research Directions.....	51
C	Perceived Skill Gaps as Hindrance Stressors – What Happens When You Don’t Have What It Takes	53
C.1	Introduction.....	54
C.2	Theory Development	56
C.2.1	The Challenge-Hindrance Stressor Framework	56
C.2.2	Perceived Skill Gaps as a Stressor	58
C.2.3	On the Relationship between Stress, Satisfaction, and Turnover Intention	62
C.3	Methodological Specifics of Chapter C.....	63

C.3.1	Structural Equation Model	68
C.4	Findings.....	70
C.4.1	Main Results.....	70
C.5	Discussion and Conclusion	74
C.5.1	Theoretical Implications.....	77
C.5.2	Practical Implications	79
C.5.3	Limitations and Future Research Directions	80
D	How Leader Stressor Appraisals Translate into Follower Stressor Appraisals	
	– A Crossover Perspective.....	83
D.1	Introduction.....	84
D.2	Theory Development	87
D.2.1	The Transactional Theory of Stress and Appraisal	87
D.2.2	Crossover and Social Contagion	90
D.2.3	The Role of LMX.....	94
D.3	Methodological Specifics of Chapter D.....	98
D.3.1	Sample and Procedure	98
D.3.2	Measures	99
D.3.3	Analytical Strategy	104
D.4	Findings.....	105
D.4.1	Main Results.....	105
D.5	Discussion and Contributions	115
D.5.1	Theoretical Contributions.....	118
D.5.2	Managerial Implications.....	120
D.6	Conclusion, Limitations, and Future Research Directions	122

E	Conclusion	125
E.1	Synopsis and Contributions	125
E.1.1	Research objective one.....	126
E.1.2	Research objective two	128
E.1.3	Research objective three	131
E.2	General Limitations	133
E.2.1	Theoretical Limitations	133
E.2.2	Methodological Limitations	136
E.3	Future Research	139
F	References	143
	Appendices	162
	Appendix A: Questionnaire/Survey Instruments Used in 2019	162

List of Tables

Table B-1 Descriptives and Pairwise Correlations	32
Table B-2 Latent Constructs and Corresponding Items	35
Table B-3 Calibration of Fuzzy Variables	39
Table B-4 Configurations for Non-Management Controllers	41
Table B-5 Configurations for Lower Middle Management Controllers	42
Table B-6 Configurations for Upper Middle Management Controllers.....	44
Table B-7 Configurations for Top Management Controllers.....	45
Table C-1 Descriptives and Pairwise Correlations	64
Table C-2 Latent Constructs and Corresponding Items	68
Table C-3 Goodness of Fit Statistics.....	69
Table C-4 Coefficients of the Structural Mediation Model for Perceived Current Skill Gaps.....	71
Table C-5 Coefficients of the Structural Mediation Model for Perceived Future Skill Gaps.....	73
Table D-1: Latent Constructs and Corresponding Items.....	102
Table D-2 Nested Models	104
Table D-3 Descriptives and Pairwise Correlations	107
Table D-4 Coefficients of the Structural Mediation Model	109

Table D-5 Path Coefficients of the Structural Mediation Model including Leader Workload and Appraisal.....	110
Table D-6 Path Coefficients of the Structural Mediation Models for Low and High LMX Subgroups.....	113
Table D-7 Path Coefficients of the Structural Moderated Mediation Model.....	115

List of Figures

Figure B-1 Management Accounting Skill Sets.....	28
Figure B-2 Hierarchy Levels.....	38
Figure C-1 Hypothesized Path Model.....	63
Figure D-1 Hypothesized Path Model.....	97

List of Abbreviations

α	Cronbach's Alpha
AIC	Akaike's Information Criterion
APAC	Asia-Pacific
App./Appr.	Appraisal
AVE	Average Variance Extracted
β	Beta (Factor Loading)
BIC	Bayes' Information Criterion
BU	Business Unit
γ	Gamma (Overall Effect Size)
γ_D	Gamma (Direct Effect)
γ_I	Gamma (Indirect Effect)
γ_T	Gamma (Total Effect)
cf.	conferatur (refer to)
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CFO	Chief Financial Officer
CHM	Challenge-Hindrance Model of Stress

CHSF	Challenge-Hindrancel Stressor Framework
COR	Conservation of Resources
CR	Composite Reliability
Δ	Delta (Difference)
df	Degrees of Freedom
EFA	Exploratory Factor Analysis
e.g.	exempli gratia (for example)
et al.	et alii (and others)
FMCG	Fast-moving Consumer Goods
fsQCA	fuzzy-set Qualitative Comparative Analysis
HR	Human Resources
i.e.	id est (that is)
IMP	Impression Management
LatAm	Latin America
LMX	Leader-Member Exchange
LTI	Long-term Incentive
MEA	Middle East/Africa
Mgmt.	Management
n	Number

p	p-value
p.	Page
pp.	Pages
QCA	Qualitative Comparative Analysis
®	Registered Trademark
RMSEA	Root Mean Squared Error of Approximation
SAT	Satisfaction
SEM	Structural Equation Model
SME	Small and Medium-sized Enterprises
SRMR	Standardized Root Mean Squared Residual
STI	Short-term Incentive
SVP	Senior Vice President
SWL	Supervisor Workload
TLI	Tucker-Lewis Index
VP	Vice President
WL	Workload
χ^2	Chi-squared

A Introduction

A.1 Motivation

Tempora mutantur, et tabularii mutantur in illis.¹

Controllers² are a vital and indispensable part of every firm's body of employees (Goretzki & Messner, 2019). Yet, controllers differ from other employees in many regards. While their self-concept has changed drastically from a bean counter role to a more business-oriented, strategic role that actively takes part in decision-making processes (Byrne & Pierce, 2007; Goretzki & Pfister, 2022; Maas & Matejka, 2009), other factors like digitalization, globalization and an ever more complex environment firms operate in change the tasks management accountants must fulfil – and, consequently, the skills required to do so. While the discussion about management accounting skills has so far largely revolved around the education of controllers, employers' expectations, or professional bodies (e.g., Arquero Montaña, Donoso Anes, Hassall, & Joyce, 2001), in this dissertation, I will explore which skills controllers in a large firm possess, and how different configurations of skill sets relate to their performance. Focus will be laid on the differences between hierarchy levels: high-performing controllers will acquire different skills throughout the course of their careers, thus signalling their suitability for higher positions in the corporate hierarchy (cf. Grabner & Moers, 2015), and, ultimately, qualifying for CFO positions. I further explore how the different configurations of skills acquired by controllers relate to their career trajectories. While I argue that there exists no uniform controller, I show that different management accountants tend to specialize at first but become generalists at the end of their careers.

¹ Times are a-changing, and controllers within them.

² The terms “controller” and “management accountant” or, respectively, “controlling” and “management accounting” will be used interchangeably in this dissertation (e.g., Hartmann & Maas, 2011).

However, not every controller will be equipped with the skills they need to perform well in their job – a type of mismatch commonly referred to as skill gap. Such skill gaps have received attention in the literature on human capital since they are generally detrimental to firm productivity and increase employee turnover (Brunello & Wruuck, 2021). Firms therefore aim to improve match quality, i.e., the fit between employees' skills and the requirements of their job (cf. Weller, Hymer, Nyberg, & Ebert, 2019). Consequently, firms benefit from ensuring that employees acquire the skills they need and are promoted, or else, that they leave the company and are replaced by better fits (Chan, 2018; Grabner & Moers, 2013). While this 'up-or-out'-mentality has become an established way of personnel selection (cf. Waldmann, 1990), the war for talent (Michaels, Handfield-Jones, & Axelrod, 2001) is raging on: As estimated by De Smet, Dowling, Mugayar-Baldocchi, and Schaninger (2022), the number of job openings is almost twice as high as the number of new hires. At the same time, employees are increasingly seeking jobs that provide them with the opportunity to fulfil their potential, and companies struggle to retain well-trained and motivated employees. Employee turnover intention, i.e., their willingness to quit their job, has therefore become a concern for companies, not only because it involves losing specialized firm-specific and, thus, valuable human capital, but also because hiring and training new employees is costly (e.g., Sieberts & Zubanov, 2009). As laid out by Bechtoldt (2018), this problem is particularly relevant for controllers because they regard controlling careers as a stepstone for higher management careers, and because controlling departments struggle to hire qualified management accountants (which, in Germany, is commonly referred to as "Fachkräftemangel", i.e., lack of skilled workforce). Consequently, I argue that companies should invest in training their employees to not lose them to competitors. One main reason for employees to leave their jobs is stress (Podsakoff, LePine, & LePine, 2007). I therefore ask how controllers perceive that they lack the skills they need and, based on the challenge-hindrance stressor framework (CHSF; LePine, 2022), describe that such perceived skill gaps on an individual level can be regarded as stressors. Individuals suffer from stress when they are

not sufficiently equipped with the resources to cope with a certain demand, or stressor (Lazarus & Folkman, 1984); in my case, the skills necessary for fulfilling a management accountant's day-to-day job. If furthermore employees do not expect their lack of skills to improve now and in the future, they may perceive this as an obstacle to their personal or professional growth – commonly referred to as a hindrance appraisal of a stressor. This subconscious evaluation of perceived skill gaps will amplify their negative effect on employees' satisfaction (Webster, Beehr, & Love, 2011) and thus increase employees' turnover intention (Podsakoff et al., 2007).

Arguably, however, stress does not only happen in isolation. Management accountants find themselves surrounded by others who suffer from similar stressors, as well, like their supervisors. Particularly in the case of workload, both leaders and followers can be assumed to be equally affected (Karasek, 1979; Ma, Peng, & Wu, 2021). However, the literature on stress has scarcely described supervisors and their relationship towards their subordinates (Harms, Credé, Tynan, Leon, & Cheung, 2017). This is surprising insofar as supervisors and subordinates usually are in close contact with each other and will therefore be exposed to each others' feelings, sentiments, and bodily expressions, thus noticing whether the other is subject to stress. Imagine a person yawning: If you are close to the person both geographically and emotionally, you will begin to yawn yourself. A similar effect occurs when employees perceive their supervisors' stressor appraisals. Since stressor appraisals elicit emotions (Scherer, Schorr, & Johnstone, 2001), they are visible towards others. Two processes enable the crossing over of appraisals (cf. Bakker & Demerouti, 2013; Westman & Etzion, 1999): Subconscious emotional contagion occurs when people pick up on the emotional signals of others without realizing it. For example, if someone is feeling sad, they may unknowingly communicate this emotion to others around them, leading them to also feel sad. This can happen through nonverbal cues such as body language, tone of voice, and facial expressions (Hatfield, Cacioppo, & Rapson, 1993). Conscious empathic reactions, on the other hand, occur when people intentionally try to

understand and connect with the emotional experiences of others – such as stressor appraisals. This involves putting oneself in another's shoes and experiencing the emotions or stress they are feeling (Shamay-Tsoory, Aharon-Peretz, & Perry, 2009). Conscious empathic reactions can lead to increased understanding and empathy towards others (Decety & Jackson, 2006). Crossover theory suggests that emotional contagion and empathic reactions can occur simultaneously, and that they can influence each other. For example, if someone is consciously empathizing with another person, it may also increase their susceptibility to subconscious emotional contagion. Especially in the case of leader-follower relationships, I argue that such crossover processes occur and are amplified if leaders and followers maintain a good relationship with each other, i.e., if their level of Leader-Member Exchange (LMX) is high (Graen & Uhl-Bien, 1995). The crossover of stressor appraisals bears important consequences for controllers: Especially when the crossover occurs from leaders to followers (Anderson, Keltner, & John, 2003), and when hindrance appraisals cross over to followers, their own hindrance appraisals are amplified and will thus lower their job satisfaction – which may result not only in increased turnover (Podsakoff et al., 2007), but also in unfavourable health outcomes such as burnout (e.g., Gerich, 2017).

Overall, this dissertation aims to provide insights into the work environment and very lives of controllers in a firm. Not only will I show which skills they are endowed with or not, but also which consequences of possessing and not possessing certain relevant skills ensue. Regarding stress both from an individual and a social-contextual perspective will shed light on factors influencing controllers' job satisfaction. Together with performance and turnover intention, which I use as my dependent variables, I look at determinants of every employee's well-being in the work context – not least because they are often interrelated (e.g., Chen, Ployhart, Thomas, Anderson, & Bliese, 2011). From a philanthropic perspective, investigating factors that can affect these variables provides a key motivation for my dissertation. I ultimately aim to

provide recommendations both for researchers and practitioners interested in improving controllers' work environment and lives.

A.2 Research Objectives

A.2.1 Research objective one: Exploring the skills controllers in a firm possess and how they relate to their job performance across hierarchy levels.

Management accountants play a crucial role in any company by ensuring that managers make informed and rational decisions that create value for the firm (Weber & Schäffer, 2022). However, the role of management accountants has evolved: They increasingly engage in strategic decision-making and require skills beyond technical-financial duties (Baxter & Chua, 2008). Acquiring the necessary skills is essential for management accountants to perform well in their roles and progress to higher hierarchical levels (Grabner & Moers, 2013; 2015). To ensure a good match between employees and their new positions (Weller et al., 2019), it is important for those who are promoted to higher hierarchical levels to possess the necessary skill set. Failure to do so can lead to a decrease in organizational performance (ibid.; Chan, 2018; Grabner & Moers, 2013). However, we know little about which skills management accountants in a firm actually possess, and much less which skills they require. Aside from Rouwelaar et al. (2021), I am not aware of any study that has measured the skills of management accountants within a firm. One research objective of chapter B is therefore to provide a basis for the measurement of controller skills within a firm by introducing a framework of six controller skill sets derived from a Delphi study I co-conducted (Schäffer et al., 2019).

Not only because of an exploratory interest, but also because having the 'right' skills is determining controllers' human capital and thus, value added for the firm (Ployhart et al., 2014), I also aim to investigate which configurations of skills lead to above-average performance of management accountants. I argue that there is not 'the one' controller, but that management

accounting careers differ with regard to combinations of skills that equally lead to high performance. This equifinality stance, i.e., different combinations of factors equally leading to a certain outcome (v. Bertalanffy, 1972; Gresov & Drazin, 1997), has received some attention in the human capital literature but remains disputed (Ployhart & Moliterno, 2011). Another research objective of this chapter is therefore to investigate which configurations of skill sets equally lead to high performance of management accountants.

Lastly, since I am addressing the promotion literature, I ask which skills high performing controllers acquire over the course of their careers. So far, little is known about whether controllers are generalists or specialists, and how their endowment with skills develops over time. Unlike Datta and Iskandar-Datta (2014) who distinguish generalist from specialist CFOs, I aim to investigate whether controllers specialize on lower hierarchy levels or whether and when they become generalists – an assumption inherent in Baxter and Chua’s (2008) study.

A.2.2 Research objective two: Investigating the cognitive appraisals of perceived skill gaps as a stressor, and how this impacts controllers’ turnover intention.

Stress in the workplace has traditionally been considered harmful for both individuals and organizations. However, recent research has shown that stress can have positive and negative aspects depending on how it is appraised (LePine, 2022; Webster et al., 2011). According to the challenge-hindrane stressor framework, if employees appraise a stressor as challenging, it can lead to positive outcomes such as personal growth, work accomplishment, job satisfaction, and better health outcomes. However, if the stressor is appraised as a hindrance, it can lead to negative outcomes like burnout (Gerich, 2017), psychological withdrawal, and turnover intention (Podsakoff et al, 2007).

In an era of quiet quitting, where employees and, in particular, controllers, are more likely to be absent and retention rates are lower (e.g., Bechtoldt, 2018; De Smet et al., 2022), it

is crucial to identify the factors that lead to employee turnover and understand the mechanisms behind why they want to leave their jobs. It is in the interest of companies to retain their employees as they are a vital component of their success, and their knowledge, skills, abilities, and other traits constitute the company's human capital, thus providing a sustainable competitive advantage (Barney, 1991; Becker, 1964; Ployhart & Moliterno, 2011).

In the previous chapter B, I show which skills constitute above-average employee performance and, consequently, firm performance, thus creating sustainable competitive advantages. However, the consequences of not being equipped with the required skills for one's job have only inconsistently been described in the literature on human capital and management accounting. The research objective of chapter C is therefore to explore the consequences of not having the skills required to perform one's job. I argue that a lack of required skills, or 'skill gap,' (McGuinness, Pouliakas, & Redmond, 2017) can cause stress and entice employees to quit. Literature has focused on firm-level and economic outcomes of skill gaps, finding that a lack of required skills can lead to lower productivity and higher turnover (Brunello & Wruuck, 2021). On an individual level, however, a lack of skills relevant to the job may be perceived as stressful and harmful, as it can elicit strain when individuals do not possess the skills to fulfil their day-to-day job. In addition, if employees perceive a lack of skills as thwarting their personal goals (i.e., they appraise this stressor as a hindrance), their level of dissatisfaction will be further amplified, as suggested by LePine (2022). This can lead to higher turnover intention (Podsakoff et al., 2007). I contend that perceived skill gaps can be seen as hindrance stressors, impeding controllers from achieving their goals and reducing their satisfaction, ultimately prompting them to quit their jobs. I base my theory on human capital literature (Ployhart et al., 2014), the challenge-hindrance model of stress (LePine, 2022), and conservation of resources theory (Hobfoll, 1989).

A.2.3 Research objective three: Assessing how the cognitive appraisals of workload as a stressor can cross over from leaders to followers, and what this means for controllers' job satisfaction.

Drawing on the theoretical foundations in the previous chapter, in chapter D, I focus on workload as a stressor that both leaders and followers are subject to. Although scholars have developed a roadmap to assess the antecedents and consequences of stress, there is a need for more research on the factors that influence the stressor-appraisal relationship. Factors like goal orientation (Ma et al., 2021), task efficacy (Liu & Li, 2016), job control, social support (Gerich, 2017; Gerich & Weber, 2019), and charismatic leadership (LePine et al., 2016) have been found to moderate this relationship. There is, however, little research on the role of leader-follower relationships in stress processes. Therefore, the research objective of chapter D is to examine how leaders' appraisal of stressors influences their followers' appraisal of the same stressor. I propose that stressor appraisals are expressed in facial, vocal, or behavioral cues that can be observed by followers, leading to a crossover effect where the leader's appraisal of a stressor is transmitted onto the follower (cf. Bakker & Demerouti, 2013; Westman & Etion, 1999). This chapter aims to shed light on this crossover effect and its implications for leaders and followers in the context of the controlling department of a firm. I ultimately aim to investigate the potential negative effects of such crossover effects on controllers' job satisfaction.

My research suggests that, when leaders' stressor appraisals are visible to their followers, and followers perceive these appraisals, a crossover process takes place. I propose that the visibility and susceptibility of these appraisals are influenced by the quality of the leader-member exchange (LMX), which refers to the quality of the relationship between leaders and followers (Graen & Uhl-Bien 1995; Janssen & van Yperen, 2004). LMX is characterized by mutual trust, emotional and cognitive support, and access to resources, among other positive outcomes. I build on this understanding and predict that the better the LMX, the more appraisals

are shown and observed, leading to crossover effects. Specifically, I hypothesize that leaders challenge appraisals will cross over and, thus, elicit a similar challenge appraisal of the same stressor in their followers, if the relationship between them is better – and vice versa. This prediction has important implications, e.g., that if leaders transmit their hindrance appraisal to followers, high levels of LMX might exacerbate this process and lead to dissatisfaction and lower performance. Consequently, LMX could also affect followers in a detrimental way. Investigating this ‘dark side’ of LMX has yet received only little attention (Harris & Kacmar, 2006).

A.3 Research Design

I investigate the research objectives outlined above by conducting three quantitative studies. The empirical data upon which I base my analyses was collected within the scope of a larger research project I conducted in the autumn of 2019 in cooperation with a large German multinational company specializing in fast moving consumer goods. The single company setting ensures that certain organization-specific factors like, e.g., hierarchy levels or corporate culture, can be assumed to be homogeneous across the population. Furthermore, respondents adhere to a common organization-specific language which ensures comparability. However, there exist limitations of single company studies which are discussed in detail in the respective subsections of chapters B to D as well as in Chapter E.

The research project was discussed upfront with several employees of the company. In the discussions, representatives of the company noted that a Spanish translation would be beneficial since many controllers were based in Spanish-speaking countries. It was implemented using a mouseover translation. The company also provided me with complementary archival data from its HR system which I used as control variables in my analyses. Four employees of the company pre-tested the survey; their responses were subsequently excluded from further analyses.

The questionnaire I sent out to all 915 controllers in the company is based in part on items used in the previous waves of the research project conducted in 2016 and 2013 (cf. Ballmann, 2022; Bechtoldt, 2018; Brill, 2017), in part on a Delphi study conducted at the Institute of Management and Controlling (Schäffer, Brückner, Fiala, & Rester, 2019), and is complemented by items relating to the research questions I intend to answer. The responses to this questionnaire have not been used in any prior research project and, thus, provided me with a unique data set.

In developing the questionnaire, I took several measures to ensure that response biases were kept to a minimum. All items were randomized, and related constructs were asked on different pages. I also asked the impression management construct (Paulhus, 1986) to control for social desirability bias, and used different Likert scales to reduce fatigue bias. Before beginning the survey, participants were assured that their answers be treated anonymously, that data would be analyzed only in an aggregated fashion, and that neither colleagues nor supervisors would get access to their data. Furthermore, participants were notified that they could skip all questions and exit the survey at any time. These measures reduce common method bias *ex ante* (Chang, van Wittelostuijn, & Eden, 2020). Participants could further add comments at the end of the questionnaire.

The questionnaire was implemented using the software Unipark®. In October 2019, every employee received an email with an invitation and a personalized access code to the survey, and both representatives of the company and I sent out regular reminders. The survey remained in the field for six weeks. Eventually, 536 of the 915 controllers of the company filled in the questionnaire, which corresponds to a respondent rate of 58.6%. Further details of the methodology can be found in the respective chapters.

Chapter B answers the question which skills controllers in a firm possess across different hierarchy levels, how these relate to their job performance, and whether controllers

specialize or become generalists over the course of their careers. A skills framework based on the WHU Delphi study conducted in the spring of 2019 (Schäffer et al., 2019) is introduced, and the validity of the constructs I subsequently use is examined by carrying out exploratory and confirmatory factor analyses. I rely on fuzzy-set Qualitative Comparative Analyses (*fsQCA*, Pappas & Woodside, 2021; Ragin, 2014) to answer the research questions. *FsQCA* allows for the examination of complex configurations of certain variables, in my case, skills, and how these relate to an outcome variable of interest, in my case, performance (Misangyi, Greckhamer, Furnari, Fiss, Crilly, & Aguilera, 2017) This approach enables me to assess causal complexity along three dimensions which are equally important to answer my research questions: equifinality, conjunctural causation, and causal asymmetry.

In Chapter C, I ask what happens when controllers do not possess the skills that they need to fulfil their day-to-day tasks. I introduce two measures of self-reported skill gaps, whether and how they are appraised as stressors, and how this relates to controllers' turnover intention. After a thorough assessment of construct validities, I use mediated structural equation models to test my hypotheses. Structural equation models allow for the simultaneous analysis of latent variables and are often used in psychological research (MacCallum & Austin, 2000). Specifically, I use mediated structural equation models following the approach of Iacobucci (2008).

In Chapter D, I show that stressor appraisals do not happen in isolation. I analyze how stressor appraisals cross over from leaders to followers, and how this crossover process is amplified by leader-member exchange, i.e., the quality of the relationship between leaders and followers. After assessing the validity of the constructs used in the study, I employ structural equation models to test my hypotheses. Since I expect LMX to amplify the hypothesized crossover effect, I employ moderated mediated structural equation models following Klein and Moosbrugger's (2000) recommendations.

A.4 Organization of the Dissertation

My dissertation is structured as follows. Chapter A provides an outline of the research objectives, methodology, and structure of the dissertation. The following chapters B to D comprise the main part of the dissertation, each treating one distinct research objective. I will illustrate possible links and interrelations between the chapters throughout the course of the dissertation.

Specifically, Chapter B presents my findings on skill configurations leading to high performance under the title “Management Accountants’ Skills and Performance Across Different Hierarchy Levels”. In the empirical study in Chapter C, I introduce two measures of skill gaps as stressors and their relationship to turnover intention, titled “Perceived Skill Gaps as Hindrance Stressors – When You Don’t Have What It Takes”. Chapter D, titled “How Leader Stressor Appraisals Translate into Follower Stressor Appraisals – A Crossover Perspective”, provides an empirical study that illustrates the relationship between leader and follower stressor appraisals with a particular focus on the role of leader-member exchange. The three chapters each begin with an overview of the relevant literature from which hypotheses or research questions are derived. Afterwards, I will describe the respective methodology I used, and the results of my analyses. The findings are then discussed; I elaborate on the contributions to both academia and practice and point out limitations as well as future research directions.

In Chapter E, I conclude the dissertation. After a thorough discussion of the main findings of the respective chapters, I lay out the overall contributions to the academic literature, provide an overview of their implications for practitioners, and assess possible limitations as well as potential avenues for future research.

B Management Accountants’ Skills and Performance Across Different Hierarchy Levels³

Abstract

In this chapter of my dissertation, I investigate which skills management accountants at different hierarchy levels require for high performance. Using an extensive pre-study, I test a framework of six different management accounting skill sets. Afterwards, I conduct a field study with a multinational firm and explore which skill profiles are associated with high performance. Following the management accounting literature on promotion decisions and building on human capital theory, I expect and find that at the beginning of their careers, high-performing management accountants have highly specialized skill profiles. I further find that for management accountants in upper management positions, high performance requires a highly differentiated skill profile. Interestingly, I find that management accountants at medium hierarchy levels tend to have even more specialized skill profiles, indicating that as they progress, management accountants follow a path of increased specialization before developing a more generalist skill profile that qualifies them for a CFO role. My results highlight the importance of measuring management accounting skills in a company across hierarchy levels. Implications for research and practice are discussed.

³ This chapter is based on Rester, F., Reimer, M. & Schaupp, D. (2023). Management Accountants’ Skills and Performance Across Different Hierarchy Levels. Unpublished working paper. Preliminary findings have been presented at the 45th Annual Congress of the European Accounting Association 2023 in Espoo/Helsinki, Finland. I am grateful for helpful comments by Evelien Reusen as well as participants of research workshops at the IMC.

B.1 Introduction

Management accountants⁴ are a vital part of any company since they ensure that managers make rational decisions, thus creating value for the firm. While this broad description encompasses a variety of tasks, scholars have described that the role of management accountants and their self-concept has changed profoundly (Goretzki & Pfister, 2022). Management accountants have a fiduciary responsibility to oversee their managers, but they also increasingly engage in strategic decision-making themselves (Chang, Ittner, & Paz, 2014; Hartmann & Maas, 2011; Maas & Matejka, 2009). Furthermore, rapid technological change such as the emergence of data analytics technology and artificial intelligence enable management accountants to extend their roles beyond mere technical-financial duties (Baxter & Chua, 2008). Aside from the role conflicts resulting from these developments (Maas & Matejka, 2009), the tasks that management accountants must fulfill in their jobs have changed, and this implies changing skill requirements as well. Management accountants will only be able to perform well if they possess the skills required for their respective tasks, and only then will they be promoted. In particular, employees who are promoted to higher hierarchical levels must fit the skill requirements of their new position to ensure match quality – otherwise, they will be promoted into positions that they are not fit for, consequently lowering organizational performance (Chan, 2018; Grabner & Moers, 2013; Weller, Hymer, Nyberg, & Ebert, 2019). Thus, employees have an incentive to acquire different skills over the course of their careers to signal to their supervisors that they can perform well in a higher position, too. Consequently, management accountants will acquire human capital as accumulated skills because it increases their promotion probabilities (Grabner & Moers, 2015). Such an acquisition of skills can predict promotions especially well if the nature of the tasks changes – such as being promoted into higher positions that

⁴ As is custom in Germany, I use the terms “management accountant” and “controller” interchangeably.

involve assuming leadership responsibilities. Because management accountants that are promoted into top-level management positions typically serve as CFOs (as reflected in My sample), the literature on CFOs and management can be informative for My study. As described by Baxter and Chua (2008), referring to Birkett's (2002) study on management accounting competencies, becoming a CFO (as a top-level management accountant) entails the acquisition of interpersonal, situational, and political competencies alongside technical skills. Management scholars have described at length that executives must acquire certain skills to be successful. In the case of CFOs, Datta and Iskandar-Datta (2014) differentiate between specialist and generalist CFOs, i.e., such that possess specialized accounting skills, and such that are experienced in general management. Since management accountants can take on different roles within a firm, i.e., scorekeeper or business partner roles, they fulfil different tasks and sometimes even assume dual responsibilities (Maas & Matejka, 2009). Much like specialist and generalist CFOs, these management accounting roles differ in the breadth of their scope: While scorekeeper management accountants typically ensure the proper functioning of reporting and budgeting processes within a firm and thus are more specialized, business partner management accountants as generalists are more involved in strategic decision making and require communication and management skills, among others (e.g., Fourné, Guessow, & Schäffer, 2018).

However, when regarding the tasks that define management accountants' roles (e.g., Fourné et al., 2018; Maas & Matejka, 2009), we cannot clearly distinguish between generalist or specialist controllers, or between management accountants on different hierarchy levels. I therefore argue that an investigation of management accounting skills across hierarchy levels rather contributes to extending our understanding of the profession. Contrary to Datta and Iskandar-Datta (2014), who use different university degrees as proxies for the specificities of the human capital of the CFOs they surveyed, I argue that an investigation of specific skills as

measures of human capital provides more nuanced insights, especially when regarding management accountants' career trajectories.

Not least, researchers in the field of human capital have stressed the importance of both firm-specific and general skills as sources of a sustainable competitive advantage (Becker, 1964; Ployhart & Moliterno, 2011). Taken together, an examination of skills in the field of management accounting can provide insights into what constitutes management accountants' performance and, consequently, their significance for a firm across different hierarchy levels.

Basing my study on human capital and management accounting literature, I therefore first introduce a framework for measuring management accounting skills derived from an extensive pre-study involving practitioners and scholars from the field of management accounting (Schäffer, Brückner, Fiala, & Rester, 2019). I then employ fuzzy-set qualitative comparative analysis (Pappas & Woodside, 2021; Ragin, 2008) to investigate which configurations of skill sets lead to above-average performance in management accountants on different hierarchy levels. My results reveal that indeed, the skills required from management accountants change over the course of their careers. While high performing management accountants without leadership responsibilities tend to specialize, lower middle management accountants specialize even further. More senior controllers acquire more diverse and broad sets of skills throughout their careers, while top-level executives have acquired the most complex sets of skills, ultimately becoming generalists.

I thus complement the management accounting literature in several ways. Firstly, the study contributes to the existing literature on human capital by highlighting the importance of management accounting skills as a key component of the human capital of a firm. Human capital refers to the knowledge, skills, abilities, and other traits of employees that contribute to the overall performance and competitiveness of an organization (Barney, 1991; Becker, 1964; Ployhart & Moliterno, 2011). In the context of the finance function, management accounting

skills are a vital component of human capital, as they are essential for the effective management of financial resources and the provision of accurate and timely financial information to decision-makers, thus ensuring that companies sustain their competitive advantages. Showing that different combinations of skill sets are related to management accountants’ performance illustrates their importance in the context of human capital. Secondly, I advance our understanding of factors relating to the performance of management accountants by providing evidence on the equifinality of skill configurations (Gresov & Drazin, 1997). This complements the ongoing discussion in human capital literature on whether ‘more is better’ (Ployhart, Nyberg, Reilly, & Maltarich, 2014), which is not necessarily the case: My findings show that different configurations of skill sets can equally lead to above-average performance. Furthermore, I enhance the literature on management accounting skills by providing a skills framework that is derived from an extensive pre-study involving management accounting practitioners and academics alike. I thus aim to consolidate the academic community’s understanding of skills across the six dimensions I surveyed. While there does not seem to be a consensus about which framework to use (Birkett, 2002; IMA, 2019; Rouwelaar, Schaepkens, & Widener, 2021; Xydias-Lobo, Tilt, & Forsaith, 2004, among others), I hope that the introduction of my framework furthers the discussion of skills across the academic community and practitioners alike. Lastly, I provide insights into the specific skills that are required for management accountants to perform effectively in their roles. I thus shed light on the career trajectories of management accountants across organizational hierarchy levels. My findings are useful for management accounting practitioners, educators, and researchers alike, and will help design training programs, curricula, and recruitment strategies that focus on developing these specific skills, both within and outside a company. This will help employers develop their employees’ skills in a more targeted way so that higher match quality ensues (Weller et al., 2019), thus reducing involuntary turnover and improving overall organizational performance. Furthermore, providing an objective assessment of management accountants’ skills can provide practitioners with performance information that

improves the sorting role of promotion decisions, thus lowering the risk for organizational inefficiencies like the Peter principle (Chan, 2018; Grabner & Moers, 2013).

The rest of the chapter is structured as follows: After an extensive review of the literature on human capital and skills with a focus on management accounting skills, I derive my research questions. I then elaborate on the skill framework described in my pre-study and describe the methodology with which I test my hypothesis. After a thorough discussion of the results, I conclude by discussing the implications of this chapter for academia and practice and providing directions for future research.

B.2 Theoretical Background

B.2.1 Human Capital, Skills, and Promotions

Human capital scholars suggest that the knowledge, skills, abilities, or other traits (KSAOs; I henceforth use the term ‘skills’) can provide a sustainable competitive advantage for a firm (Barney, 1991; Becker, 1964). Following the definition lined out by Ployhart et al. (2014), human capital can be regarded as those skills that are relevant for economic outcomes; on an individual level; economic outcomes are derived from superior employee performance. This applies to the finance function as well. When speaking about a management accountant’s performance, one can broadly distinguish between costs and drivers of the management accountant’s contribution to the firm’s success. In general, management accountants are responsible to relieve managers from certain duties so that they can pursue tasks that are more important more efficiently; to complement management by providing support in decision-making; and to limit managers’ decisions so that they remain rational, and not driven by self-interest (Weber & Schäffer, 2022). Management accountants’ performance will thus inadvertently improve managers’ decisions and, consequently, firm success.

From a labor economics point of view, management accountants' performance as a measure of their contribution to firm success depends on their managers' demand for the services that they can supply. One key facet of such internal labor markets is their function as a means for promotions and transfers of employees within a company (Keller, 2018). In contrast to hiring external candidates, internal labor markets can be used by companies to fill vacancies at all levels, which in turn affects the match quality between the requirements of a certain job and the skills provided by the employee (Bidwell, 2011; Weller et al., 2019). Internal labor markets thus facilitate vertical and horizontal mobility. Regarding vertical mobility, promotions into jobs of higher status, pay, but also increased skill requirements can lead to highly qualified employees finding jobs in higher positions (Gibbons & Waldman, 1998). One mechanism behind vertical mobility is so-called up-or-out tournaments by which companies lay off those employees who do not fulfil the requirements of their jobs and promote those who do (Waldman, 1990). Obviously, when regarding the selection procedure of newly hired employees, the out-option is necessary since otherwise only low-quality matches would remain in lower hierarchy levels (Weller et al., 2019).

In a similar vein, Weller et al. (2019) describe which mechanisms lead to employees' terminations of work, e.g., by being pushed or pulled out of the company. The company likely retains those employees who are most eligible regarding their fit with the job on a higher hierarchy level. Consequently, employees who fulfil the skill requirements of a higher position will be promoted and can thus be regarded as more successful.

Similarly, Grabner and Moers (2013) describe that promotions and, especially, their sorting function, can lead to the so-called Peter principle which implies that employees are promoted to their level of incompetence (Peter & Hull, 1969). To avoid this effect, which has negative consequences for team and organizational performance, managers who promote employees need information upon which they can base their promotion decisions. Aside from

current performance, managers rely on the subjective evaluations of their employees' direct supervisors regarding their abilities. Assessing skills can thus provide information regarding the fit between an employee and their position both before and after a promotion. This is particularly relevant when the tasks the employee must fulfil after the promotion differ significantly from those they previously had to fulfil (so-called type D promotions; Grabner & Moers, 2013). Acquiring skills over the course of their careers can therefore be an incentive for employees to signal to their supervisors that they are suitable for being promoted (Chan, 2018; Grabner & Moers, 2015). However, the question remains – which skills should management accountants acquire?

The discussion in human capital literature revolves mostly about macro-level skills. While the literature on micro-level human capital research has mostly measured skills in a context-generic fashion (e.g., by measuring general cognitive ability or personality; cf. Schmidt & Hunter, 1998), applying more differentiated measures of specific skills that are relevant for well-defined tasks may explain individual differences in job performance more clearly. This may be particularly relevant for different professions within a firm that would require different skills from employees while at the same time contributing to the firm's overall success. Acknowledging Raffiee & Coff's (2016) findings on firm-specific human capital, this approach allows for the measurement and analysis of profession-specific human capital that is not necessarily limited to a firm and can therefore be relevant across firms and industries. By deliberately shifting the focus away from a distinction between firm-specific and general human capital, this approach contributes to the discussion laid out by Wright and McMahan (2011, p. 99) who posit that “the specific-general distinction (...) does not lead to a conclusion that one or the other is the only source of value creation and potential competitive advantage”.

It has furthermore long been a paradigm in micro-level human capital research that ‘more is better’, in a sense that individuals who possess more skills would perform better in

their jobs. This assumption may not necessarily hold in different contexts: as Schmidt and Hunter (1998) note, if specific skills are related to an individual’s job performance, then an aggregation of such skills on a firm level would drive firm performance. Moreover, this approach neglects the fact that different configurations of skills may lead to the same performance (equifinality; v. Bertalanffy, 1972; Gresov & Drazin, 1997), or that the same configuration of skills may have different performance implications depending on the individual or organizational context. Consequently, I provide an overview of the skills required in a management accounting context.

B.2.2 Management Accountants’ Skills

The literature on the specific skills that management accountants need in their day-to-day jobs is surprisingly scarce – not only because of a lack of a common definition of what skills are in the context of management accounting. The following definition of KSAOs subsumes in a precise manner what management accounting scholars typically understand as skills:

“Specifically, knowledge is the declarative or procedural information necessary for performing a task and the foundation on which skills are developed (knowledge may apply to many jobs or only a single job), skills are the individual’s level of proficiency and capabilities to perform specific tasks and can be improved with experience, ability is a more enduring capability that is applicable to a range of job-related tasks, and other characteristics refers to personality traits and related dispositional attributes that affect the individual’s performance across a broad range of tasks” (Ployhart et al., 2014; p. 376).

Management accountants’ tasks are forward-looking and directed at supporting managers and other stakeholders within the firm. Budgeting, planning, and steering processes are taken on by management accountants (Siegel, Sorensen, Klammer, & Richtermeyer, 2010;

Russell, Siegel, & Kulesza, 1999). There exists, however, a somewhat inconclusive stream of literature on which skills, aside from in-depth business knowledge, management accountants should ideally possess to fulfil these tasks. The role of management accountants has shifted away from a 'bean counter' function to a more 'business partner' role that is creating value within the firm and involves taking part in strategic decision making (Goretzki & Pfister, 2022; Maas & Matejka, 2009). Consequently, different skills are now required from management accountants and demanded by employers.

As early as 2002, Birkett in his seminal study established a comprehensive framework of skills that management accountants should ideally possess and acquire over the course of their careers. This framework consists of 375 different skills, which renders it somewhat difficult to apply in academic research since it would make questionnaires rather long. Nonetheless, Birkett provides useful implications for research on management accounting skills: the sheer complexity of his framework indicates that management accountants' jobs have become more diverse, and that along their careers, they become more complex in nature.

In particular, the development of communication skills, interpersonal abilities, problem-solving skills, and critical thinking is frequently named as important for future management accountants (Arquero-Montano et al., 2001; Hassall et al., 2005). Spraakman et al. (2015) in their qualitative study further elaborate on the importance of differential IT skills for management accountants. Most notably however, they describe that management accounting graduates not only have to be able to go beyond basic IT knowledge to analyze underlying non-financial drivers of financial numbers; they also state that IT itself is continuously evolving, and that IT knowledge, skills, and abilities need to develop alongside technological changes. Taken together, these skills exemplify that the management accounting profession is changing profoundly towards a more complex profile that extends well beyond technical-financial analyses.

Management accounting professional bodies such as the Institute of Management Accountants (IMA) or the Chartered Institute of Management Accountants (CIMA) have therefore evaluated and described how management accounting skills should be developed beyond more financial accounting-related skills. Becoming a Chartered Management Accountant thus requires that graduates not only acquire technical expertise and business knowledge, but also certain cognitive and behavioral skills that enable them to act as 'hybrid' accountants in business (Howcroft, 2017).

The IMA only recently published an extended practitioner-oriented framework of 33 management accounting skills that are distributed across six different domains (IMA, 2019): Strategic planning and performance, reporting and control, technology and analytics, business acumen and operations, leadership, and professional ethics and values.

These six dimensions, together with the aforementioned (management) accounting skills, also served as a basis for my extensive pre-study (Schäffer et al., 2019). Nonetheless, it must be noted that all competency frameworks as well as previous literature on the subject have in common that they describe which skills (management) accounting graduates need, or which such skills employers expect of graduates. Most of the studies focus on commonalities or discrepancies between educators and employers regarding skills, and some find that there are indeed discrepancies. This raises the question whether management accounting educators succeed in delivering what employers require. Spraakman et al. (2015) stress the importance of surveying contemporary employers to develop adequate curricula for management accountants. However, Rouwelaar, Schaepkens, and Widener (2021) are, to the best of my knowledge, the only researchers who have measured skills within a firm. Drawing on Xydias-Lobo et al.'s (2004) study which uses Katz's (2009) three skill dimensions, namely technical, conceptual, and interpersonal skills, they show that management accountants' effectiveness depends on these skills and combinations thereof. While I acknowledge their study's importance in pioneering the

description of management accounting skills within a firm, I contend that Katz's (2009) three skill dimensions provide only limited depth for describing the complex nature of the management accounting practice – especially because Rouwelaar et al. (2021) treat management accountants as a homogenous group of employees. When regarding management accountants' career trajectories however, we lack an overview of the development and emergence of skill sets and configurations across hierarchy levels. This is relevant insofar as we do not know what constitutes management accountants' superior performance and, thus, relevant human capital.

In particular with regard to management accountants' roles, resulting role conflicts (Maas & Matejka, 2009), and changes in self-concepts and roles fulfilled (Goretzki & Pfister, 2022), the discussion on relevant skills for management accountants is warranted – going beyond Rouwelaar et al.'s (2021) study, I argue that management accountants cannot be treated as a homogeneous group but take on different roles which involve the acquisition of different skills. Traditionally, research on management accounting roles has been characterized by claiming a dichotomy between bean counters and business partners (Burns & Baldvinsdottir, 2005; Goretzki & Pfister, 2022; Maas & Matejka, 2009). Bean counters are expected to perform certain routine tasks like, e.g., the provision of financial data and the maintenance of a firm's financial databases (Burns & Baldvinsdottir, 2005). Bean counters therefore tend to be more specialized and do not require managerial skills to the same extent as business partners, who actively take part in managerial decision making (Maas & Matejka, 2009). Not only can we assume that this requires a broader set of skills, but also that business partners who often find themselves on eye-level with their managerial counterparts take on leadership positions among management accountants.

In their article on leadership skills, Mumford et al. (2000) describe that employees begin their careers in a well-structured, relatively specific environment that requires the application of basic concepts. Consequently, they face highly structured problems; to perform well in such

a context, employees rely mostly on their prior education and are closely supervised. Prior education consists, according to Jackling and De Lange (2009) predominantly of technical in contrast to generic skills, implying a certain degree of specialization.

Typically, the problems employees are facing and the concepts they need to apply to solve them become more complex over time. At the same time, as Mumford et al. (2000, p. 109) note, "(...) more senior leadership positions apparently require higher levels of skills in general." Referring to the discussion on task-specific human capital in Gibbons and Waldman (2004), the acquisition of human capital involves becoming more proficient in certain tasks. We can assume that this includes the acquisition of certain additional skills or a certain degree of specialization. Similarly, Scoones and Bernhardt (1998) show that, indeed, employees have incentives to invest in the acquisition of firm-specific human capital in contrast to general human capital, because it increases their wages and the probability of being promoted. Hence, management accountants will specialize when climbing the corporate ladder and assuming leadership positions. Ultimately, as described by Datta and Iskandar-Datta (2014), some CFOs as top-level management accountants are highly specialized individuals.

However, not only specialization, but also the acquisition of general skills may be useful for management accountants pursuing a corporate career. Having a specialized accounting background can be beneficial in early career stages (Wier, Stone, & Hunton, 2005), while more senior leadership positions require skills extending beyond mere financial capabilities (Baxter & Chua, 2008). Furthermore, as shown by Vafeas (2009), upper middle management accountants (or, as he terms them, 'controllers'), do not have an incentive to invest further in accounting skills and, thus, specializing, because this would not be reflected by a pay premium; an argument that has been substantiated by Datta and Iskandar-Datta (2014), who show that generalist CFOs receive pay premiums. Ultimately, as CFO, a management accountant will require strategic leadership as well as financial and communication skills (Mumford et al., 2000). In

general, as shown by Custodio et al. (2013), generalist C-level executives are paid better than their specialist counterparts. Consequently, this financial incentive indicates that the further management accountants progress, the more diverse skills they acquire to ultimately become generalists.

Overall, the evidence on how management accountants' career trajectories can look like is mixed. I therefore argue that investigating which specific skills management accountants possess across different hierarchy levels can contribute to the ongoing debate on management accountants' corporate careers. Assessing specific skill sets provides more nuanced insights into this conundrum than proxies like educational background, degrees, or tasks, which are usually assessed in human capital literature. Not least because I believe that there is no such thing as a standard management accounting career, I follow an equifinality stance and assume that different paths can equally lead to success. Specifically, I ask:

RQ1: Which combinations of skill sets are required from management accountants across different hierarchy levels to achieve above-average performance?

RQ2: Do management accountants specialize over the course of their careers, or do they become generalists?

B.3 Methodical Specifics for Chapter B

B.3.1 Pre-Study

The purpose of this chapter is, among others, to introduce a micro-level measure of management accounting human capital based on skills to academic literature, and to describe how it is related to the performance of management accountants. Therefore, I built on the aforementioned frameworks and ran an extensive pre-study involving researchers and practitioners

(Schäffer et al., 2019). During this pre-study, all participants discussed and evaluated the existing frameworks and identified existing skills of management accounting in organizations. The result of this pre-study is a list of six important skill dimensions which were derived using the Delphi methodology. It is commonly used to structure and streamline communication of an expert panel to arrive at a commonly accepted agreement regarding a complex issue (Okoli & Pawlowski, 2004; Linstone & Turoff, 1975). I decided to rely on this methodology because it ensures that an anonymous panel, which we monitor, can interact and, without direct confrontation, discuss ideas. Avoiding a direct confrontation amongst panelists leads to less socially desirable behavior and other biases (Loo, 2002). Furthermore, if new information is brought up by the panel, the experts can continuously adjust their approaches without being directly confronted with others. This also ensures that all experts have an even opportunity to bring forward their opinion (Calabor, Mora, & Moya, 2019).

Expert Panel: Any Delphi study must be prepared and executed with great diligence. The experts for a panel must therefore be carefully selected since the outcome of the study relies on their professional judgment. As mentioned by Calabor et al. (2019), a minimum of seven experts is needed to arrive at meaningful conclusions. While in other explorative contexts a selection should be statistically representative and random, the Delphi methodology relies on the purposeful selection of experts who are able to provide meaningful insights on the subject matter (Okoli & Pawlowski, 2004). We thus selected eleven experts, two of whom were university professors, one a consultant in the field of management accounting, and the remaining eight senior management accountants from large German companies. However, their respective occupational backgrounds differed substantially, and the companies the management accountants worked for were from different industries. We thus balanced the diversity of our panel with the respective professional experience of our panelists. Consequently, we ensured that the panel was able to give relevant input to my questions.

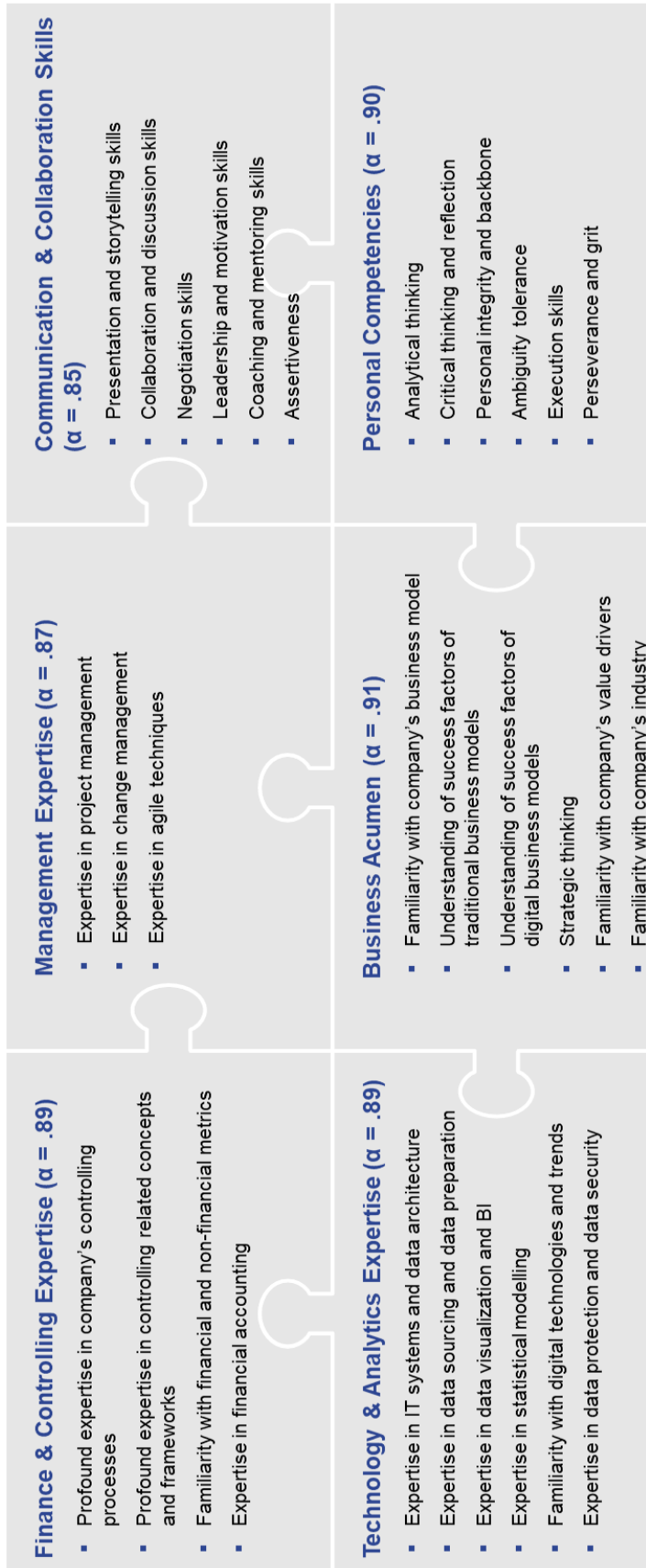


Figure B-1 Management Accounting Skill Sets

The aim of this Delphi study was to derive specific sets of skills that management accountants currently possess. Management accounting skills are not consistently described in academic literature; we therefore developed an initial set of skills based on practitioner literature (AICPA, 2019; IMA, 2019; IGC, 2016; Waelter et al., 2018). We sent an initial questionnaire to all panelists and, once we received the answers, analyzed, and summarized them. The summary was then sent to the experts again, who freely discussed their ideas, contributions or disagreement and benchmarked their own answers to the summary.

After seven iterations, during which the experts rated relevant skills by their relevance now and in the nearer future (i.e., five years) on Likert-scales and could also provide written feedback, a consensus was reached, and six sets of skills were described: Communication and collaboration competencies, technology and analytics expertise, finance and controlling expertise, personal competencies, management expertise, and business acumen. An overview of the specific skills within each set can be found in Table B-2.

B.3.2 Survey

To investigate whether management accountants possess these different skills and how they are related to the performance of management accountants on different hierarchy levels, I use a survey in collaboration with a large German multinational field company. In 2019, I sent out a survey to every management accountant ($n = 915$) working for the field company. I choose a single-company setting because it ensures that organization-specific factors like corporate culture or hierarchy levels are constant and homogeneous across the population, i.e., my respondents adhere to similar organization-specific standards and use a common language typical for management accountants, which also ensures that skills are comparable across the population. Surveying different companies would likely have confounded my results.

The company also granted us access to archival data on employee gender, age, hierarchy level and region of the respondents. I designed my questionnaire following the recommendations by Christian, Dillman, and Smyth (2008). After having discussed the survey with the field company, I designed an online questionnaire that was sent to all management accountants in the company. To ensure a high response rate from all respondents, the questionnaire was worded in English but included a Spanish translation that was visible when hovering over the question with the cursor. Regarding the translation, I followed recommendations by Behling & Law (2000), had a native speaker translate the questionnaire, and another native speaker translate it backwards. The translation was deemed appropriate. To ensure anonymity of the respondents, all participants were assigned a unique identification code by the company. I only received this code alongside the filled-in questionnaires and could therefore guarantee that all answers be treated anonymously and confidentially. This guarantee was included in the introductory part of the questionnaire together with a note that the survey could be exited at any time, and that any question could be skipped. I randomized the items within each construct and asked the constructs in a randomized fashion within each chapter so I could reduce order bias and fatigue bias (Lavrakas, 2008). I am thus confident to have reduced response biases to a minimum (Meade, Watson, & Kroustalis, 2007). The questionnaire was sent out in October 2019, and both the company's business unit management and I myself sent out regular reminders to all participants while it remained in the field. After six weeks in the field, I received $n = 536$ filled-in questionnaires (response rate = 58.6%).

Descriptive Statistics: 51% of respondents are female, 48% male, and 0.58% indicate they identify as diverse. The average age is 36 years, and participants have an average firm tenure of 9.3 years. Most respondents are from Germany (24%), Asia Pacific countries (23%), and Eastern Europe (18%), while 11% were from North America and Western Europe each. 6% of participants are from the Middle East/Africa and 5% from Latin America. Concerning

hierarchy levels, most of the respondents (40%) do not possess management responsibilities, i.e., are typical lower-level management accountants. At the same time, 54% are management accountants working in different middle management positions, while 5% work in senior management positions. The average respondent has been working under their supervisor for an average of 2.9 years and indicates that they are working in the same building.

	n	Mean	Std.	Skew.	Min.	Max.	(1)	(2)	(3)	(4)
(1) Communication & Coll.	534	5.05	.98	-.79	1	7	1			
(2) Management	533	4.48	1.31	-.60	1	7	.62	1		
(3) Technology & Analytics	533	4.02	1.27	-.14	1	7	.34	.46	1	
(4) Personal Competencies	532	5.79	.87	-1.46	1	7	.67	.43	.27	1
(5) Business Acumen	534	5.07	1.06	-.71	1	7	.61	.53	.48	.58
(6) Finance & Controlling	533	5.24	1.13	-.81	1	7	.54	.49	.33	.57
(7) Performance	524	5.70	.85	-1.02	1	7	.37	.25	.20	.41
(8) Age	476	36.42	9.35	.91	20	69	.14	.21	-.02	.13
(9) Gender	517	.52			0	1	-.17	-.15	-.10	-.15
(10) Region	508						.11	.04	-.05	.20
(11) Hierarchy Level	512	6.65	2.33	-.22	1	9	-.34	-.28	.04	-.30

	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Communication & Coll.							
(2) Management							
(3) Technology & Analytics							
(4) Personal Competencies							
(5) Business Acumen	1						
(6) Finance & Controlling	.56	1					
(7) Performance	.33	.31	1				
(8) Age	.14	.21	.08	1			
(9) Gender	-.16	-.13	-.03	-.07	1		
(10) Region	.06	.13	.03	.20	-.14	1	
(11) Hierarchy Level	-.25	-.36	-.07	-.53	.25	-.33	1

Table B-1 Descriptives and Pairwise Correlations

Factor Scores are used to denote Latent Variables. Bold numbers denote significance of $p < .05$. The difference between the 536 cases in the final sample and the number of cases in single items in this table results from missing values.

B.3.3 Measures

I measure each of the management accounting skills identified in the pre-study on a seven-point Likert scale between 1 = ‘Below Average’ and 7 = ‘Above Average’. Participants

are asked to which extent they possess the respective skills. Competencies are asked across the following six dimensions:

Communication and Collaboration Competencies ($\alpha = .85$): Among the six competencies asked are 'negotiation skills', 'assertiveness', but also 'coaching and mentoring skills'.

Technology and Analytics Expertise ($\alpha = .89$): Building on my pre-study, technology and analytics expertise is characterized by skills like 'expertise in statistical modelling', 'expertise in IT systems and architecture' as well as 'familiarity with digital technology and trends'.

Finance and Controlling Expertise ($\alpha = .89$): This area of expertise consists of skills like 'familiarity with financial and non-financial metrics' or 'expertise in financial accounting'.

Personal Competencies ($\alpha = .90$): This area contains 'perseverance and grit' and 'analytical thinking and problem-solving orientation', but also 'openness and ambiguity tolerance'.

Management Expertise ($\alpha = .87$): Management expertise comprises skills like 'expertise in project management' and 'expertise in agile techniques'.

Business Acumen ($\alpha = .91$): Finally, Business Acumen is characterized by skills like 'strategic thinking' or 'understanding of company's value drivers'.

An overview of all competencies can be found in Table B-2.

I further include an item to capture respondents' *Self-rated Performance*. In particular, I ask them 'Considering all of my duties and responsibilities, how would you rate my overall performance at work during the past 12 months?' on a scale of 1 = 'Poor' to 7 = 'Excellent'.

Lastly, I received access to archival data on employee *age*, *gender*, *hierarchy level*, and *region* which I use as control variables in my analyses.

B.3.4 Analytical Strategy

I began my analyses by assessing my variables' descriptive statistics and pairwise correlations; please refer to Table 1. Afterwards, I determined my latent constructs' convergent and discriminant validities. I therefore first conducted a principal component factor analysis with varimax rotation (Costello & Osborne, 2015) and initially received nine factors. When looking at the respective factor loadings and cross loadings, I found that all the *management skills* items loaded onto the same factor as *communication and collaboration competencies*. Cross loadings were as high as .71; however, since I established that the two sets of skills were distinct in the aforementioned pre-study, I decided to treat them as separate constructs. I did however exclude one item of the *communication and collaboration competencies* ('Presentation and storytelling skills') from further analyses since it had a factor loading of below .5 while at the same time exhibiting a cross loading of .62. For an overview, please refer to Table B-2.

Variables	β	α	CR	AVE
Communication and Collaboration Competencies		.849	.853	.538
Negotiation skills	.561			
Presentation and storytelling skills*	.453			
Leadership and motivation skills	.674			
Collaboration and discussion skills	.630			
Assertiveness	.592			
Coaching and mentoring skills	.488			
Management Expertise		.871	.868	.686
Expertise in project management	.717			
Expertise in change management	.701			
Expertise in agile techniques	.556			
Technology and Analytics Expertise		.891	.893	.585
Expertise in IT systems and data architecture	.822			
Familiarity with digital technologies and trends	.787			
Expertise in data visualization and BI	.819			
Expertise in data protection and data security	.698			
Expertise in statistical modelling	.800			
Expertise in data sourcing and data preparation	.696			
Personal Competencies		.904	.904	.613
Perseverance and grit	.747			
Critical thinking and reflection	.776			
Execution skills	.756			
Openness and ambiguity tolerance	.722			
Personal integrity and backbone	.692			
Analytical thinking and problem-solving orientation	.680			
Business Acumen		.912	.913	.638
Familiarity with company’s industry	.769			
Familiarity with company’s business model	.727			
Strategic thinking	.624			
Understanding of success factors of traditional business models	.644			
Familiarity with company’s value drivers	.779			
Understanding of success factors of digital business models	.814			
Finance and Controlling Expertise		.886	.884	.666
Profound expertise in finance & controlling related concepts and frameworks	.812			
Expertise in financial accounting	.796			
Familiarity with financial and non-financial metrics	.667			
Profound expertise in company’s finance & controlling processes	.756			

Table B-2 Latent Constructs and Corresponding Items

Factor loadings, Cronbach’s Alpha, Composite Reliability, and Average Variance Extracted. Asterisks denote excluded indicator variables.

Regarding my constructs’ alphas, I find that all constructs possess alphas of .85 or higher. Looking at my constructs’ composite reliability (CR) coefficients, I find that all constructs possess a CR of greater than .83. Squared correlations of the latent constructs are no larger than .52, and the average variance extracted of all constructs are larger than .55.

I then calculated a measurement model including all latent variables. According to Doornik-Hansen test statistics (Doornik & Hansen, 2008), the variables I used are jointly non-normally distributed, which is why I used Satorra-Bentler heteroscedasticity-robust standard errors (Satorra & Bentler, 1994). When assessing the model's goodness-of-fit statistics, I find that it is superior to other models consisting of five or fewer latent variables with χ^2 (362) of 878.757. The Satorra-Bentler-adjusted Root Mean Squared Error of Approximation (RMSEA) is as low as .054, while the Standardized Root Mean Squared Residual (SRMR) is .052. The Comparative Fit Index (CFI) is as high as .931, while the Tucker-Lewis Index is .922. According to Schermelleh-Engel et al. (2003), I can assume that my constructs are indeed appropriate measures. Goodness-of-fit statistics were inferior when I re-calculated my model with *communication and collaboration* and *management expertise* treated as one construct.

B.3.5 fsQCA

To answer my research questions, I took the following approach: after a careful evaluation of the appropriateness of my scales, I conducted fuzzy-set qualitative comparative analyses (fsQCA) after Longest & Vaisey (2008) and Ragin (2014; 2008). Based on set theory, QCA in general serves to explore how so-called cases differ from each other. This holistic approach is based on the comparison of so-called configurations of characteristics within each case. It is particularly suitable to investigate complex causal relationships and has recently garnered attention in management research, as well (Misangyi et al., 2017).

The causal complexity that can be addressed with QCA can be defined along three dimensions: equifinality, i.e. how different configurations of variables can lead to the same outcome; conjunctural causation, i.e. how a certain outcome can be created by multiple causal attributes combined into different such configurations; and causal asymmetry, i.e. how both the presence and the absence of such attributes can constitute a certain outcome (Misangyi et al., 2017; Schneider & Wagemann, 2012). This so-called neo-configurational perspective enables

researchers to alter their thinking profoundly since it allows for a more nuanced and differentiated view on phenomena that are relevant for management accounting scholars as well.

Fuzzy-set QCA enhances 'classical' crisp-set QCA (using binary variables) by integrating fuzzy sets that can take on any value between 0 and 1 (Ragin, 2014; 2008). Researchers can thus gain deeper and more realistic insights into how configurations of variables lead to a certain outcome (Pappas & Woodside, 2021).

To answer my research questions, I chose to employ fsQCA for several reasons. Every individual possesses a certain configuration of different skills. While there may be a set of high-performing management accountants within the firm, this set can further be differentiated into different subsets of high-performing management accountants with different configurations of skills. On the other hand, not all management accountants will possess the same high level of skills. E.g., there may be high-performing management accountants who lack certain skills. To differentiate it even further, management accountants without leadership responsibilities may possess different sets of skills than those with leadership responsibilities, and within each set, there may still be subsets that perform exceptionally well. Employing fsQCA thus enables us to investigate which different configurations of skills (and lack thereof) lead to above-average performance, and to differentiate between high-performing configurations across hierarchy levels. I thus show that for different hierarchy levels, different configurations of skills exist that lead to above-median performance. All analyses were carried out using Stata ® 17.0.

B.4 Findings

I calculated the factor scores for all my latent variables to utilize them for fsQCA. Calibration implies transforming continuous variables into set membership-variables with values ranging from 0 (i.e., full non-membership) to 1 (i.e., full membership). The point of maximum ambiguity, i.e., neither membership nor non-membership, would be at .5 (Ragin, 2008).

When calibrating my fuzzy variables, I followed the recommendations of Pappas and Woodside (2021). Generally, the calibration of fuzzy variables must be theoretically and empirically informed. I asked all skill variables as well as performance on 7-point Likert scales; however, since my factor variables were jointly non-normally distributed, I applied the direct transformation approach (Ragin, 2008), and used the 20%-, 50%-, and 80%-quantiles as thresholds. This implies that the cutoff point for total non-membership would be at 20%, the point of maximum ambiguity would be defined as the median, and the point of total membership would be at 80%. An overview of calibration thresholds for all my variables is given in Table B-3.

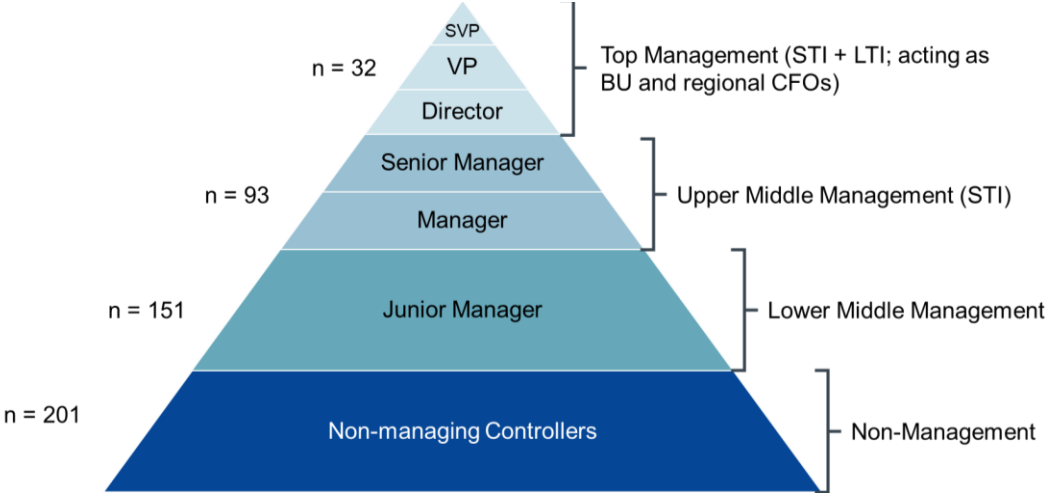


Figure B-2 Hierarchy Levels

Condition		Calibration		
		Fully out	Crossover	Fully in
Antecedent	Comm. & Coll.	4.2	5.16	5.8
	Management	3.15	4.67	5.3
	Technology	2.9	4.0	5.1
	Personal Comp.	5.1	5.9	6.45
	Business Acumen	4.1	5.1	5.9
	Finance & Controlling	4.2	5.3	5.8
Outcome	Performance	4.0	5.0	6.0

Table B-3 Calibration of Fuzzy Variables

Since I addressed configurations for different hierarchy levels, I calculated different fsQCA for management accountants without leadership responsibilities, such in lower and upper middle management, and such in top management positions. The subsamples were chosen according to the company’s hierarchy labels, compensation structure, and signing limits. Lower middle management controllers for example are labelled ‘junior managers’ and are compensated according to a collective wage agreement, whereas upper middle management employees are called ‘managers’ and ‘senior managers’; part of their compensation consists of short-term incentives. Top management accountants are labelled ‘directors, ‘vice presidents’ and ‘senior vice presidents’, and receive long-term incentives as part of their compensation. The latter act as CFOs of business units and country organizations.

I chose performance as my outcome variable, and the fuzzified factor scores of the six different skill sets inherently present in my research setting as antecedent configurations.

For each subsample, truth tables were generated, whereby I excluded such configurations of skill sets that had a frequency of zero and thus did not explain any of the cases in my

models. I then conducted sufficiency and necessity analyses of my standardized variables following commonly established standards: the threshold for raw consistency was set at .8 (Fiss, 2011; Greckhamer, 2016; Longest & Vaisey, 2008; Pappas & Woodside, 2021; Schneider & Wagemann, 2012). All possible configurations of skill sets that led to above-average performance, i.e., the complex solution or sufficient conditions, were then reduced using a Quine-McCluskey algorithm (Ragin, 2014; 2008) in order to retain the so-called core conditions, or parsimonious solution. These skill sets provide a necessary condition within each subset for a management accountant to achieve above-average performance. The so-called intermediate solution provides peripheral conditions that can be counterfactual and were eliminated by the Quine-McCluskey-algorithm. These peripheral conditions include configurations in which sets can be present, absent, or both, which would not be possible for core conditions.

	Antecedent Condition	High levels of performance					
		1a	1b	1c	1d	1e	1f
	Comm. & Coll.	●					
	Management		●				
	Technology			●			
	Personal Comp.				●		
	Business Acumen					●	
	Finance & Controlling						●
Raw Coverage		.478	.519	.602	.494	.527	.499
Unique Coverage		.010	.012	.046	.018	.018	.016
Consistency		.910	.899	.863	.912	.872	.874
Total Coverage							.841
Overall Solution Consistency							.834

Table B-4 Configurations for Non-Management Controllers

Configurations strongly related to high performance for non-leadership management accountants.

● = core condition present; ⊗ = core non-condition present

Results can be found in Tables B-5 – B-8. As can be seen, I find that for management accountants without leadership responsibilities ($n = 201$), six different cases lead to higher performance: management accountants that are proficient above average in either skill set will likely exhibit above-average performance. Total coverage is as high as .84, indicating that the outcome can be explained by the different configurations to a large extent. The overall solution consistency of this model is at .83, which renders the model useful according to the proposed minimum values of Pappas and Woodside (2021).

Regarding management accountants in lower middle management positions ($n = 151$), the configurations of different sets of skills appear more differentiated. While above-average

communication and collaboration as well as *finance and controlling expertise* alone are still necessary and sufficient for management accountants to perform well, other configurations that are more complex also enable above-average performance. Management accountants that possess high *business acumen* together with *technology and analytics expertise* or *management expertise*, and management accountants that have high *personal competencies*, but also either low *technological and analytics expertise* or *management expertise*, will perform well. The total coverage of this model is .94, while the overall solution consistency is as high as .87, exemplifying that my model is useful and explains the effects of different skill set configurations on management accountants' performance well.

		High levels of performance					
Antecedent Condition		2a	2b	2c	2d	2e	2f
	Comm. & Coll.					●	
	Management	⊗		⊗			
	Technology		⊗		⊗		
	Personal Comp.	●	●				
	Business Acumen			●	●		
	Finance & Controlling						●
Raw Coverage		.257	.350	.204	.265	.651	.731
Unique Coverage		.009	.005	.009	.000	.061	.106
Consistency		.952	.938	.932	.944	.911	.879
Total Coverage							.936
Overall Solution Consistency							.868

Table B-5 Configurations for Lower Middle Management Controllers

Configurations strongly related to high performance for lower middle-management accountants.

● = core condition present; ⊗ = core non-condition present

When examining the configurations of skill sets amongst upper middle-management controllers (n = 93), I find that nine different cases of above-average performance exist. Interestingly, no single skill set in isolation can explain high performance in these cases. Rather, different conjunctural configurations exist that lead to higher performance, such as, e.g., above-average *communication and collaboration competencies*, *management expertise*, *personal competencies*, and *business acumen* in conjunction with below-average *technology and analytics expertise*. There are only two configurations in which the successful management accountants do not exhibit below-average proficiency in either skill set; furthermore, one case exhibits below-average *management expertise*, *technology and analytics expertise*, and *business acumen*. Taken together, these findings indicate that management accountants tend to accumulate skills and specialize in different roles over the course of their careers.

Antecedent Condition	High levels of performance								
	3a	3b	3c	3d	3e	3f	3g	3h	3i
Comm. & Coll.	●		●	●	●		⊗		
Management	●	●		●	●	⊗			
Technology	⊗	●		●	●	⊗			
Personal Comp.	●	⊗	⊗		⊗			●	
Business Acumen	●	⊗	⊗	⊗		⊗			●
Finance & Controlling			⊗				●	●	●
Raw Coverage	.258	.098	.101	.141	.140	.183	.256	.702	.660
Unique Coverage	.020	.000	.006	.000	.002	.036	.003	.045	.036
Consistency	.956	.958	.943	.917	.979	.897	.957	.922	.950
Total Coverage									.882
Overall Solution Consistency									.898

Table B-6 Configurations for Upper Middle Management Controllers

Configurations strongly related to high performance for upper middle-management accountants.

● = core condition present; ⊗ = core non-condition present

Lastly, when investigating which configurations of skills are associated with above-average performance of top-level management accountants (n = 28), I find that the sets of skills required to perform well become more complex. Management accountants in top management positions need either *communication and collaboration competencies, technology and analytics expertise, business acumen, finance and controlling expertise, and management expertise*; or they require *communication and collaboration competencies, business acumen, finance and controlling expertise, and personal competencies*, while at the same time having low *technology and analytics expertise and management expertise*. Although the model covers only 48% of the performance outcome, the overall solution consistency of .96 indicates that it is indeed useful and will advance further research.

	Antecedent Condition	High levels of performance	
		4a	4b
	Comm. & Coll.	●	●
	Management	⊗	●
	Technology	⊗	●
	Personal Comp.	●	
	Business Acumen	●	●
	Finance & Controlling	●	●
Raw Coverage		.124	.417
Unique Coverage		.068	.362
Consistency		.982	.958
Total Coverage			.486
Overall Solution Consistency			.959

Table B-7 Configurations for Top Management Controllers

Configurations strongly related to high performance for top-level management accountants/CFOs.

● = core condition present; ⊗ = core non-condition present

Relating back to my research questions, I can confirm that different configurations of skills can constitute above-average performance of management accountants; across all hierarchy levels I surveyed, I find that at least two different configurations can explain above-average performance.

I further show that those sets of skills explaining above-average performance in management accountants become more complex in higher hierarchy levels. While non-management accountants exhibit above-average performance with only one set of skills in each configuration, those in upper-level management positions require more diverse and complex sets of skills (and a lack thereof) to be successful. At the same time, I find that there appears to

be a specialization effect: In the case of management accountants without leadership responsibilities, above-average performance will be achieved with above-average skills in either one of the skill sets I asked. When regarding management accountants with first leadership experience, this specialization seems to intensify. In the cases 2a to 2d, management accountants are even ‘sacrificing’ certain skill sets (*management expertise* and *technology and analytics expertise*) for the benefit of *business acumen* or *personal competencies* to perform well. In upper middle management positions, further differentiation takes place. Nine different cases exist that each are characterized by either an accumulation of skill sets (e.g., 3a, 3d, 3e) or a further specialization (e.g., 3c, 3g). Only on the top level, I find that two cases with broad and complex configurations of skill sets exist, indicating that these executive management accountants take on rather generalist roles.

B.5 Discussion

This chapter of my dissertation aims to answer two research questions, i.e., which combinations of skill sets lead to above-average performance in management accountants on different hierarchy levels, and whether they specialized over the course of their careers. I am confident that my results answer both. I thus contribute to the ongoing discussion of context-specific human capital, career trajectories, and specialist vs. generalist skills in the field of management accounting. I also show that skills serve as a useful measure for management accountants’ performance.

After introducing and validating a framework of management accounting skills derived from an extensive pre-study as a foundation for further analyses, I employ fuzzy-set QCA to answer my research questions. My results reveal that high performing entry-level management accountants focus on either one of the skill sets I asked. Management accountants with first leadership experience who exhibit above-average performance specialize even further while some more senior management accountants also acquire different skills. Eventually, I find that

management accountants in senior management positions have acquired two complex and diverse configurations of skill sets, indicating that they have become generalists. As such, I sketch the career paths management accountants in my case company pursue and provide first evidence on both the specificity and equifinality of configurations of skill sets regarding management accountants’ job performance.

B.5.1 Theoretical Contributions

With this study, I contribute to the existing literature on management accounting and human capital in several meaningful ways. First, my framework of management accounting skills integrates both academic and practitioner literature on skills by providing a rigorously designed framework that has been tested and validated in my field company. I thus enhance our understanding of which skills management accountants possess. With the introduction of my framework, I provide the basis for further research on management accounting skills in companies, enabling researchers to measure what has previously mostly been regarded from either an aggregate or an educational perspective. Going beyond the study of Rouwelaar et al. (2021), I am pioneering the measurement and analysis of the implications of different skill sets of management accountants’ performance within firms.

I find that different configurations of skill sets are associated with high performance of management accountants. This finding advances our understanding of the factors constituting the performance of management accountants themselves – a feature that has not found much attention in the literature yet. I thus complement the literature by showing that high match quality, as measured by different skill configurations across hierarchy levels, can enhance job performance (see Weller et al., 2019). Aside from this, I provide support for my claim that the distinct skills which I propose in my framework are contributing to management accountants’ job performance because they enhance their adaptability (esp. technology and analytics skills, but also critical thinking), effectivity (execution skills, profound expertise in company’s finance

and controlling processes), and efficiency (expertise in IT systems and data architecture, expertise in data visualization and business intelligence; cf. Sill, 2009). My arguments support Bidwell's (2011) claim that skills enable high-quality matches for employees in higher positions.

Regarding the literature on human capital, I can provide empirical evidence for Ferreira and Sah's (2012) theoretical model that posits that employees on higher hierarchy levels have acquired broader and more generalist expertise. Furthermore, I complement Datta and Iskandar-Datta's (2014) study by showing that top-level management accountants are generalists despite not necessarily having an MBA. Indeed, more than twice as many top-level management accountants had a master's degree than an MBA – all of them generalists as measured by the variety of above-average skills they possessed. Consequently, the acquisition of skills may follow a progressive model as proposed by Mumford et al. (2000).

My findings also enhance Grabner and Moers' (2013; 2015) theoretical studies on promotion decisions. Firstly, I show that skills can serve as a measure of management accountants' performance. This contributes to their take that the sorting role of promotions is made more efficient if supervisors base their promotion decisions not only on current employee performance, but also on subjective evaluations of their employees' abilities. Measuring skills can objectify this subjective assessment of abilities since it provides information on the fit between employees and both their current and future job. Furthermore, the skills configurations I investigated give an impression of which skills are relevant for the performance of management accountants across hierarchy levels. Replicating my findings in different organizational settings will likely enhance our understanding of what it takes to be a successful management accountant.

I also advance the ongoing discussion on equifinality in the human capital literature. Regarding skills, equifinality as a concept that posits that different configurations can lead to the same outcome has long been contested by scholars who argued that 'more is better' (e.g.,

Schmidt & Hunter, 1998). My findings suggest that different configurations of skill sets can equally lead to above-average performance, thus underlining the equifinality assumption.

At the same time, however, I find that there are configurations of skills within high performing management accountants that do not include technology and analytics skills. This is a puzzle: most scholars agree that technology and analytics skills are highly relevant for management accountants (e.g., Behn et al., 2012; Dzurainin et al., 2018; Oesterreich, Teuteberg, Bensberg, & Buscher, 2019; Spraakman et al., 2007), yet they are still under-represented amongst middle and top-level management accountants. This could exemplify that management accountant roles are not dispersed evenly among the population either. While I acknowledge that management accountants can take on different roles (Goretzki & Pfister, 2022), I simultaneously ask what constitutes a role: typical day-to-day tasks, or skills required to perform well? My results indicate that there exist different skills profiles across the entire population of management accountants in the company I surveyed. Whether and how these differential profiles relate to management accountant roles remains to be examined.

B.5.2 Practical Implications

The present study also bears several practical implications. Beginning with accounting education, universities and business schools alike should amend their curricula. My results illustrate that those management accountants' skills that are currently present in a company are not fully reflected in management accounting curricula. As Dzurainin et al. (2018) note, faculty place too little emphasis on advanced IT skills like data visualization, statistical programming, or database software, partly because tools requiring such skills are still emergent in companies, partly because faculty may lack guidance as to which tools are required in the field.

Furthermore, companies expect graduates to possess and develop critical thinking skills (Howcroft, 2017). However, within business schools, educators, being confronted with large

numbers of undergraduate students, tend to focus on the provision of technical training and knowledge transfers, with which employers are not even satisfied. This points in two directions:

Firstly, the framework of skills laid out in my study provides comprehensive guidance as to which skills can be incorporated in management accounting curricula. I show that a particular employer, namely my case company, requires of its management accountants a diverse range of skills for them to be successful. This enhances and complements professional bodies' competency frameworks (e.g., IMA, 2019; Waelter et al., 2018) and can serve as a basis for educators and companies alike. However, I acknowledge that the provision of a more detailed and diverse management accounting curriculum at universities may be constrained due to funding and temporal issues.

Secondly, well-performing management accountants acquire diverse sets of skills over the course of their careers. Related to this finding, I advocate for the development of intra-organizational learning programs. As Kavanagh and Drennan (2008) point out, such programs can already be incorporated in university curricula by teaching specific work-related skills; going beyond university curricula however, the skills expected by employers can only fully be developed with guidance at work. Especially with respect to on-the-job training, employees can acquire the skills relevant for their specific jobs within organizations, which improves the match quality between employee and job requirements (Weller et al., 2019).

While, of course, an organization must ensure that employees will apply the skills taught in training after the training has finished, the development of certain skills may also lead to a phenomenon called job crafting (Leana, Appelbaum, & Shevchuk, 2009). It describes how employees alter the dimensions of their jobs themselves. Regarding technology and analytics skills, more senior employees may not sufficiently capture the extent to which such skills can be used in day-to-day activities and may therefore not demand that these skills be applied – even though it could be useful for the firm. As can be seen in my results, senior management

accountants who perform well sometimes do not possess technology and analytics skills. Job crafting, i.e., providing employees with sufficient leeway to alter some dimensions of their jobs themselves, could enhance their performance and reduce skill gaps, since they may find ways to employ particularly their technology and analytics skills for the benefit of the firm.

B.5.3 Limitations and Future Research Directions

My study suffers from some limitations. While I acknowledge that there exists a profound discussion on the emergence of human capital and the interplay between unit-level and individual-level human capital (Crocker & Eckardt, 2014; Nyberg et al., 2014; Ployhart & Moliterno, 2011), I deliberately chose to focus on the individual characteristics of employees within my case company that can constitute human capital by contributing to their performance. I thus cannot contribute to the literature stream on unit-level human capital; however, researchers may want to follow my approach and measure human capital on a unit level with skills that are relevant within specific professions. This will shed light on differential effects contributing to sustainable competitive advantages within a firm.

It is certainly a promising avenue for further research to examine in greater detail the crossover effects of human capital within a unit. For example, future research could investigate how skills are transferred between individuals over time within a company, and thereby uncover knowledge networks that provide a rather difficult-to-replace competitive advantage for a firm.

All my measures are self-reported, which can confound my findings. Although I control for social desirability biases in the design of my questionnaire, I cannot rule out that respondents still answered the questions regarding the skills they currently possess in an overstated fashion. As McGuinness et al. (2017, p. 8) note, “(...) responses of workers may be more biased as they are more likely to consider future career requirements, rather than immediate job requirements, when responding to questions on skill shortfalls.”

Despite my strong theoretical and empirical foundations, a field experiment might reveal causality where a survey can only indicate correlations. Although I control for many variables that could potentially confound my analyses, I cannot rule out the possibility of common method bias since all measures are self-reported. Because of the results of my CFA analyses, however, I am confident that my measures are distinct from each other, and that no common method factor exists.

The usual caveats of survey research as well as fsQCA methodology apply.

I conducted my survey in a single company setting that allows for a diverse and representative picture of management accountant skills to be drawn. I am confident that the finance functions of larger MNEs should be somewhat similar. However, the generalizability of my findings towards other organizations is not a given and should be validated by applying my skills-framework across different companies and industries as well.

C Perceived Skill Gaps as Hindrance Stressors – What Happens When You Don't Have What It Takes⁵

Abstract

In this chapter of my dissertation, I investigate the negative consequences of not possessing the skills required of management accountants to fulfil their day-to-day work. Based on human capital, challenge-hindrance stressor framework and conservation of resources theories, I hypothesize that a lack of skills, or perceived skill gap, will elicit stress in controllers and thus increase their turnover intention. I further argue that a lack of skills can be perceived as an obstacle to achieving personal goals, resulting in a hindrance appraisal of the stressor, and thus amplifying the effect on turnover intention. Basing this chapter on a study of $n = 536$ management accountants, I introduce two measures of skill gaps as stressors to the scientific community and, by employing structural equation models, show that indeed both perceived current and future skill gaps are appraised as a hindrance, thus increasing turnover intention via job satisfaction. Implications for both research and practice are discussed.

⁵ This chapter is based on: Rester, F. (2023). Perceived Skill Gaps as Hindrance Stressors – What Happens When You Don't Have What It Takes. Unpublished working paper.

C.1 Introduction

It is commonly accepted that stress is, in general, detrimental to employees and can entice them to quit (e.g., Podsakoff, LePine, & LePine, 2007). In an age of quiet quitting, increased absenteeism, and thus lower employee retention, it is even more important to investigate which factors exist that lead to employee turnover, and which mechanisms can explain why employees intend to leave their jobs. Companies are obviously interested in retaining their employees: Any company's employees are not only necessary, but a vital component of its success. Human capital theory suggests that the knowledge, skills, abilities, and other traits (KSAOs)⁶ of an employee within a firm constitute said firm's human capital (Becker, 1964), thus providing a sustainable competitive advantage. There has been much discussion about the antecedents, consequences and factors influencing human capital in a firm, and much research has been established laying out the positive effects of possessing the right skills, i.e., human capital, on employee and firm performance, thus creating sustainable competitive advantages (Barney, 1991; Ployhart et al., 2014). However, this literature stream has mostly neglected the consequences of *not* having the skills that are required by one's job. I argue that not having the right skills can be stressful and thus entice employees to quit.

An alignment of skills that employees possess, and skills required by the job (i.e., higher match quality) facilitates the optimization of human capital resources in a firm (Weller, Hymer, Nyberg, & Ebert, 2019). However, employees sometimes may not possess the skills that they need to fulfil their tasks, which is commonly referred to as a 'skill gap' (McGuinness, Pouliakas, & Redmond, 2017). Literature has focused on firm-level and economic outcomes of skill gaps as a form of skill mismatch, finding that a lack of required skills can lead to lower employability,

⁶ For the sake of brevity and readability, I use the term "skills" when referring to KSAOs.

lower productivity both on a firm and an aggregate, macro-economic level, and higher turnover (Brunello & Wruuck, 2021). On an individual level, however, a lack of skills relevant for the job at hand may be perceived as stress- or harmful. When an individual does not possess the resources to cope with a certain demand, stress occurs (Lazarus & Folkman, 1984). Regarding a day-to-day job as a demand that needs to be fulfilled, not having the right skills to do so may elicit strain and be perceived as stressful. Furthermore, when this demand is appraised as a hindrance, i.e., a constraint in the attainment of personal goals, the already negative effect on individual satisfaction will be enhanced (LePine, 2022). This, in turn, can increase employees' turnover intention (Podsakoff et al., 2007). I argue that perceived skill gaps are hindering employees from reaching their goals and can therefore be regarded as hindrance stressors, consequently lowering their satisfaction, and thus enticing them to leave their employer.

Basing this chapter of my dissertation on a survey of $n = 536$ management accountants, I aim to show that in this profession, skill gaps exist and are detrimental to employees' well-being. Using structural equation models, I investigate how perceived current and future skill gaps are appraised by management accountants, and how this relates to their job satisfaction. I show that the negative effect on job satisfaction can enhance employees' willingness to quit their jobs, or turnover intention.

I therefore shed light on whether employees feel that they are sufficiently equipped with the skills they need to fulfil their day-to-day tasks. I argue that this so-called skill gap (McGuinness et al., 2017) can, on an individual level, be regarded as a stressor and will therefore cause strain. My theory is based on different streams of literature from the field of human capital (Ployhart et al., 2014), the challenge-hindrance model of stress (LePine, 2022), as well as conservation of resources theory (Hobfoll, 1989). Since skills are but resources that are required to meet a certain demand, i.e., employees' tasks, I argue that a perceived loss of such resources

will individually be regarded as a hindrance and eventually decrease employees' job satisfaction, resulting in increased turnover intention.

The rest of the chapter is structured as follows: after a review of the current state of the literature on stressors, skill gaps, and their consequences, I derive my hypotheses. This is followed by a thorough description of my methodology, after which the results are discussed. I conclude this chapter by providing recommendations for both researchers and practitioners.

C.2 Theory Development

C.2.1 The Challenge-Hindrance Stressor Framework

The challenge-hindrance stressor framework (CHSF) has received some attention in the management literature, not only because it provides an in-detail explanation of individuals' reaction to stress, but also because it highlights potential positive aspects of stressors in the workplace (for a review, see LePine, 2022). Based on Lazarus and Folkman's (1984) transactional theory of stress, it posits that stressors, i.e., internal, or external stimuli, will be evaluated subconsciously by an individual. After an initial assessment to determine whether one has enough resources to cope with the stimulus (the primary appraisal), a subsequent secondary appraisal takes place. The individual determines whether the stimulus provides an opportunity for personal growth or potential gains (i.e., an appraisal as a challenge), or an obstacle that hinders the individual from attaining its goals (i.e., a hindrance appraisal; Cavanaugh, Boswell, Roehling, and Boudreau, 2000). It is noteworthy that challenge appraisals elicit positive emotions, whereas hindrance appraisals elicit negative emotions (Lazarus, 2001; Scherer, Schorr, & Johnstone, 2001).

Based on this notion, scholars have developed a stressor framework that differentiated between stressors that elicited challenge appraisals, such as workload, or time pressure, and such that elicited hindrance appraisals, such as role conflict, or role ambiguity (e.g., Boswell et

al., 2004; Pearsall, Ellis, & Stein, 2009; Podsakoff, LePine, & LePine, 2007; Webster, Beehr, & Love, 2011). Generally, challenge stressors were positively associated with job satisfaction (Cavanaugh et al., 2000), and individual (LePine et al., 2005) and team performance (Pearsall et al., 2009), whereas hindrance stressors had negative effects on such outcomes.

The assumption that challenge stressors would always be appraised as a challenge, and hindrance stressors would always be appraised as a hindrance, has been a tenet in the organizational behavior literature on stress. However, individuals tend to appraise stressors individually. Such a conceptual distinction between stressors and their appraisals has first been described and tested by Webster et al. (2011), who in their seminal paper found that challenge and hindrance stressors were in general appraised as such, but that some stressors could be appraised as both, and to varying degrees. This implies that challenge and hindrance stressors can hardly be classified as such without measuring an appraisal distinctly, and that the stressor-appraisal relationship must be analyzed as well. Researchers have consistently described that challenge and hindrance appraisals mediated the stressor-outcome relationships they investigated (LePine, 2022; Liu & Li, 2018).

Drawing on this line of reasoning, several researchers have begun to describe factors that can influence the appraisal of a stressor. LePine et al. (2016) described in their two studies on US Marines that charismatic leadership had a significant positive effect on the challenge appraisals of stressors, which in turn enhanced the Marines' performance. Ma et al. (2021) found different forms of goal orientation to moderate the stressor-appraisal relationships both for challenge and hindrance appraisals.

However, a closer look at the antecedents and consequences of appraisals may be warranted. Following a notion based on the conservation of resources theory (COR; Hobfoll, 1989), LePine (2022) in her review of the CHSF describes that one mechanism that links hindrance appraisals and negative work outcomes can be disengagement. An individual experiencing

feelings of (potential) loss of resources will likely become disengaged, and thus become frustrated, anxious, or angry. Disengagement has been found to be detrimental to satisfaction, performance, and well-being, but also to enhance turnover and burnout amongst employees (Afrahi et al., 2021).

This of course raises the question which resources are relevant for appraisals, and which effects they can have on the stressor-outcome relationship. More precisely, we argue that an employee's knowledge, skills, abilities, and other traits (i.e., skills) are important personal resources (Hobfoll et al., 2018), and that a lack of such skills can cause stress for employees. The following paragraph will substantiate this claim in more detail.

C.2.2 Perceived Skill Gaps as a Stressor

Literature on firm-level human capital describes that KSAOs, i.e., the knowledge, skills, abilities, and other traits possessed by employees within a firm, constitute its human capital and therefore a sustainable competitive advantage (Barney, 1991; Becker, 1964). A common definition of KSAOs can be found in Ployhart et al. (2014, p. 376).⁷

Consequently, possessing different skills is in general regarded as a positive determinant of employee performance and satisfaction (e.g., Ployhart & Moliterno, 2011; Quintini, 2011). While this rather broad definition of skills is adequate to capture the extent to which they affect firm performance and macro-economic outcomes, a more micro-level investigation of the skills required to fulfil a certain job may be promising. This is even more important since skills do not exist in isolation but are rather contingent on the context they are applied in (e.g., firm-specific human capital; Raffiee & Coff, 2016). While scholars agree that possessing skills that are relevant for economic outcomes is generally beneficial (Ployhart et al., 2014), we argue that

⁷ I quote the definition in section B.2.2 of this dissertation.

not having the skills required by one's job may be perceived as harmful by employees. Specifically, employees who do not possess the skills that are required by their job will experience a so-called skill gap.

There exists some literature on skill gaps as one dimension of skill mismatches, mostly regarded from a macroeconomics perspective (e.g., Brunello & Wruuck, 2021; McGuinness et al., 2017). In fragmented labor markets that are characterized by rapid technological changes, increased education levels of workers, higher competition on a global scale and an ageing population, skill mismatches are pervasive, and have significant consequences on unemployment, productivity, or the social welfare of employees (Flisi, Goglio, Meroni, Rodrigues, & Veratosciano 2016; Quintini, 2011).

Defined as the discrepancy between skills that an employee possesses and those required by the job, skill mismatches can hereby take on different forms: McGuinness et al. (2017) name over- and under-education, over- and under-skilling, horizontal mismatches, skill shortages, skill gaps, or skill obsolescence as manifestations of skill mismatches. In this chapter of my dissertation, I focus on self-reported skill gaps since the literature on individual and firm-level skill gaps remains scarce in comparison to other forms of skill mismatches (McGuinness & Ortiz, 2016).

As mentioned above, a stressor can be defined as an internal or external stimulus that causes strain. If the individual does not possess sufficient resources to cope with the stimulus, stress occurs. Resources can hereby be defined as cognitive, emotional, financial, or indeed any resources that are relevant or valuable to an individual (Halbesleben et al., 2014; Hobfoll et al., 2018). Given that employees are required to fulfil their jobs, any constraint in skills necessary to do so would equal to not being sufficiently equipped with resources and, consequently, evoke strain. I can therefore deduce that a perceived skill gap can be regarded as a stressor.

The CHSF (LePine, 2022; Webster et al. 2011) further assumes that individuals appraise stressors differentially. An appraisal of a stressor is akin to its subconscious, cognitive evaluation by the individual. Stressor appraisals elicit emotions, which will consequently attenuate or enhance the individual's reaction to the stressor (Lazarus, 2006; Scherer, Schorr, & Johnstone, 2001). Scholars differentiate between so-called challenge appraisals that occur when an individual perceives that the stressor provides an opportunity for personal growth, and which elicit positive emotions; and hindrance or threat appraisals that occur when the individual perceives that the stressor can obstruct the achievement of personal goals, which will elicit negative emotions. Challenge appraisals hereby generally have a positive effect on individual outcomes such as satisfaction, performance, or employee health, while hindrance appraisals have an opposite effect (e.g., Cavanaugh, Boswell, Roehling, & Boudreau, 2000; LePine, Podsakoff, LePine, 2005; LePine, Zhang, Crawford, & Rich, 2016; Podsakoff, LePine, & LePine, 2007; Webster, Beehr, & Love, 2011). Nonetheless, individuals may experience strain irrespective of their appraisals (Boswell et al., 2004; LePine et al., 2005).

The COR theory takes on a more nuanced perspective when regarding appraisals: that of resource gain and loss. More specifically, the core proposition states that individuals aim to acquire, retain, and protect those resources they deem relevant or valuable (Hobfoll et al., 2018). A loss of such resources will hereby be more salient than resource gain. Integrating the COR theory and the CHSF, LePine (2022) argues that the perception of (expected) resource loss will likely elicit hindrance appraisals, resulting in disengagement and, subsequently, lower satisfaction, while the perceived potential for resource gain will elicit a challenge appraisal. Still, hindrance appraisals amplify the negative effects of stressors on satisfaction. Perceived skill gaps, when appraised as a hindrance, will therefore likely have a detrimental effect on satisfaction. This, in turn, will entice employees to quit their jobs.

Podsakoff and colleagues (2007) elaborate on the consequences of being dissatisfied because of experiencing stress. Basing their notion on Schaubroeck, Cotton, and Jennings' (1989) seminal study on the consequences of role stress, they instigate that stressors indirectly influence employee turnover intention via strain and job satisfaction. They state that "(...) strain negatively impacts job satisfaction, job satisfaction positively influences organizational commitment, and organizational commitment negatively affects turnover intentions" (p. 440). Skill gaps can be positively related to turnover intention because if an individual is unable to perform their job duties effectively, they may feel that they are not able to advance in their career or that they are not adequately compensated for their work. They may also feel that they are not valued or supported by their employer, which can contribute to their intention to leave the organization. We can thus assume that skill gaps can have a positive effect on turnover intention. This notwithstanding and following Podsakoff et al.'s (2007) line of reasoning, I can furthermore contend that skill gaps, if perceived as a stressor, thus evoking strain, and lowering job satisfaction, can have an indirect effect on turnover intention as well.

Consequently, I aim to investigate in further detail the negative effect of skill gaps on turnover intention via job satisfaction (McGuinness & Ortiz, 2016; Podsakoff et al., 2007). Individuals that perceive a skill gap will likely feel that a lack of skills can hinder the fulfilment of the requirements of their day-to-day work, i.e., the attainment of their goals. Furthermore, the (already occurred or expected) loss of skills, i.e., a perceived current and future skill gap, will likely elicit a hindrance appraisal. I therefore argue that the perceived skill gaps will be appraised as a hindrance rather than as a challenge. This leads me to my hypotheses:

Hypothesis 1a: A perceived current skill gap will be appraised as a hindrance rather than as a challenge.

Hypothesis 1b: A perceived future skill gap will be appraised as a hindrance rather than as a challenge.

Furthermore, and in line with previous research, I hypothesize that the relationship between current and future skills gaps and job satisfaction will be mediated by their respective appraisals:

Hypothesis 2a: The relationship between a perceived current skill gap and job satisfaction will be mediated by its hindrance appraisal.

Hypothesis 2b: The relationship between a perceived future skill gap and job satisfaction will be mediated by its hindrance appraisal.

C.2.3 On the Relationship between Stress, Satisfaction, and Turnover Intention

As stated above, scholars agree that stress generally has a negative effect on employees' job satisfaction (e.g., LePine, 2022; Podsakoff et al., 2007). However, scholars have provided mixed evidence regarding the mechanism between stress, satisfaction, and turnover intention. In their paper, Chen, Ployhart, Thomas, Anderson, and Bliese (2011) describe that changes in job satisfaction have an impact on changes in turnover intentions. Their hypothesizing entails that a decrease in job satisfaction can impact employees' work expectations: When employees perceive that their satisfaction will decrease overtime, they will likely expect their work to be less fulfilling and entailing fewer opportunities for career advancement. Such negative expectations may entice them to search for alternative employment opportunities. Applied to skill gaps, and in particular future skill gaps, this implies that employees may either feel that they can compensate for this lack by harnessing training opportunities (i.e., regarding it as an opportunity for personal growth, a challenge appraisal), or feel that they will not be able to address their skill gap sufficiently (a hindrance appraisal). In the former case, the negative effect of the strain evoked by their skill gaps on satisfaction will be mitigated, resulting in lower turnover intention. In the latter case, however, employees expecting further decreased job satisfaction may search for alternative employment opportunities to compensate for their lack of skills in

the future. Therefore, I finally hypothesize that the effect of both current and future skill gaps on turnover intention will be positive and mediated by job satisfaction, ultimately leading to my proposed structural model (see Figure C-1):

Hypothesis 3a: The relationship between a perceived current skill gap and turnover intention will be positive and mediated by job satisfaction.

Hypothesis 3b: The relationship between a perceived future skill gap and turnover intention will be positive and mediated by job satisfaction.

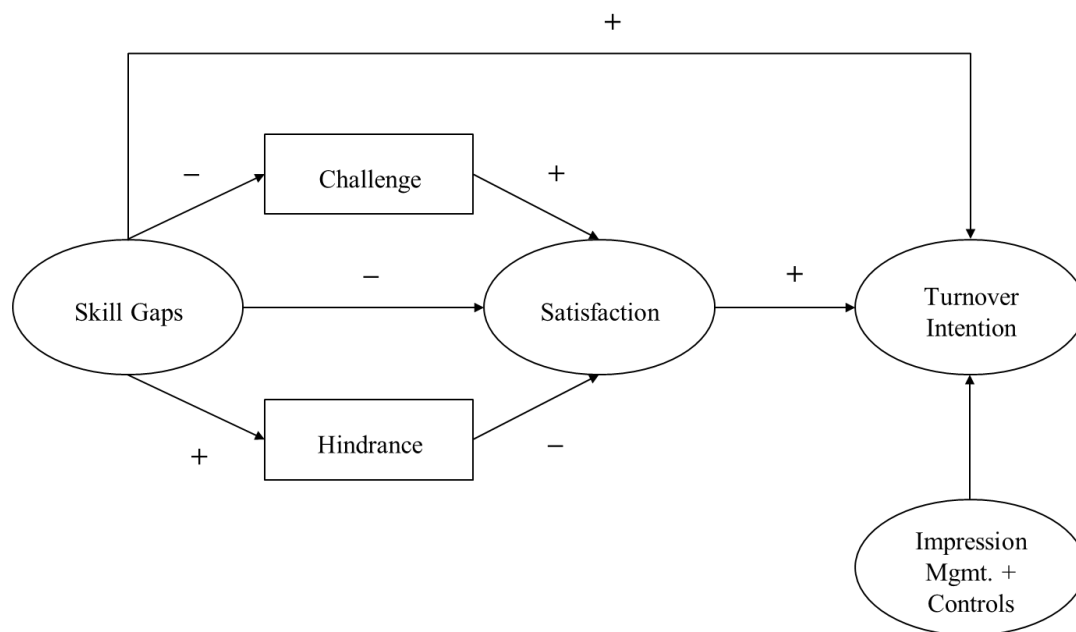


Figure C-1 Hypothesized Path Model

C.3 Methodological Specifics of Chapter C

General methodological specifics, details of the design of the questionnaire and the application of the survey, and general descriptive statistics have already been laid out in section B.3.2 of this dissertation. The specific descriptives of variables used in this chapter of the dissertation can be found below in Table C-1.

	n	Mean	St. D.	Skew.	Min.	Max.	25%	75%
(1) Perceived Current Skill Gap	533	1.58	.77	1.34	1	5	1	2
(2) Challenge Appraisal PCSG	524	3.36	1.36	-.47	1	5	3	4
(3) Hindrance Appraisal PCSG	522	2.10	1.13	.73	1	5	1	3
(4) Perceived Future Skill Gap	531	2.09	.92	.51	1	5	1.33	3
(5) Challenge Appraisal PFSG	518	3.24	1.29	-.40	1	5	2	4
(6) Hindrance Appraisal PFSG	517	2.34	1.13	.50	1	5	1	3
(7) Job Satisfaction	530	4.91	1.33	-.69	1	7	4	6
(8) Turnover Intention	530	2.47	1.71	1.14	1	7	1	4
(9) Age	476	36.4	9.35	.91	20	69	29	42
(10) Male	517	.48	.49	.14	0	1	0	1
(11) Asia/Pacific	536	.23	.41	1.35	0	1	0	1
(12) Eastern Europe	536	.18	.38	1.74	0	1	0	1
(13) Germany	536	.24	.42	1.30	0	1	0	1
(14) Latin America	536	.06	.23	3.86	0	1	0	1
(15) Middle East/Africa	536	.07	.24	3.58	0	1	0	1
(16) North America	536	.11	.31	2.59	0	1	0	1
(17) Hierarchy Level	477	6.72	2.23	-.39	1	9	5	9
(18) Tenure with Company	505	9.32	8.28	1.49	1	46	3	13
(19) Tenure with Leader	501	2.93	3.18	4.22	1	34	1	3
(20) Proximity to Leader	513	4.72	1.70	-1.01	1	6	3	6
(21) Impression Management	529	5.85	1.35	-1.54	1	7	5	7
(22) Performance	524	5.70	.85	-1.02	1	7	5	6

Table C-1 Descriptives and Pairwise Correlations

See also the following page. Factor Scores are used to denote Latent Variables. Bold numbers denote significance of $p < .05$. The difference between the 536 cases in the final sample and the number of cases in single items in this table results from missing values. Please note that in the analyses of chapter D, I used the same control variables.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	
(1) PCSG	1																						
(2) Challenge Appraisal PCSG	-0.12	1																					
(3) Hindrance Appraisal PCSG	0.42	-0.25	1																				
(4) PFSG	0.53	-0.03	0.31	1																			
(5) Challenge Appraisal PFSG	-0.07	0.66	-0.13	-0.13	1																		
(6) Hindrance Appraisal PFSG	0.39	-0.11	0.64	0.52	-0.28	1																	
(7) Job Satisfaction	-0.26	0.13	-0.17	-0.28	0.13	-0.24	1																
(8) Turnover Intention	0.22	-0.07	0.09	0.21	0.00	0.15	-0.51	1															
(9) Age	-0.06	0.02	-0.03	0.03	-0.03	0.00	0.04	-0.11	1														
(10) Male	-0.02	0.12	-0.02	0.01	0.12	0.02	0.02	0.04	0.08	1													
(11) Asia/Pacific	-0.01	-0.10	0.09	-0.08	-0.05	0.06	0.11	-0.02	-0.13	-0.17	1												
(12) Eastern Europe	0.05	0.02	0.06	0.10	0.01	0.04	0.04	0.01	-0.13	-0.03	-0.24	1											
(13) Germany	0.05	0.10	-0.03	0.03	0.07	0.03	-0.14	-0.04	0.11	0.11	-0.29	-0.25	1										
(14) Latin America	-0.07	0.04	-0.07	-0.08	0.04	-0.07	0.11	0.05	-0.06	0.08	-0.13	-0.11	-0.13	1									
(15) Middle East/Africa	-0.01	0.02	-0.06	-0.06	0.04	-0.11	0.04	-0.02	0.02	0.10	-0.14	-0.12	-0.14	-0.06	1								
(16) North America	-0.07	-0.04	-0.08	-0.05	-0.06	-0.03	-0.02	0.06	0.22	0.01	-0.18	-0.16	-0.19	-0.08	-0.09	1							
(17) Hierarchy Level	0.14	-0.14	0.12	0.03	-0.06	0.07	0.04	0.02	-0.51	-0.21	0.30	0.21	-0.19	-0.06	-0.06	-0.19	1						
(18) Tenure with Company	-0.05	0.07	-0.01	0.05	0.01	0.03	0.03	-0.12	0.81	0.04	-0.13	-0.13	0.20	-0.03	0.03	0.07	-0.44	1					
(19) Tenure with Leader	0.04	0.06	0.04	0.13	0.01	0.08	-0.01	0.05	0.35	-0.01	-0.02	0.03	-0.05	-0.02	0.11	0.02	-0.08	0.37	1				
(20) Proximity to Leader	0.00	-0.01	0.04	-0.01	-0.03	0.04	-0.03	0.00	-0.26	-0.03	0.06	0.03	0.06	-0.14	-0.04	-0.07	0.31	-0.24	-0.05	1			
(21) Impression Management	-0.20	0.03	-0.07	-0.12	0.01	-0.10	0.15	-0.12	0.06	0.00	0.07	-0.06	-0.14	0.03	0.06	0.11	-0.06	0.04	0.02	0.00	1		
(22) Performance	-0.39	0.10	-0.17	-0.24	0.04	-0.20	0.32	-0.18	0.08	0.02	-0.02	-0.03	-0.01	0.09	0.09	0.02	-0.09	0.10	0.00	-0.05	0.22	1	

Measures: My measures for *Perceived current skill gaps* ($\alpha = .84$) and *Perceived future skill gaps* ($\alpha = .81$) included three items each. Participants indicated whether they agreed with statements like, e.g., ‘My competencies do not enable me to do my job properly’ or ‘I do not possess competencies that will be necessary in the future’ on a scale of 1 = ‘Not at all’ to 5 = ‘To a large extent’.

Since I regard perceived skill gaps from a challenge-hindrane stressor framework perspective, I also asked *Challenge* and *Hindrane appraisal* measures after each of the skill gaps constructs. Following Gerich’s (2017) and Webster et al.’s (2011) strategy, I asked whether respondents regarded skill gaps as a ‘beneficial opportunity’ (*challenge appraisal*) or as a ‘hindering constraint’ (*hindrane appraisal*) after they responded to the respective skill gaps items. The appraisal items referred to the entire stressor construct, not to its single items. Thus, respondents were able to indicate if they regarded the stressor as a challenge, a hindrance, both, or none, which allows for a more nuanced assessment of stressor appraisals.

I used the commonly proposed *Job satisfaction* ($\alpha = .94$) measure by Bacharach, Bamberger, & Conley (1991). Participants were asked on a seven-point Likert scale ranging from 1 = ‘Very dissatisfied’ to 7 = ‘Very satisfied’ how content they were with, e.g., ‘[their] present job when compared to jobs in other organizations’.

Turnover intention ($\alpha = .94$.) was measured using two items: ‘It intend to leave the organization in the next 12 months’, and ‘I is likely that I will stay with the organization in the next 12 months’ (reverse coded).

Additionally, I controlled for self-rated *Performance*, which was asked with ‘Considering all of your duties and responsibilities, how would you rate your overall performance at work over the last 12 months?’ on a scale of 1 = ‘Poor’ to 7 = ‘Excellent’.

Lastly, I also asked Paulhus' (1986) *Impression management* ($\alpha = .72$) construct to control for possible social desirability bias since independent and dependent variables were asked in the same questionnaire. Participants were asked if they agreed with statements like 'I never cover up my mistakes' on a scale of 1 = 'Strongly disagree' to 7 = 'Strongly agree'.

The company I surveyed kindly provided me with archival data from their HR system: *Age, gender, region, tenure at the company, tenure with the same supervisor, hierarchy level, and proximity to supervisor* were used as control variables in my analyses.

Discriminant and convergent validities: Regarding the constructs' alphas, I find that all constructs possess alphas of .72 or higher. Looking at the constructs' composite reliability (CR) coefficients, I find that all constructs except *impression management* (CR = .72) possess a CR of greater than .82. Squared correlations of the latent constructs are no larger than .40, and the average variance extracted of all constructs except *impression management* (AVE = .47) are larger than .50. Although this implies insufficient convergent validity, I decided to retain the construct in my analyses. Convergent validity can be assumed for variables with AVEs of below .5 if, at the same time, their CR is above .5, which I can confirm (Fornell & Larcker, 1981). Since other studies that surveyed financial managers also used constructs with AVE values of below .4 (e.g., Janke, Mahlendorf, & Weber, 2014), I deemed *impression management* appropriate as a control variable.

Variables	β	α	CR	AVE
Perceived Current skills Gap		.835	.833	.628
I do not possess the competencies that are necessary for my current job	.823			
My competencies do not enable me to do my job properly	.852			
I do not possess an adequate set of competencies for my current job	.792			
Perceived Future skills Gap		.808	.818	.600
Considering my competencies, I do not feel adequately equipped for the future	.746			
In the future, my competencies will not be relevant for my work	.839			
I do not possess competencies that will be necessary in the future	.844			
Job Satisfaction		.939	.940	.755
How satisfied are you with your present job when you compare it to jobs in other companies?	.818			
... the chance your job gives you to do what you are best at?	.862			
... your present job when you consider the expectations you had when you took the job?	.876			
... your present job in light of your career expectations?	.903			
... the progress you are making toward the goals you set for yourself in your profession?	.867			
Turnover Intention		.938	.940	.887
I intend to leave the company in the next 12 months.	.925			
It is likely that I will stay with the company for the next 12 months. (Reverse coded)	.917			
Impression Management		.722	.720	.472
I never cover up my mistakes.	.790			
I always obey laws, even if I am unlikely to get caught.	.821			
I never take things that do not belong to me.	.772			

Table C-2 Latent Constructs and Corresponding Items

Factor loadings, Cronbach's Alpha, Composite Reliability, and Average Variance Extracted

C.3.1 Structural Equation Model

To investigate my hypotheses, I employ mediated structural equation modelling techniques following the approach of Iacobucci (2008). Basing my model on the challenge-hindrance stressor framework (LePine, 2022) and Podsakoff et al.'s (2007) findings, I analyze whether *perceived current skill gaps* and *perceived future skill gaps* have a detrimental effect on employee *satisfaction*, and how this process is mediated by their respective *challenge* and *hindrance appraisals*. I further analyze whether and how the relationship between *perceived current skill gaps*, *perceived future skill gaps*, and *turnover intention* is mediated by *job satisfaction*. Using structural equation models allows for the simultaneous estimation of parameters and testing multivariate causal relationships, in particular among latent variables. This is especially useful for the purpose of this chapter of my dissertation since the concept of stressor

appraisal is psychological in nature; structural equation models are commonly used in psychological research (Bollen, 2002).

I only measured two indicator variables for *turnover intention*. To still be able to use it as a latent construct, I fixed the factor loadings of both variables to one, following recommendations by Steiger (2002).

I first assessed the goodness of fit of my measurement model including *perceived current* and *future skill gaps*, *job satisfaction*, *turnover intention*, and *impression management* as a control variable. According to highly significant Doornik-Hansen test statistics, the indicators were jointly non-normally distributed. I therefore used Satorra-Bentler standard errors (Satorra & Bentler, 1994). Goodness-of-fit statistics of the measurement model were excellent with χ^2 (95) of 115.966, a Satorra-Bentler adjusted RMSEA of .021, CFI and TLI of .994 and .993 respectively, and SRMR of .030 (Schermelleh-Engel et al., 2003; see also Table C-3).

Default Standard Errors	
RMSEA	.033
CFI	.989
TLI	.987
SRMR	.030
χ^2 [95]	141.111
Satorra-Bentler Standard Errors	
RMSEA	.021
CFI	.994
TLI	.993
SRMR	.030
χ^2 [95]	115.966
AIC	22380.619
BIC	22620.738

Table C-3 Goodness of Fit Statistics

C.4 Findings

C.4.1 Main Results

I began my mediation analysis by investigating a direct path from the respective stressor constructs to *turnover intention* and included control variables (*impression management, age, gender, region, tenure at the company and tenure with the supervisor, hierarchy level, proximity to the supervisor, and performance*). For a *perceived current skill gap*, there exists a positive and significant path to *turnover intention* ($\gamma = .52, p < .001$). A *perceived future skill gap* also has a positive and significant path to *turnover intention* ($\gamma = .42, p < .001$). I then included paths from the *skill gap* constructs their respective *challenge* and *hindrance appraisals*, to *job satisfaction*, from the *appraisal* items to *job satisfaction*, and from *job satisfaction* to *turnover intention*. As can be seen in Tables C-4 and C-5, both *perceived current* and *perceived future skill gaps* have a significant negative path to their respective *challenge appraisal* ($\gamma = -.42, p < .001$, and $\gamma = -.29, p < .001$ respectively). They also exhibit a significant positive, and substantially larger, path to their respective *hindrance appraisal* ($\gamma = .76, p < .001$, and $\gamma = .77, p < .001$ respectively). These findings render support for both hypotheses 1a and 1b and indicate that both *skill gap* constructs will be appraised as a hindrance rather than as a challenge.

	Challenge Appr.	Hindrance Appr.	Satisfaction	Turnover Intention
Main Variables				
Perceived Current Skills Gap	-.417***	.763***	-.546***	.171
Challenge Appraisal PCSG			.073	
Hindrance Appraisal PCSG			-.056	
Satisfaction				-.814***
Control Variables				
Age				-.009
Sex				.180
Asia/Pacific				.197
Eastern Europe				.077
Germany				-.229
Latin America				.692*
Middle East/Africa				-.110
North America				.636
Hierarchy Level				.012
Tenure at Company				-.016
Tenure with Leader				.055
Proximity to Leader				.005
Impression Mgmt.				-.082
Performance				.094
RMSEA				.043
CFI				.939
TLI				.932
SRMR				.076
χ^2 [267]				466.530
AIC				31126.334
BIC				31795.395

Table C-4 Coefficients of the Structural Mediation Model for Perceived Current Skill Gaps

*Results of the Structural Equation Model for Perceived Current Skill Gaps (Asterisks denote significance on * = 95%-level; ** = 99%-level; *** = 99,9%-level).*

Concerning hypotheses 2a, I find mixed evidence about the mediation of the stressor-satisfaction relationship via appraisals. When interpreting mediation effects, I follow the approach of Baron and Kenny (1986). Regarding *perceived current skill gaps*, I find that the stressor has a strong, negative relationship with its *challenge appraisal*, and that *challenge appraisal* has a weak, but positive relationship with *job satisfaction* ($\gamma = .074$, $p = .076$), while *perceived current skill gap* has a strong negative relationship path towards *job satisfaction* ($\gamma = -.55$, $p < .001$). This implies that *challenge appraisal* partially and negatively mediates the relationship between *perceived current skill gap* and *job satisfaction*. I contend that this effect occurs because a *perceived current skill gap* is not appraised as a challenge, as indicated by the negative and significant coefficient. Were this coefficient positive and, thus, were a *perceived current skill gap* appraised as a challenge rather than as a hindrance, the overall effect would

turn positive and thereby mitigate the negative effects of the stressor on *job satisfaction*, as is in line with theory (LePine, 2022).

When investigating total effects after Sobel (1987), I find that the total effect of *perceived current skill gap* on *job satisfaction* is significant and substantially larger than the direct effect ($\gamma_T = -.62, p < .001$, in comparison to $\gamma_D = -.55, p < .001$). I do not find any significant path from *hindrance appraisal* to *job satisfaction* and must therefore reject hypothesis 2a. However, the findings reveal two important facets of skill gaps. First, a *perceived current skill gap* has a significant negative effect on *job satisfaction*, which is in line with my theorizing and shows that not having the skill necessary to perform in the current job can be strenuous and taxing for employees. Second, I show that *challenge appraisal* plays an important role in the relationship between *perceived current skill gaps* and *job satisfaction* since it transfers the effect of the stressor on *job satisfaction*. The overall negative effect of a *perceived current skill gap* will be enhanced by not appraising it as a challenge, thereby indicating that if employees feel that they a *perceived current skill gap* does not have potential for their personal growth, e.g., if they do not have access to trainings, this will enhance the strain associated with not currently possessing the skills necessary for their job.

When looking at a *perceived future skill gap*, I find that its *hindrance appraisal* has a negative and significant path to *job satisfaction* ($\gamma = -.13, p < .1$), whereas no such path can be found for its *challenge appraisal*. This, again, provides weak evidence that *hindrance appraisal* partially mediates the direct, negative effect of *perceived future skill gaps* on *job satisfaction*. Again, the overall mediation effect is negative, which is in line with my expectations. While I can confirm hypothesis 2b, I must acknowledge that the direct, negative effect of not having the right skills in the future is enhanced by its *hindrance appraisal*. The total effect of *perceived future skill gap* on *job satisfaction* is ($\gamma_T = -.44, p < .001$) is again significant and larger than the direct effect between the stressor and *job satisfaction* ($\gamma_D = -.32, p < .001$), indicating that

fearing not to be sufficiently equipped with skills in the future can have even worse consequences for employees if they perceive this as a hindering constraint. In this case, I also find a significant indirect effect between *perceived future skill gap* and *job satisfaction* ($\gamma_1 = -.12, p < .05$), rendering further support for hypothesis 2b.

	Challenge Appr.	Hindrance Appr.	Satisfaction	Turnover Intention
Main Variables				
Perceived Future Skills Gap	-.286**	.770***	-.332**	.136
Challenge Appraisal PFSG			.066	
Hindrance Appraisal PFSG			-.125*	
Satisfaction				-.817***
Control Variables				
Age				-.008
Sex				.204
Asia/Pacific				.187
Eastern Europe				.042
Germany				-.230
Latin America				.681*
Middle East/Africa				-.105
North America				.656
Hierarchy Level				-.005
Tenure at Company				-.018
Tenure with Leader				.052
Proximity to Leader				.002
Impression Mgmt.				-.080
Performance				.065
RMSEA				.038
CFI				.953
TLI				.947
SRMR				.067
χ^2 [267]				418.963
AIC				31321.018
BIC				31988.840

Table C-5 Coefficients of the Structural Mediation Model for Perceived Future Skill Gaps

*Results of the Structural Equation Model for Perceived Future Skill Gaps (Asterisks denote significance on * = 95%-level; ** = 99%-level; *** = 99,9%-level).*

Finally, all my models show that the relationship between both stressors and *turnover intention* is fully mediated by *job satisfaction*. A *perceived current skill gap* has a significant negative effect on job satisfaction ($\gamma = -.55, p < .001$), and *job satisfaction* is significantly negatively related to *turnover intention* ($\gamma = -.81, p < .001$). Taken together, these two effects

confirm my hypothesis 3a, since the overall effect of a *perceived current skill gap* on turnover intention is positive and mediated by *job satisfaction*, thus supporting Podsakoff et al.'s (2007) and Schaubroeck et al.'s (1989) models. I also find that the relationship between *perceived future skill gap* and *turnover intention* is fully mediated by *job satisfaction* with significant negative paths from the stressor to *job satisfaction* ($\gamma = -.33, p < .01$) and from *job satisfaction* to *turnover intention* ($\gamma = -.2, p < .001$), while at the same time not finding any significant direct path from the stressor to *turnover intention*. Highly significant Sobel z-tests provide additional evidence that the mediation effect is complete for both models (Sobel, 1982). I can therefore also confirm my hypothesis 3b.⁸

C.5 Discussion and Conclusion

In this chapter of my dissertation, I elaborated that a perceived lack of skills, i.e., current, and future skill gaps, could be regarded as stressors, how they would be appraised, which effect this would have on employee satisfaction, and how this in turn affects turnover intention. Basing my hypotheses on the CHSF, human capital, and COR theories, I described that a perceived lack of skills necessary to fulfil a job can be regarded as obstructive towards the fulfilment of one's goals, and that this perceived (current or future) loss of skills as resources would be appraised as a hindrance and thus lead to disengagement, ultimately resulting in lower job satisfaction and increased turnover intention. In my survey of $n = 536$ management accountants of a German multinational case company, I asked participants how they perceived their current and future lack of skills, their respective appraisals, how satisfied they were, and whether they intended to leave the company. Results of my mediated structural equation models revealed

⁸ I use job satisfaction as my outcome variable in chapter D. Therefore, I ran additional analyses including the main variables from chapter D (i.e., workload, its challenge and hindrance appraisals, and LMX) as control variables in the abovementioned models. Results remained largely unchanged in terms of direction and magnitude.

that both current and future skill gaps were appraised as hindrances rather than as challenges. This is in line with my hypotheses. While both a perceived current and future skill gap have a direct negative effect on job satisfaction, I observe that for a perceived current skill gap, this effect is partially mediated by its challenge appraisal, while for a perceived future skill gap, this effect is partially mediated by its hindrance appraisal. Furthermore, I find that job satisfaction fully mediates the path between both perceived current and future skill gaps and turnover intention.

My findings are intriguing. I am the first to describe a previously unnoticed stressor: perceived skill gaps. While, on an aggregate level, literature has established that skill gaps are detrimental to employee satisfaction and firm-level performance (e.g., McGuinness & Ortiz, 2016), my findings help explain the individual-level mechanism behind this phenomenon. My findings show that in a German multinational, employees perceive that they do not possess the skills that are required for their jobs, now and in the future, and that they appraise these skill gaps as a hindrance rather than as a challenge, which leads to lower job satisfaction, and entices employees to leave the company. This apparent lack of resources on an individual level has therefore far-reaching consequences for employees and firms alike. Not only will perceived skill gaps and the strain associated with them be detrimental for employees; they will also likely lead to higher turnover, especially so if they employees suffering from skill gaps do not have the opportunity to address them appropriately. As mentioned by McGuinness & Ortiz (2016), skill gaps are not necessarily a consequence of insufficient skills on the labor market but can develop within a firm as well.

Furthermore, I find differential relationships between skill gaps, their appraisals, and job satisfaction. On the one hand, challenge appraisal partially, but negatively mediates the path from perceived current skill gap to job satisfaction. This finding is intriguing since it implies that a lack of a challenge appraisal enhances the negative effect of a perceived current skill gap

on satisfaction. Employees who perceive that their current lack of skills may not be an opportunity for growth, as indicated by the negative coefficient of the path between the stressor and its challenge appraisal, may expect that their lack of skills may persist when remaining at the company they currently work for. This is underlined by the finding that a perceived current skill gap is positively related to turnover intention. I thus suggest that employees may expect that they will experience the opportunity for personal growth after they have left the company – furthering their disengagement from work and, consequently, lowering their job satisfaction.

On the other hand, I similarly find that a hindrance appraisal of a perceived future skill gap enhances the negative effect of the stressor on job satisfaction. In line with expectancy theory (Vroom, 1964), employees who expect that the skills they possess will not suffice to cope with the demands of their day-to-day work, and additionally perceive this as a hindering constraint, will likely leave the organization sooner rather than later (as is supported by the positive relationship between a perceived future skill gap and turnover intention in my model, which was measured asking if the participants intended to leave the organization in the next 12 months). Alternatively, employees who fear not to be sufficiently equipped with necessary skills in the future may wish to overcome the hindering constraint by proactively developing their skills in a way that enables them to avoid future skill gaps.

On a firm level, my findings imply that companies whose employees do not possess the skills necessary for their jobs and are therefore unsatisfied will likely leave the company. The CHSF suggests that the hindrance appraisal of a stressor (and subsequent disengagement) amplifies its negative effects not only on job satisfaction, but also performance, and retention (Afrahi et al., 2021; LePine, 2022). From a human capital point of view, not having the skills necessary for their job entices employees to leave, thereby decreasing the firm's human capital resource (Ployhart et al., 2014). Consequently, it is of vital interest to companies to endow their employees with the necessary skills so as to not lose them to competitors. After all, an important

source of a sustainable competitive advantage for a company consists of their employees' skills (Becker, 1964); if employees perceive that they do not possess relevant skills, this implies that the competitive advantage of the respective firm may be under threat.

C.5.1 Theoretical Implications

I contribute to literature on the CHSF by describing stressors that have, as of yet, not received much attention: perceived skill gaps. Although my line of reasoning seems rather straightforward, I am not aware of any studies that have regarded skill gaps from a transactional stress point of view. I thus enrich the body of literature on demands that employees within a firm suffer from by introducing the concept of individual-level perceived skill gaps to the academic community. I am confident that, given the promising results of my exploratory and confirmatory factor analyses, the constructs for perceived current and future skill gaps are useful for measuring whether employees feel that they are sufficiently equipped with the skills they require to fulfil their jobs.

I therefore shed light on a necessary consequence of underdeveloped skills in certain areas: stress. Drawing on Lazarus and Folkman's (1984) transactional theory of stress and the challenge-hindrance stressor framework (LePine, 2022), I show that perceived current skill gaps are detrimental to controllers' job satisfaction and lead to increased turnover intention. More importantly however, I extend the literature on skill gaps by finding support that perceived current and future skill gaps can be regarded as stressors, and that both are positively related to their respective hindrance appraisals, and negatively to their respective challenge appraisals. This implies that management accountants who do not feel sufficiently equipped with the skills they need to fulfil their tasks perceive this as a hindering constraint. This perceived lack of skills as resources, in turn, will elicit negative emotions (Scherer et al., 2001), and can subsequently lead to negative organizational and individual outcomes such as decreased

performance, lower job satisfaction, or burnout, ultimately resulting in employee turnover (LePine et al., 2005; Podsakoff et al., 2007).

I also extend the literature on the CHSF by investigating the effects of challenge and hindrance appraisals on job satisfaction in further detail. I can show that when a stressor is explicitly not appraised as a challenge, like perceived current and future skills gaps, this will enhance the negative effect of the stressor on job satisfaction. This more nuanced investigation extends our view on appraisals: while in the past, challenge and hindrance appraisals have been regarded as distinct constructs (i.e., the opportunity for personal growth, or a hindering constraint), my findings indicate that challenge and hindrance appraisals may be two ends of a spectrum. The effect of a negative challenge appraisal is akin to what I would have expected from employees appraising the stressor as a hindrance. More research on the relationship between stressors, challenge and hindrance appraisals, and outcomes is certainly warranted, and my results lay the foundation for a differential approach to treating these constructs.

Moreover, I complement the more macro-economic oriented literature on skill gaps by providing the explanation for a mechanism behind the negative effects of firm-level skill gaps. Skill gaps can, from a firm-level perspective, decrease a company's productivity because employees tend to be less productive. Skill gaps that are appraised as a hindrance imply that employees expect to lose or have lost resources that are relevant to them, i.e., skills that are required to fulfil their jobs. This perceived loss results in disengagement and negative affective states such as anger, frustration, or anxiety (LePine, 2022). Regarding aggregate disengagement, one can suspect that overall productivity will decrease, ultimately resulting in lower firm performance. Even though potentially costly additional investments in trainings and upskilling programs are required (McGuinness et al., 2017), disengagement has been found to be detrimental to performance and well-being, and positively related to burnout and turnover (Afrahi et al., 2021). As can be shown by my models, employees who do lack the skills necessary to

perform their day-to-day duties are more likely to leave the company they work for, indicating that the company will lose the skills of their leaving workforce. From a human capital point of view, disengaged employees that quit their jobs will likely be hired by other companies that can offer better working conditions, higher salaries, or better upskilling opportunities, thereby endangering the focal firm's competitive advantage – which is especially relevant if the skills are not firm-specific (Raffiee & Coff, 2016).

Regarding my sample, Burns and Baldvinsdottir (2005; p. 751) describe that management accountants “should augment their broad business (i.e., hybrid) skills, alongside the still essential and basic technical skills (...)”, since it were “(...) important for tomorrow's management accountants to show adaptability when facing the inevitable new challenges”. In the case of skill gaps, the ability to adapt to such challenges, i.e., changing market conditions, can be negatively affected (Mc Guinness et al., 2017).

C.5.2 Practical Implications

Overall, my results suggest that not possessing the skills necessary for fulfilling one's job can lead to lower job satisfaction and thus entice employees to leave their firm because of perceived skill gaps. It is therefore of vital interest to any firm (and, in fact, employee) to provide employees (and themselves) with the skills that are necessary for their day-to-day work. Not only does this follow the propositions of human capital theorists, who describe that those skills who are relevant for economic outcomes constitute human capital and, therefore, a competitive advantage for a firm, which any firm should retain (Ployhart et al., 2014); it is furthermore relevant for employees' satisfaction, performance, and eventually health to be well-equipped with skills. Any stressor that is appraised as a hindrance will have negative consequences for the aforementioned individual outcomes (LePine, 2022); following literature on the CHSF, I can assume that perceived current and future skill gaps can indeed be detrimental for employee health.

This chapter of my dissertation addresses this issue by pioneering the description of individual-level skill gaps. As stated above, I am confident that my measures for perceived current and future skill gaps are reliable and useful. Firms may want to apply these measures to map which employees suffer most from perceived skill gaps so that training and development opportunities can be applied more purposefully.

Regarding the negative effects of skill gaps, job crafting has been mentioned as a potential strain-reducing activity that could ameliorate negative effects of challenging job demands (Leana, Appelbaum, & Shevchuk, 2009; LePine, 2022;). Furthermore, training, support, and time-off could help buffer the detrimental effects of strain on employees (ibid.). This notion seems straightforward, given that training could provide employees with the skills that they require for their jobs. Arguing in this direction, Bakker, Demerouti, and Verbeke. (2004) describe that a lack of development opportunities may threaten employees' sense of achievement and meaningfulness, resulting in disengagement. As described above, disengagement is not something that firms benefit from. Therefore, development opportunities such as clear career prospects, training on and off the job, and upskilling programs may help firms retain their employees and thus sustain their competitive advantage.

C.5.3 Limitations and Future Research Directions

I examined individual effects of skill gaps on employee satisfaction; aggregating these gaps by using my measures may contribute to explaining turnover or organizational performance effects within a firm. However, I did not measure explicitly either turnover or performance; researchers may want to validate my findings using different outcome variables and thus complement the literature on individual-level skill gaps.

While this chapter further contributes to the CHSF, the stressors that employees are subject to, and their appraisals, we are still “in the infancy of understanding (...) moderating

conditions and how perceived personal resources may alter the outcome of the appraisal process” (LePine, 2022; p. 245). It would indeed be a promising avenue for future research to control for the individual endowment with skills when regarding perceived skill gaps and their appraisals: employees with lower levels of (relevant) skills might appraise a skill gap as more challenging, given that they might regard a skill gap as an opportunity to acquire more resources, and thus an opportunity for personal growth. Employees already endowed with high levels of skills that perceive a skill gap may likely not know how to address the requirements of their job and feel threatened. In any case, a report on specific employee skills may be warranted.

Furthermore, and as mentioned above, the results of my mediated structural equation models indicate that research on challenge and hindrance appraisals is far from complete, and that the investigation of interactions or other forms of connection between different appraisals may be a promising avenue for understanding the cognitive component of experiencing stress in more detail.

All my measures are self-reported, which can confound my findings. Although I control for social desirability bias by using *impression management* as a control variable, I cannot rule out that respondents still answered the questions regarding the skills they currently possess in an overstated fashion. This is also a relevant limitation to my *perceived skill gaps* constructs: as McGuinness et al. (2017, p. 8) note, “(...) responses of workers may be more biased as they are more likely to consider future career requirements, rather than immediate job requirements, when responding to questions on skill shortfalls.”

Although my methodology is well-founded both in theory and empirics, it cannot reveal causality – a survey can, in contrast to a field experiment, only indicate correlations. I use several control variables that could potentially have confounded my analyses; however, since all measures are self-reported, I must acknowledge that a risk of common method biases exists.

Nonetheless, the results of my CFA analyses indicate that my measures are reliable and distinct from each other, and that there is no common method factor.

The usual caveats of survey research as well as SEM methodology apply.

I conducted my survey in a single company setting that allows for a diverse and representative picture of skill gaps to be drawn. I am confident that the finance functions of larger MNEs should be somewhat similar. However, the generalizability of my findings towards other organizations is not a given and should be validated by applying my skill gaps measures across different companies and industries as well.

D How Leader Stressor Appraisals Translate into Follower Stressor Appraisals – A Crossover Perspective⁹

Abstract

I develop and test an empirical model that describes how a typical workplace stressor, workload, is appraised by both leaders and followers and how the leaders' cognitive appraisals cross over to their followers. I further explore how leader-member exchange can amplify the crossover effect and discuss implications on followers' job satisfaction. Basing this chapter on a survey of $n = 536$ financial managers of a large multinational, I can confirm that crossover effects exist, albeit not in the direction I hypothesized. The results of my moderated-mediation structural equation models indicate that leader stressor appraisals have a consistently detrimental effect on follower stressor appraisals: Both leader challenge and hindrance appraisals enhance follower hindrance appraisals and reduce follower challenge appraisals, thereby decreasing their job satisfaction. My results also indicate that LMX enhances the crossover of leader stressor appraisals to follower stressor appraisals. I eventually discuss implications for both research and practice.

⁹ This chapter is based on Rester, F., Reimer, M. & Schaupp, D. (2022). How Leader Stressor Appraisals Translate into Follower Stressor Appraisals – A Crossover Perspective. Unpublished working paper. Preliminary findings have been presented at the 82nd Annual Meeting of the Academy of Management 2022 in Seattle, USA. I am grateful for helpful comments by participants of various research seminars at the IMC.

D.1 Introduction

Stress in the workplace has often been described as detrimental to organizational and individual outcomes alike (Karasek, 1979; Lazarus & Folkman, 1984; Sonnentag & Frese, 2013). More recently, however, researchers in the field of business psychology and management have provided a more nuanced view by examining different positive and negative aspects of stress (e.g., LePine, Zhang, Crawford, & Rich, 2016). Based on the transactional theory of stress (Lazarus & Folkman, 1984), researchers have found that certain stressors can be evaluated as motivating or even benign (i.e., as a challenge), while others would be appraised as threatening or harmful (i.e., as a hindrance; Webster, Beehr, & Love, 2011; Cavanaugh, Boswell, Roehling, & Boudreau, 2000). An individual's cognitive appraisal has tremendous consequences for both organizational and individual outcomes: According to the challenge-hindrance stressor framework (CHSF), a stressor's negative impact can be mitigated if an employee appraises the stressor as challenging. Positive emotions elicited by a challenge appraisal will evoke a feeling of personal growth and work accomplishment, thus leading to higher job satisfaction and performance, lower turnover intention, and more favorable health outcomes. On the other hand, an appraisal of a stressor as a hindrance will enhance negative effects on job satisfaction (Podsakoff, LePine, & LePine, 2007), turnover intention (*ibid.*), performance (LePine, Podsakoff, & LePine, 2005; LePine et al., 2016; Ma, Peng, & Wu, 2021), psychological withdrawal (Pearsall, Ellis, & Stein, 2009), and health outcomes like burnout (Gerich, 2017; Gerich & Weber, 2019).

Following this view on potential benign features of stress first described by Hans Selye in 1956, scholars have since laid out a roadmap to assess important antecedents and consequences of stress (Cavanaugh et al., 2000; LePine et al., 2005; LePine, 2022). However, while the CHSF has advanced our understanding of stress greatly, it has yet to be enriched by studies focusing on factors that influence the stressor-appraisal relationship. This question is relevant

since it could alter the entire stress process (Lazarus & Folkman, 1984), thus leading to more favorable work outcomes. The growing literature in this field has already identified factors such as goal orientation (Ma et al., 2021), task efficacy (Liu & Li, 2018), or job control and social support (Gerich & Weber, 2019) to moderate the stressor-appraisal relationship. It is noteworthy that LePine et al. (2016) were the first to introduce a social perspective on such moderating factors. In their study, they examine how charismatic leadership influences the appraisal of stressors. Nonetheless, we have yet to extend our view to the role of social processes for stressor-appraisal relationships. In particular, it is likely that leaders play an important role in their followers' cognitive stressor appraisal. Specifically, Ma et al. (2021, p. 15) note in their paper that the "(...) literature focuses primarily on challenge and hindrance stressors experienced by employees and how the stressors relate to employees' own work outcomes", while "(...) supervisors also encounter these stressors, and their stress experience may have crossover effects on employees' perceptions of stressors, appraisals and work outcomes." Indeed, the relationship between leadership and stress has received little attention in management research (Harms, Credé, Tynan, Leon, & Cheung, 2017). Following this discussion on the importance of leader-follower relationships in stress processes, I develop and test an empirical model that sheds light on potential crossover effects. In particular, I provide a first examination of how leaders themselves appraise stressors and how this in turn relates to their followers' appraisal of the same stressor. I do so by including the perspective on leaders who themselves are individuals and therefore also subject to most of the stressors that their followers experience (e.g., workload).

Since appraising is a subconscious cognitive process (Lazarus, 2006) that elicits certain emotions such as anger, anxiety, or joy (Scherer, Schorr, & Johnstone, 2001), I can assume that it is recognizable by others (Westman, 2001). Emotions are often expressed in facial, vocal, or behavioral cues, which can be observed. Given that leaders express their appraisal of a stressor

in such a way, this will be visible to their followers and may influence their appraisal of the same stressor – the appraisal may therefore cross over to their followers.

Crossover theory posits that stress in the workplace can indeed cross over from one spouse to the other. In more detail, such crossover effects can occur by means of emotional contagion, which can be both subconscious and conscious (Gump & Kulik, 1997; Hatfield, Caccioppo, & Rapson, 1994). We know that as a special form of emotional contagion, mood contagion occurs between leaders and followers by means of mimicry (Sy, Côté, & Saavedra, 2005). I expect that followers will also recognize their leaders' appraisals and subconsciously imitate the cues expressed by them, thereby experiencing similar appraisals. Furthermore, on a more conscious level, I propose that followers perceive and empathically react to their leaders' stressor appraisals. According to Lamm, Batson, and Decety's (2005) and Wondra and Ellsworth's (2015) findings, humans generally tend to react empathically towards others and subsequently reciprocate. These findings imply that when a leader's appraisal is salient in followers, they will appraise the same stressor similarly. Consequently, I argue that leaders' stressor appraisals will cross over to their followers.

Following these findings and building on the CHSF (Cavanaugh, et al., 2000; LePine, 2022; Webster et al., 2011) and crossover theory (Bakker, Westman, & van Emmerik, 2009; Westman, 2011; Westman & Etzion, 1999), I predict that how leaders appraise their stressor will influence their followers' stressor-appraisal relationship. In particular, I expect that when leaders appraise their workload as a challenge (hindrance), their followers will be more likely to also appraise their workload as challenge (hindrance). Furthermore, since challenge and hindrance appraisals have opposite effects on employee outcomes, I argue that leaders' challenge (hindrance) appraisals will mitigate their followers' hindrance (challenge) appraisals. I also investigate how the total stressor appraisals of followers influence their job satisfaction.

My prediction implies that leaders' stressor appraisals must be visible to followers, and that followers must be susceptible to them for crossover processes to take place. I suppose that visibility and susceptibility are greatly influenced by leader-member exchange (LMX; Graen & Uhl-Bien, 1995), which describes the quality of the relationship between leaders and followers. It has consistently been named an important positive phenomenon, being characterized by high levels of mutual trust, emotional and cognitive support, access to resources for leaders and followers alike, and other benign individual and organizational level outcomes (Dulebohn, Bommer, Leiden, Brouer, & Ferris., 2012). I build on this understanding of leader-follower relationships and predict that the better their relationship, the more appraisals are shown (by the leader) and observed (by the follower) – thereby crossing over. Specifically, I suspect that a leader's challenge appraisal will elicit a more significant challenge appraisal of the same stressor in her followers, and vice versa, if the leader-member exchange between leader and follower is higher. This prediction bears important consequences, which have not yet been investigated in the literature on the CHSF. If leaders transmit their hindrance appraisal to followers, high levels of LMX might enhance this process and thus foster dissatisfaction and lower performance. LMX could, therefore, also have a negative impact on followers. Overall, leader-follower relationships might be more complex than previously assumed and demand further investigation, particularly in the context of stress.

D.2 Theory Development

D.2.1 The Transactional Theory of Stress and Appraisal

Stress in the workplace is a thoroughly researched phenomenon and has received tremendous attention in the past years in both academia and practice. The transactional theory of stress (Lazarus & Folkman, 1984) hereby remains a dominant theory in explaining humans' perceptions of and reactions to stress. It posits that humans perceive a so-called stressor and

subconsciously evaluate whether their cognitive, mental, or behavioral resources are sufficient to cope with it. This process of subconscious evaluation, or appraisal, determines subsequent emotional responses and coping strategies (Lazarus, 2006; Scherer, Schorr, & Johnstone, 2001). While any stressor will evoke strain, its appraisal can be differentiated further. Following Selye's (1956) notion of eustress and distress, Cavanaugh et al. (2000) have described both challenge stressors, which can promote motivation and personal growth, and hindrance stressors, which are perceived as threatening or thwarting one's goals. Scholars have followed up on this notion and found that challenge stressors were associated with higher levels of performance and job satisfaction, while hindrance stressors had opposite effects (LePine et al., 2005; Pearsall et al., 2009). Podsakoff et al. (2007) further showed that job satisfaction and turnover intention were similarly influenced by challenge and hindrance stressors: challenge stressors enhanced job satisfaction and thereby decreased turnover intention, whereas hindrance stressors had the opposite effect.

This aggregate description of challenge and hindrance stressors does, however, not take into account that the subconscious appraisal process is highly individual and depends on both person and situation factors (Lazarus & Folkman, 1984). Building on Webster et al.'s (2011) paper on individual differences in appraisal, researchers have begun to describe that appraisals mediate the relationship between stressors and an outcome (e.g., Gerich & Weber, 2019; Gerich, 2017; LePine et al., 2016; Liu & Li, 2018; Ma et al., 2021; Prem et al., 2017). Some authors even showed that several stressors can be appraised both as a challenge and a hindrance, e.g., workload (Gerich & Weber, 2019; Gerich, 2017), or learning demands (Prem et al., 2017). Most agree that challenge appraisals are in general favorable, while hindrance appraisals are detrimental to health outcomes, performance, or satisfaction (Gerich & Weber, 2019; LePine, 2022; LePine et al., 2016). Consequently, this implies that challenge and hindrance appraisals are distinct constructs and must be investigated on an individual level.

Regarding individual differences in stressor appraisals, leaders as well as followers may be subject to similar stressors in the workplace and will individually appraise these stressors, too. Leadership has received some attention in stress literature since leaders are regarded as providers of resources such as structure, assistance with problem-solving, as well as social and material support. According to O’Driscoll and Beehr (1994), these resources mitigate role stressors such as role ambiguity and uncertainty. Arguably, leaders therefore play an important role in shaping employees’ perception of and reaction to stress. Extending this notion by a CHSF perspective, LePine et al. (2016) account for stressor appraisals and describe how charismatic leaders actively reframed potentially threatening situations for their followers so that they would appraise them as less hindering and more challenging. Furthermore, they examine the relationship between stressor appraisals and task performance. The authors argue that charismatic leaders express positive emotions and behaviors such as optimism, confidence, and enthusiasm, thus enhancing their followers’ emotional and motivational states and directing them to more problem-oriented coping strategies. Although I acknowledge that LePine et al.’s (2016) study is an important contribution to literature on stressor appraisals, I believe that taking a closer look at the mechanism explaining how such a transfer of emotional and motivational states takes place is warranted. While the authors draw a distinction between the moderation of stressor-appraisal and appraisal-outcome relationships, I argue that investigating how charismatic leaders distinctly influence appraisals, and which role their very own appraisals play in this regard, may improve our understanding of the influence of leaders on their followers’ perception of and reaction to workplace stressors.

I propose that these differences and similarities between leader and follower appraisals can be meaningful, and that leader stressor appraisals can be contagious towards followers. An appraisal will elicit emotions (Scherer et al., 2001); these emotions may be visible and consequently elicit an appraisal in others. As Lazarus and Folkman (1984) note, an individual’s

appraisal of a stressor can be influenced both by personal and situational factors like beliefs, perceived control, and commitment, by temporal factors – or, as I presume, by another person’s appraisals. I base my proposition on crossover theory and, more specifically, social contagion theory.

D.2.2 Crossover and Social Contagion

Crossover theory (Bakker & Demerouti, 2013; Bakker, Westman, & van Emmerik, 2009; Westman & Chen, 2017; Westman & Etzion, 1999) suggests that stress in the workplace can be contagious towards one’s spouse (Westman, 2001), colleagues, or between leaders and followers (see, for example, Westman & Etzion, 1999; Westman & Etzion, 1995).

Job stressors and psychological strain, but also positive emotional states can cross over from one individual to the other via different mechanisms: Westman (2001) proposes direct crossover, indirect crossover, and common experiences as mechanisms that transmit stress. Direct crossover implies that, especially in a relationship between spouses, one shares the other’s emotional state, and thus reacts empathically towards the partner. If one spouse suffers from stress, crossover is likely to occur when their partner cares for them and empathically identifies herself with the other.

Indirect crossover, on the other hand, occurs via moderators like, e.g., social support, or undermining behaviors. These coping mechanisms can transmit the strain experienced by an individual to others if the individual is suffering from burnout and, thus, unable to provide the others with adequate social support, ultimately increasing their stress (Westman & Chen, 2017).

Lastly, stressors experienced by both partners within a relationship can elicit similar strain, and thus can be “(...) considered a spurious case of crossover” (Westman & Chen, 2017; p. 240).

While most research has focused on spillover effects within employees to crossover effects from said employees to their spouses (i.e., work-family-conflict), crossover theory can be applied to any role sender in any work environment (Bakker et al., 2012), e.g., a leader. Indeed, we can assume that such crossover processes are more likely to occur from leaders to followers since people of lower status are more prone to emotionally converging with those of higher status than vice versa (Anderson, Keltner, & John, 2003). Regarding the crossover process, Bakker et al. (2012) have identified different conditions under which crossover is more likely to occur, such as empathy, susceptibility, the frequency of exchanging views, similarity with the source of the crossover process, or climate. I argue, however, that such conditions can be further differentiated into mechanisms and situation factors. In my view, the crossover of stress can be explained by the social contagion of stressor appraisal, which can happen two-fold: a conscious, deliberate process of ‘tuning in’ on another person, and a subconscious process of automatically mimicking another person’s state of well-being.

Following Lazarus’ (2006) notion that an individual’s social context is one of the person-factors that can influence appraisal, I propose that crossover of stress can firstly be explained by a process similar to emotional contagion. An important part of social contagion (Marsden, 1998), emotional contagion can be described as the transmission of basic emotions such as anger, joy, fear, or surprise from one person to another by recognizing and reflecting vocal, facial, behavioral, or postural cues (Hatfield, Caccioppo, & Rapson, 1993). Emotional contagion initially happens automatically and subconsciously: the limbic system enables the automatic detection of aforementioned cues. This information about emotions is then transmitted within milliseconds to the neocortex, thereby establishing conscious awareness of the emotions absorbed (LeDoux, 2002; Prochazkova & Kret, 2017). Shamay-Tsoory (2011) posits that it is the mirror neuron system that enables motor mimicry, empathy, and thus emotional contagion. This process can also be observed when assessing mood contagion: Neumann & Strack

(2000) find that similarly to emotional contagion, a transmission of moods can happen by means of observation of another person's publicly displayed mood. Sy et al. (2005) have described in their study that leader moods can be contagious toward followers, and that this transmission of moods influences group effort, affective tone, and task strategy. Leaders, as public figures within an organization, typically control resources and interactions of followers and thus have more opportunities to express their emotions, moods, or in my case stressor appraisals. Consequently, followers who are dependent on leaders attend to their expressions.

While I acknowledge that appraisals elicit emotions, I presume that emotions can influence appraisals as well. Scherer et al. (2001) note that appraisals are a consequence of perception, thus perceiving leaders' emotions will subconsciously lead to an appraisal. This subconscious, automatic process of contagion has often been taken as a paradigm in the organizational behavior and management literature (Tee, 2015). Extending this view, Moody, McIntosh, Mann, and Weisser (2007) in their study on rapid face reactions find that emotional contagion consists not only of the aforementioned automatic, subconscious response driven by the mirror neuron system, but also a more conscious, deliberate process of contagion, namely emotional experience, and feedback, or in short, empathy.

Interrelated with subconscious contagion processes, emotional experience and feedback, or empathy, is a cognitive process that allows for the conscious understanding of another's situation (Shamay-Tsoory, Aharon-Peretz, & Perry, 2009). This cognitive form of emotional contagion enables a distinction between oneself and the other, thereby facilitating perspective taking and empathy (Decety & Jackson, 2006).

Arguing in this direction, Lamm et al. (2005) find that the manipulation of cognitive appraisals affects empathy. In their neuro-psychological study, they showed that when positive effects of a treatment against pain were salient, positive emotions ensued, and vice versa. Wondra and Ellsworth (2015) advance their understanding by proposing an appraisal theory of

empathy: when observers appraise a target's situation, they would empathically experience similar emotions – if the target's situation were relevant to the observers. Furthermore, and in line with Hobfoll et al. (2018) and Halbesleben et al. (2014), Wondra and Ellsworth (2015) state that the observers' appraisal of the congruence between theirs and the target's goals will drive valence. If the leader's and the follower's goals are congruent, any obstruction to the leader's goals (such as hindrance appraisals of a stressor) will lead to a more hindering appraisal and consecutive negative emotions of the follower as well. Similarly, if a leader's challenge appraisal will elicit positive emotions; this will result in followers appraising the same situation as similarly challenging. Consequently, I argue that a conscious, empathic experience of another person's emotions leads to a more pronounced crossover of appraisals.

This leads me to my hypotheses that when leader stressor appraisal is salient in followers by means of observation and subconscious mimicry of affective cues as well as conscious empathy, their stressor appraisal would elicit similar emotions and therefore be similar as well. To put it differently, leader challenge appraisal will likely cross over to follower challenge appraisal, and leader hindrance appraisal will cross over to follower hindrance appraisal. Therefore, I propose the following hypotheses:

H1a: Leader challenge stressor appraisal is positively related to follower challenge stressor appraisal.

H1b: Leader hindrance stressor appraisal is positively related to follower hindrance stressor appraisal.

Furthermore, the transactional theory of stress suggests that challenge and hindrance appraisals have opposite effects on personal and organizational outcomes (Lazarus & Folkman, 1984). Challenge appraisals elicit positive emotions and motivational states, and thus lead to more problem-focused coping strategies. (Liu & Li, 2018). LePine et al. (2016) proposed that

the transfer of positive motivational and emotional states can ameliorate hindrance appraisals. Observing and interpreting such states in leaders may therefore evoke a less pronounced hindrance appraisal in followers. Similarly, hindrance appraisals elicit negative emotions such as anger, frustration, and lead to detrimental, emotion-focused coping strategies. Consequently, I can assume that if such negative emotional and motivational states arising from leader hindrance appraisals are salient in followers, their challenge appraisals will be less pronounced. This leads me to the following hypotheses:

H2a: Leader challenge stressor appraisal is negatively related to follower hindrance stressor appraisal.

H2b: Leader hindrance stressor appraisal is negatively related to follower challenge stressor appraisal.

D.2.3 The Role of LMX

LMX describes the quality of the relationship between leaders and their followers (van Breukelen, Schyns, & LeBlanc, 2006; Graen & Uhl-Bien, 1995). In their meta-analysis, Gooty et al. (2010) have extensively described the role of emotions in LMX relationships. Based on social exchange theory (Blau, 1964), LMX theory assumes that in a high-quality relationship between a leader and a follower, information sharing, mutual trust and respect, higher decision latitude for followers and leader support are more prevalent. Furthermore, since such a high-quality relationship would be based on reciprocity, we can assume that leader and follower goals are congruent. As mentioned above, Wondra & Ellsworth (2005) posit that if goals are congruent between an observer and a target, the situation of the target becomes relevant to the observer. Consequently, if a leader with congruent goals appraises a stressor and shows affect, the observing follower would experience similar emotions. I can deduce that appraisals of followers who possess a good relationship with their leader will be similar to their leader's

appraisals. I thus presume that higher levels of LMX will enhance the contagion of leader stressor appraisals towards followers.

Dienesch and Liden (1986) further posit that leader-follower relationships characterized by high levels of LMX typically provide mutual trust, support, and formal as well as informal resources. Leaders therefore provide or even exchange important resources with such followers that they maintain good relationships with (Hobfoll et al., 2018).

The literature on leadership-stressor appraisal relationships has previously mostly regarded leadership styles such as transactional and transformational leadership (Lyons & Schneider, 2009; Zhang, LePine, Buckman, & Wei, 2014), or charismatic leadership (LePine et al., 2016). Their findings regarding the provision of motivational and cognitive resources by leaders have been somewhat inconclusive. I follow, however, LePine's (2022, p. 245) call for further research on factors moderating the stressor-appraisal relationship:

“Although research has concluded that the appraisal process can be positively or negatively impacted by situational factors and individual attributes, we are in the infancy of understanding these moderating conditions and how perceived personal resources may alter the outcome of the appraisal process.”

In my view, regarding the quality of the relationship between leaders and followers provides a more suitable explanation for the effect that leadership and the resources associated with it can have on followers' stressor appraisals. LMX as a social exchange process “(...) begins with more limited social ‘transactions’ [e.g., transactional leadership], but for those who are able to generate the most effective LMX relationships, the type of leadership that results is transformational.” (Graen & Uhl-Bien, 1995, p. 239). The concept of LMX hence provides a more nuanced view on leadership by focusing on the quality of the relationship between leaders and followers instead of leadership styles.

When regarding leadership from a crossover perspective, we find that different situation factors exist that can explain why the crossover of stressor appraisals is more likely to occur in relationships characterized by high levels of LMX. In general, such relationships are characterized by high levels of support, interaction, and trust; the transmission of formal and informal rewards as well as emotional and cognitive resources from leaders to followers; and subsequent reciprocal exchanges (Dienesch & Liden, 1986; Ilies, Nahrgang, & Morgeson, 2007). It can safely be assumed that such close relationships between leaders and followers will also lead to frequent formal and informal exchanges and meetings, and thus increase visibility towards each other. Bakker et al. (2012) note that crossover is more likely to occur when susceptibility towards the emotions of colleagues is high. Since leaders are public figures, they would (perhaps unwillingly) show their emotions towards their followers. In relationships characterized by high levels of LMX, both leaders and followers experience higher levels of psychological safety. LMX as a social exchange theory implies that this state of feeling safe among each other is based on reciprocity (Blau, 1964). I can thus assume that followers would be emotionally and cognitively closer to leaders, thereby being more susceptible towards their emotions, making crossover effects more likely.

Furthermore, high LMX-relationships require that the leader provide cognitive, emotional, and other resources; for this to happen, frequent interactions with those followers the leader has a high-quality relationship with are important. I can thus deduce that followers in high LMX-relationships are more susceptible to their leader's stressor appraisals than those in low LMX-relationships because they interact more often. After all, LMX serves as a validated proxy for the bond between leaders and followers, and the support that leaders in such close relationships can provide (Harms et al., 2017; Lyons & Schneider, 2009). Since LMX theory is grounded in Social Exchange theory (Blau, 1964), followers tend to reciprocate their leaders' support and provision of resources. In a crossover context, this can imply that that followers in

high LMX relationships increase their effort to take their leaders’ perspectives and thus ‘tune in’ on their appraisals.

Consequently, I suppose that LMX amplifies the crossover of stressor appraisals from leaders to followers. This effect seems counterintuitive, since an amplified hindrance appraisal would suggest that LMX can have negative consequences; I argue however that the negative emotions associated with hindrance appraisals are more visible and become more salient in closer relationships between leaders and followers and are consequently more likely to cross over. I propose the following hypothesis:

H3: The crossover effect of leader stressor appraisal towards follower stressor appraisal (challenge and hindrance) is stronger in the presence of high levels of LMX than in the presence of low levels of LMX.

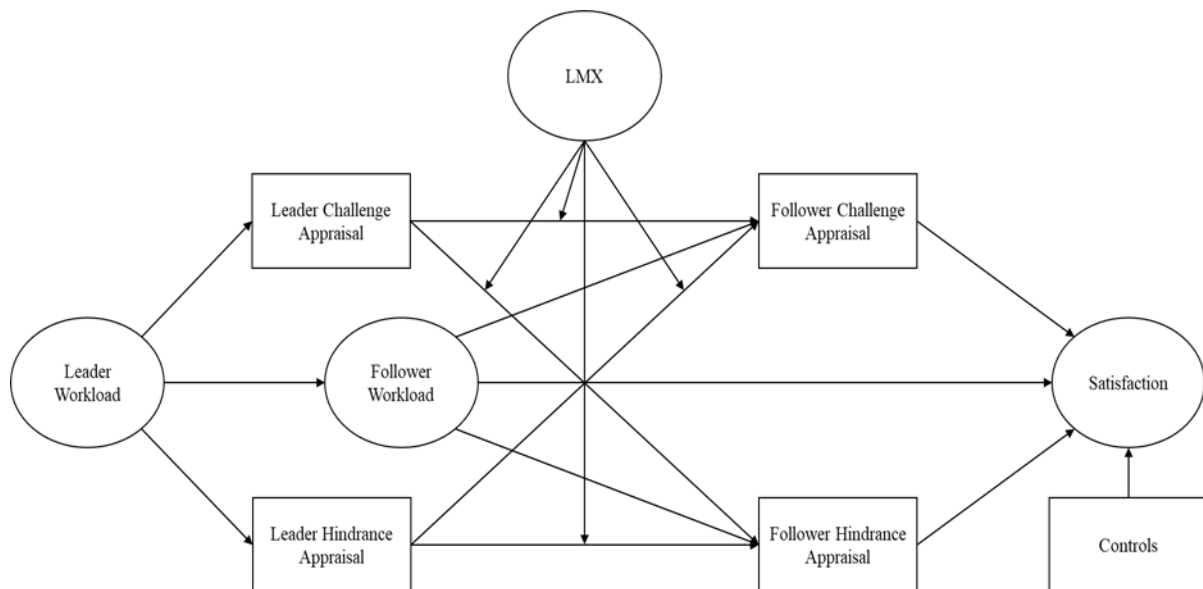


Figure D-1 Hypothesized Path Model

D.3 Methodological Specifics of Chapter D

D.3.1 Sample and Procedure

I collected my data within the scope of a larger research project in cooperation with a large German multinational company. In order for my sample to be homogeneous, I limited the survey to all financial managers of the company. Financial managers adhere to similar organization-specific standards and a common language and are prone to similar job stressors such as role conflict, role ambiguity, or workload (Maas & Matejka, 2009). Similar to Ma, Kerulis, Wang, & Sachdev's (2020) and Liu & Li's (2018) studies on stressor appraisals, I conducted my survey in a single-company setting; thus, organization-specific parameters such as corporate culture or hierarchy levels were constant and homogeneous across the population. Surveying different organizations would likely have confounded our findings in this regard. Furthermore, the setting allowed for obtaining invaluable information through workshops, pre- and post-survey interviews, and discussions with employees. I was also given access to the firm's HR system data on employees' age, gender, region, and hierarchy levels. I conducted the survey in 2019. In the design of the questionnaire, I followed commonly accepted recommendations by Christian, Dillman, and Smyth (2009), and administered the questionnaire as an online survey. Before sending out online invitations to take part in the survey, I discussed it thoroughly with two possible respondents at the company, whose responses were subsequently excluded from the survey. Personalized invitations to the questionnaire were sent out to all 915 financial managers within the company; the invitations were announced and sent out by the business unit managers of the company. The questionnaire remained in the field for six weeks, and the business unit managers sent regular reminders to all participants. To minimize response bias, the following measures were taken (Meade, Watson, & Kroustalis, 2007): The company assigned all participants a unique identification code. The research team only received this code alongside the filled-in questionnaires and could therefore guarantee that the answers be treated

anonymously and confidentially. Furthermore, in the survey, the research team communicated that participants could skip questions and exit the survey at any time, and that all results be analyzed anonymously and on an aggregated level. Lastly, the items within each construct were randomized, and constructs were asked in a randomized fashion so I could reduce order and fatigue biases (Lavrakas, 2008).

To examine leader-specific characteristics, I also obtained each participant's leader's unique identifier. However, to minimize response bias here as well, I excluded leader identifiers if participants indicated that they would not consent to me obtaining it.

I received 536 filled-in questionnaires (respondent rate = 58.6%). I also received 384 responses without missing information on leader identifiers. Of the 384 participants who provided me with their leader's unique identifier, I have received 295 responses where the employee's leader also responded to the survey, and I can thus calculate all relevant employee- and leader-specific variables.

Again, general descriptives statistics are described in section B.3.2 of this dissertation.

D.3.2 Measures

The stressor I asked in this survey is commonly used throughout prior literature on stressors and appraisal (cf. LePine et al., 2005). *Workload* was measured with four items derived from Karasek's (1979) paper on job demands ($\alpha = .75$). I also decided to choose this particular stressor construct since my sample consisted exclusively of financial managers, and financial managers are particularly prone to workload (Maas & Matejka, 2009). This was also reflected in several comments of participants which could be added at the end of the questionnaire. Workload items were framed in a negative way (e.g., "I do *not* have enough time to complete my job") to entice the participants to perceive them as potentially strain evoking. Participants were asked to indicate to which degree they agreed with the respective items. High

scores on the five-point Likert scales which ranged from 1 = 'Not at all' to 5 = 'To a large extent' would therefore indicate that the respondent experienced the respective circumstances as highly stressful. *Leader workload* was consequently measured with the exact same items ($\alpha = .76$); however, only those participants that possessed a leader identifier were considered.

After conducting a principal component factor analyses with varimax rotation (Costello & Osborne, 2005), I found that one item of the leader workload construct had a very low factor loading of .08 and instead loaded onto a sixth factor with a cross loading of .95. It was worded somewhat differently than the other workload items (i.e., "*I experience conflicting demands in my work*"), hence I decided to exclude it from both the workload and the leader workload construct. When repeating the principal component analysis, I received five latent factors with Eigenvalues of 1 or larger, as expected.

I measured the appraisal of the stressor with two items that followed the stressor-items directly on the same page of the questionnaire. *Challenge appraisal* was asked with "I feel that these conditions are a beneficial opportunity for me", while *hindrance appraisal* was asked with "I feel these conditions are a hindering constraint for me". Again, I asked the participants to indicate whether they agreed with the statements regarding the aforementioned stressor items on a five-point Likert scale. This follows the approach of Gerich (2017), LePine et al. (2016) and Webster et al. (2011) closely. Both appraisal items referred to the stressor as a whole, not to its single items. The wording is consistent with Lazarus' and Folkman's (1984) understanding of challenge and hindrance appraisals. With this direct assessment of the stressor, the participants were able to indicate whether they appraised the specific stressor as a challenge, a hindrance, both, or none. This allows for a more differentiated investigation of stressor appraisal. Again, *leader appraisal* was measured with the same appraisal items, except only leaders were considered.

Leader-member exchange ($\alpha = .94$) was measured using the items proposed by Janssen and van Yperen (2004). Participants were asked on a seven-point Likert scale ranging from 1 = “To a very low extent” to 7 = “To a very high extent” to which degree the items characterized their relationship with their direct leader. I thus account for the quality of the relationship between a leader and a follower since it is expected to moderate employee appraisal and is therefore regarded as predictive for performance and attitudinal employee outcomes. Because one of the LMX items had a high cross loading of .42, I decided to exclude it from further analyses.

Job satisfaction, which I use as my outcome variable, was measured with five items from Bacharach, Bamberger, & Conley’s (1991) seminal paper ($\alpha = .93$). I asked participants on a seven-point Likert scale ranging from 1 = “Very dissatisfied” to 7 = “Very satisfied” how content they were with, e.g., “[their] present job when compared to jobs in other organizations”.

Control Variables included *age*, *gender*, *hierarchy level* and *region*. We can assume that more senior financial managers have broader access to resources, while those with longer tenure at the company are able to accumulate more social capital and resources through more established networks. Furthermore, since I analyze leader-follower relationships and an emotional component within it, I control for *tenure with the same leader*. Since we can assume that respondents that are geographically close to their leaders will be more exposed to their stressor appraisals and emotions, I control for *geographical proximity to the leader*, which ranged from 1 = “Not in the same region” to 6 = “In the same office”. I also included one measure of *self-rated performance* as a control variable.

The study design is based on a single source for both independent and dependent variables. I therefore decided to include *impression management* as a control variable for possible social desirability bias ($\alpha = .72$). The three items were adopted from Paulhus (1986).

I then tested my constructs' and items' reliability and calculated Cronbach's alpha and composite reliability (CR). As can be seen in Table D-1, Cronbach's alpha values are consistently higher than .87, and Raykov's factor reliability scores are not lower than .7 while most are close to 1. Mehmetoglu & Jakobsen (2017) recommend only using constructs with CR scores of .7 or higher. I can therefore assume that the items indeed are reliable measures of the constructs I asked.

Variables	β	α	CR	AVE
Workload		.75	.759	.541
My job requires me to work very hard.	.78			
I do not have enough time to do my job.	.83			
I experience conflicting demands at work. *	.67			
My job involves a great deal of work to be done.	.81			
Leader Workload		.76	.770	.545
My job requires me to work very hard.	.88			
I do not have enough time to do my job.	.80			
I experience conflicting demands at work. *	.08			
My job involves a great deal of work to be done.	.82			
LMX		.94	.945	.750
My direct leader would be personally inclined to help me solve problems in my job.	.75			
My working relationship with my direct leader is effective.	.90			
I have enough confidence in my direct leader that I would defend and justify her/his actions.	.89			
My direct leader considers my suggestions for change.	.86			
My direct leader and I am suited to each other.	.91			
My direct leader understands my problems and needs.	.88			
My direct leader recognizes my potential. *	.78			
Job satisfaction		.93	.944	.768
How satisfied are you with your present job when you compare it to jobs in other companies?	.85			
... the progress you are making toward the goals you set for yourself in your profession?	.86			
... the chance your job gives you to do what you are best at?	.87			
... your present job when you consider the expectations you had when you took the job?	.90			
... your present job in light of your career expectations?	.86			
Impression Management		.72	.737	.484
I never cover up my mistakes.	.79			
I always obey laws, even if I am unlikely to get caught.	.79			
I never take things that do not belong to me.	.83			

Table D-1: Latent Constructs and Corresponding Items

Factor loadings, Cronbach's Alpha, Composite Reliability, and Average Variance Extracted. Asterisks denote excluded indicator variables.

Before testing my hypotheses, I ran confirmatory factor analyses (CFA) to assess my model's fit to the data. Concerning the constructs' discriminant validity, I compared the average variance extracted (AVE) of my constructs to the values of the squared correlations of the latent variables and find that all AVE values are larger. However, I find that AVE for impression management, which I use as a control variable, is below .5, hence implying insufficient convergent validity. According to Fornell and Larcker (1981), convergent validity can still be assumed if at the same time, CR scores are higher than .5, which is the case. Furthermore, other studies surveying financial managers have used constructs with AVE of below .4 (e.g., Janke, Mahlen-dorf, & Weber, 2014). I therefore suppose that the scales for each construct are appropriate. When I repeated our analyses and excluded impression management, the results remained the same in terms of direction and magnitude.

Doornik-Hansen tests for multivariate normality are highly significant, hence I can assume that our data are jointly non-normally distributed (Doornik & Hansen, 2008). Therefore, I decided to use Satorra-Bentler standard errors to estimate my measurement model (Satorra & Bentler, 1994). Regarding the latent constructs that I asked, I find that five factors have an Eigenvalue of 1 or higher. To validate these findings, I ran a nested model approach and found that my hypothesized five-factor model (i.e., workload, leader workload, LMX, job satisfaction, and impression management) had superior goodness-of-fit statistics than four other nested models which combined the items to four or less factors (e.g., a four factor model with $\chi^2[164] = 419.043$, CFI = .922, TLI = .909, RMSEA = .075, $\Delta\chi^2 = 207.68$, $p < .05$), which suggests that my model fits the data significantly better than alternative models.

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA	AIC	BIC	$\Delta\chi^2$
(1) Five Factor Model (WL, SWL, LMX, SAT, IMP)	211.36	160	1.32	.984	.981	.034	15154.97	15408.14	.
(2) Four Factor Model (WL/SWL, LMX, SAT, IMP)	419.04	164	2.56	.922	.909	.075	15374.89	15613.60	207.68
(3) Three Factor Model (WLSWL, LMX/SAT, IMP)	1319.40	167	7.90	.646	.597	.159	16366.13	16593.98	1108.04
(4) Two Factor Model (WL/SWL, LMX/SAT/IMP)	1466.57	169	8.68	.601	.552	.167	16537.55	16758.18	1255.21
(5) One Factor Model (All items loading onto the same factor)	Not full rank								

Table D-2 Nested Models

Comparative goodness-of-fit statistics for nested models (WL = Workload, SWL = Leader Workload, LMX = Leader Member Exchange, SAT = Satisfaction, IMP = Impression Management)

The goodness of fit of the five factor measurement model is, according to Schermelleh-Engel et al. (2003) and Hu and Bentler (1999), good with a χ^2 (160) of 211.359, a Satorra-Bentler adjusted comparative fit index (CFI) of .984, a Satorra-Bentler adjusted Tucker-Lewis index (TLI) of .981, Satorra-Bentler adjusted root mean squared error of approximation (RMSEA) of .034 and standardized root mean squared residual (SRMR) of .044.

D.3.3 Analytical Strategy

I used structural equation models to test my hypotheses using Stata 17.0, and, additionally, a moderated mediation structural equation model using the R *lavaan* package to receive further support for hypotheses 3. To account for missing values and non-normality of my data, I used a Satorra-Bentler estimator (Satorra & Bentler, 1994). By conducting both exploratory and confirmatory factors analyses, I tested my measures' convergent and discriminant validity and overall model fit. Direct and indirect effects were examined using structural equation modelling techniques. After conducting a split-sample SEM analysis to test hypothesis 3, I followed the approach of Klein and Moosbrugger (2000) to estimate a latent moderated mediation model

that allowed me to test not only direct paths, but also interaction effects between latent variables and therefore moderation effects on certain paths.

D.4 Findings

Descriptive statistics and zero-order correlations can be found in Table D-3. As described in previous literature on stressor appraisal, correlations between workload and its challenge appraisal were negative and significant, whereas they were positive and significant for its hindrance appraisal – both for leader and follower workload. I further find that the respective challenge and hindrance appraisals were negatively correlated with each other, and that leader hindrance appraisal was significantly negatively correlated with follower challenge appraisal, while at the same time being positively correlated with follower hindrance appraisal. No such correlation was found for leader challenge appraisal. I also find that both leader and follower hindrance appraisals are negatively correlated with LMX and satisfaction; LMX and satisfaction are themselves positively correlated, as can be expected.

D.4.1 Main Results

The mediation of workload by appraisals: I adopted Iacobucci's (2008) approach to test the mediation of the workload-job satisfaction relationship via cognitive appraisals. Since challenge and hindrance appraisals are theoretically and empirically related, I allowed for a covariance between the two appraisal items. In all our analyses, I controlled for gender, age, region, and tenure with both the company and the respective leader, geographical proximity to the leader, hierarchy level, impression management, and performance. Results are in table 4 and suggest that the workload-job satisfaction relationship is fully mediated by hindrance appraisal, while no such effect can be observed for challenge appraisal; it must be noted, however, that the path from challenge appraisal to satisfaction is positive and significant ($\beta = .677, p < .001$). The path between workload and its hindrance appraisal as well as the path between hindrance

appraisal and job satisfaction are highly significant, while the direct path between workload and job satisfaction is not. As can be expected from previous research on workload (Gerich, 2017), the path between workload and its hindrance appraisal is positive ($\beta = .499, p < .01$), whereas the path between hindrance appraisal and satisfaction is negative ($\beta = -.169, p < .01$). I can therefore assume that hindrance appraisal indeed negatively mediates the relationship between workload and job satisfaction. Sobel z-tests also confirm that hindrance appraisal fully mediates the relationship between workload and satisfaction (Sobel, 1982). I do not find any significant indirect effects between the structural paths in my model. This validates existing theory that has regarded workload as a hindrance stressor and thus renders my model useful.

Chapter D – How Leader Stressor Appraisals Translate into Follower Stressor Appraisals –
A Crossover Perspective

	n	Mean	St. D.	Skew	Min.	Max.	25%	75%
(1) Workload	536	3.34	.77	.01	1	7	2.75	3.75
(2) Challenge Appraisal	530	3.44	.97	-.54	1	7	3	4
(3) Hindrance Appraisal	528	2.58	1.04	.25	1	7	2	3
(4) Leader Workload	295	3.51	.67	.17	1	7	3	4
(5) Leader Challenge App.	294	3.40	1.01	-.57	1	7	3	4
(6) Leader Hindrance App.	295	2.51	.93	.51	1	7	2	3
(7) LMX	533	5.44	1.34	-1.15	1	7	4.71	6.33
(8) Job Satisfaction	530	4.91	1.33	-.69	1	7	4	6
(9) Age	476	36.41	9.35	.91	20	62	29	42
(10) Male	517	.48	.50	.14	0	1	0	1
(11) APAC	536	.22	.42	1.35	0	1	0	1
(12) Eastern Europe	536	.17	.38	1.74	0	1	0	1
(13) Germany	536	.23	.42	1.30	0	1	0	1
(14) Latin America	536	.06	.23	3.86	0	1	0	1
(15) Middle East/Africa	536	.06	.24	3.58	0	1	0	1
(16) North America	536	.10	.31	2.59	0	1	0	1
(17) Hierarchy Level	512	6.65	2.33	-.22	1	9	5	9
(18) Tenure with Company	505	9.33	8.28	1.49	1	46	3	13
(19) Tenure with Leader	501	2.93	3.18	4.23	1	34	1	3
(20) Proximity to Leader	513	4.72	1.70	-1.01	1	6	3	6
(21) Impression Mgmt.	529	5.85	1.35	-1.55	1	7	5	7
(22) Performance	524	5.70	.86	-1.02	1	7	5	6

Table D-3 Descriptives and Pairwise Correlations

See also the following page. N = 536, 295 of which are leaders. Factor scores are used to denote latent variables. Bold numbers indicate p-values < .05. The difference between the 536 cases in the final sample and the number of cases in single items in this table results from missing values. Please note that in the analyses of chapter C, I used the same control variables.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) Workload	1																					
(2) Challenge Appraisal	-0.16	1																				
(3) Hindrance Appraisal	0.32	-0.61	1																			
(4) Leader Workload	0.07	-0.04	-0.03	1																		
(5) Leader Challenge App.	-0.05	0.07	0.01	-0.19	1																	
(6) Leader Hindrance App.	0.07	-0.22	0.13	0.28	-0.62	1																
(7) LMX	-0.03	0.42	-0.23	-0.02	0.06	-0.23	1															
(8) Job Satisfaction	-0.09	0.62	-0.46	-0.01	0.05	-0.17	0.52	1														
(9) Age	0.18	-0.12	0.06	0.15	0.02	0.01	-0.02	0.04	1													
(10) Male	0.05	0.02	-0.03	-0.02	0.07	-0.12	0.09	0.02	0.08	1												
(11) APAC	-0.18	0.15	-0.10	-0.12	0.25	-0.08	0.02	0.11	-0.13	-0.17	1											
(12) Eastern Europe	-0.10	0.01	0.03	0.09	-0.24	0.21	0.08	0.04	-0.13	-0.03	-0.24	1										
(13) Germany	0.07	-0.10	0.03	-0.10	0.02	0.04	-0.06	-0.14	0.11	0.11	-0.29	-0.25	1									
(14) Latin America	0.08	0.04	-0.07	0.12	-0.10	-0.13	0.04	0.11	-0.06	0.08	-0.13	-0.11	-0.13	1								
(15) Middle East/Africa	0.01	0.05	-0.05	0.03	-0.01	0.00	-0.01	0.04	0.02	0.10	-0.14	-0.12	-0.14	-0.06	1							
(16) North America	0.18	-0.07	0.09	0.20	-0.01	-0.10	0.04	-0.02	0.22	0.01	-0.18	-0.16	-0.19	-0.08	-0.09	1						
(17) Hierarchy Level	-0.28	0.10	-0.04	0.03	-0.18	0.10	0.03	0.06	-0.53	-0.22	0.25	0.22	-0.20	0.01	-0.08	-0.18	1					
(18) Tenure with Company	0.16	-0.12	0.04	0.17	-0.01	0.02	-0.04	0.03	0.81	0.04	-0.13	-0.13	0.20	-0.03	0.03	0.07	-0.47	1				
(19) Tenure with Leader	0.03	-0.08	0.07	0.21	-0.19	0.07	0.06	-0.01	0.35	-0.01	-0.02	0.03	-0.05	-0.02	0.11	0.02	-0.12	0.37	1			
(20) Proximity to Leader	-0.17	0.00	-0.04	-0.09	0.01	0.03	0.02	-0.03	-0.26	-0.03	0.06	0.03	0.06	-0.15	-0.04	-0.07	0.26	-0.24	-0.05	1		
(21) Impression Mgmt.	0.01	0.12	-0.04	0.09	0.05	-0.09	0.20	0.15	0.06	0.00	0.07	-0.06	-0.14	0.03	0.06	0.11	-0.05	0.04	0.02	0.00	1	
(22) Performance	0.17	0.14	-0.08	0.04	0.07	-0.08	0.25	0.32	0.08	0.02	-0.03	-0.03	-0.01	0.10	0.09	0.02	-0.07	0.10	0.00	-0.05	0.22	1

Chapter D – How Leader Stressor Appraisals Translate into Follower Stressor Appraisals –
A Crossover Perspective

	Challenge Appr.	Hindrance Appr.	Satisfaction
Main Variables			
Workload	-.285	.499**	.222
Challenge Appraisal			.677***
Hindrance Appraisal			-.169**
Control Variables			
Age			.041**
Male			.009
APAC			-.121
Eastern Europe			.058
Germany			-.299
Latin America			.009
Middle East/Africa			-.041
North America			-.259
Hierarchy Level			.076*
Tenure at Company			-.009
Tenure with Leader			-.032
Proximity to Leader			.005
Impression Mgmt.			.043
Performance			.243**
RMSEA			.064
CFI			.884
TLI			.857
SRMR			.107
χ^2 [456]			860.040
AIC			21218.52
BIC			22181.02

Table D-4 Coefficients of the Structural Mediation Model

*Results of the Structural Equation Model (Asterisks denote significance on * = 95%-level; ** = 99%-level; *** = 99,9%-level).*

The effect of leader appraisals on follower appraisals: I then included leader workload and its challenge and hindrance appraisal in our model and added direct paths from leader workload to workload and its appraisals, and from the two leader appraisal items to the follower appraisal items. My hypotheses 1 and 2 predicted that the leader appraisals would be mirrored by follower appraisals, i.e., leader challenge (hindrance) appraisal would be positively related to follower challenge (hindrance) appraisal, and vice versa. However, what I find is somewhat unexpected. There is only a weakly significant negative path from leader challenge appraisal to follower challenge appraisal ($\beta = -.103, p < .1$), and I must therefore reject hypothesis 1a. Furthermore, I find that leader challenge and hindrance appraisals both have a significant positive effect on follower hindrance appraisal ($\beta = .222, p < .01$, and $\beta = .306, p < .001$ respectively).

Hypothesis 1b can thus be confirmed; at the same time, I must reject hypothesis 2a. Contrary to my expectations, leader hindrance appraisal seems to be detrimental to both follower appraisals, and leader challenge appraisal even enhances follower hindrance appraisal. As expected, the path from leader hindrance appraisal to follower challenge appraisal is negative and significant ($\beta = -.257, p < .001$), so I can confirm hypothesis 2b. It is perhaps noteworthy that leader workload has a positive effect on follower workload ($\beta = .210, p < .05$).

	Challenge Appraisal	Hindrance Appraisal	Leader Challenge	Leader Hindrance	Satisfaction
Main Variables					
Workload	-.108	.413**			.219*
Challenge Appraisal					.663***
Hindrance Appraisal					-.173**
Leader Workload			.016	-.163	
Leader Challenge Appr.	-.103*	.222**			
Leader Hindrance Appr.	-.257***	.306***			
Control Variables					
Age					.041**
Male					.089
APAC					-.129
Eastern Europe					.059
Germany					-.298
Latin America					.015
Middle East/Africa					-.045
North America					-.257
Hierarchy Level					.074*
Tenure at Company					-.009
Tenure with Leader					-.033
Proximity to Leader					.003
Impression Mgmt.					.041
Performance					.248**
RMSEA					.059
CFI					.896
TLI					.877
SRMR					.109
χ^2 [498]					872.661
AIC					21157.81
BIC					21977.96

Table D-5 Path Coefficients of the Structural Mediation Model including Leader Workload and Appraisal

*Results of the Structural Equation Model (Asterisks denote significance on + = 90%-level; * = 95%-level; ** = 99%-level; *** = 99,9%-level).*

The moderating effect of LMX: I find that our LMX variable is highly skewed, and that the variance explained by Likert-scale values would be insufficient (cf. Table D-3). It is commonly suggested to conduct subsample analyses to examine potential moderating effects of highly skewed variables (e.g., Memon, Cheah, Ramayah, Ting, Chuah, & Cham, 2019). Subsample analyses allow for examining moderating effects across all dependent variables at the same time (Soenen, Melkonian, & Ambrose, 2017). Since LMX is a psychosocial construct that can affect several individual factors alike, I deem subsample analyses useful for testing moderation effects.¹⁰ I expect LMX to moderate the leader appraisal-follower appraisal paths; to test my third hypothesis, I therefore conducted a subsample analysis of two groups that were split according to the median of all LMX indicator variables, so I could differentiate between those respondents who indicated they were in high-LMX relationships and those in low-LMX relationships. This approach allowed me to receive goodness-of-fit statistics for both subgroups as well, so I could determine that our models still fit the data. I repeated the SEM analysis in two groups of 99 and 120 respondents respectively. Results rendered a more differentiated picture: the low-LMX-group was characterized by an overall lack of significant paths between leader appraisals and follower appraisals, except that leader challenge appraisal enhanced follower hindrance appraisal on a weak significance level ($\beta = .283, p < .1$). In the high-LMX-group however, leader hindrance appraisal still had a negative effect on follower challenge appraisal ($\beta = -.260, p < .05$) and a positive effect on follower hindrance appraisal ($\beta = .301, p < .05$). This indicates support for my hypothesis 3, since it shows that in high-LMX relationships, leader appraisals affect follower appraisals rather than in low-LMX relationships. However, leader challenge appraisals do not affect follower appraisals significantly.

¹⁰ Since I use job satisfaction as a mediator variable in chapter C, I also ran additional analyses including the main variables from chapter C as control variables in these analyses (i.e., current, and future skill gaps and turnover intention). Results remained the same in terms of direction and magnitude. Unfortunately, the subsample analysis-model did not converge, presumably because it was too complex. I am, however, confident, that, given that all the other models remain largely unchanged, the findings of my analyses remain useful.

I also find that the negative effect of hindrance appraisal on satisfaction disappears in the high-LMX group, while it persists in the low-LMX-group ($\beta = -.287, p < .05$). This shows that LMX can potentially moderate the aforementioned mediation of the workload-satisfaction relationship by hindrance appraisal. Results are shown in table D-6 below.

Chapter D – How Leader Stressor Appraisals Translate into Follower Stressor Appraisals –
A Crossover Perspective

	Challenge Appraisal	Hindrance Appraisal	Leader Challenge	Leader Hindrance	Satisfaction
Main Variables Low LMX					
Workload	-.123	.277			.293 ⁺
Challenge Appraisal					.650 ^{***}
Hindrance Appraisal					-.287 [*]
Leader Workload			.470 ^{**}	-.219	
Leader Challenge Appr.	.040	.283 ⁺			
Leader Hindrance Appr.	-.070	.264			
Main Variables High LMX					
Workload	-.059	.499 [*]			.32
Challenge Appraisal					.628 ^{***}
Hindrance Appraisal					-.054
Leader Workload			-.694 ^{**}	.013	
Leader Challenge Appr.	-.125	.155			
Leader Hindrance Appr.	-.260 [*]	.301 [*]			
Control Variables Low LMX					
Age					.039 ⁺
Male					.275
APAC					-.064
Eastern Europe					.134
Germany					-.248
Latin America					.436
Middle East/Africa					.050
North America					.009
Hierarchy Level					.086
Tenure at Company					-.012
Tenure with Leader					-.079 ⁺
Proximity to Leader					-.007
Impression Mgmt.					.096
Performance					.148
Control Variables High LMX					
Age					.043 ^{**}
Male					-.063
APAC					-.124
Eastern Europe					.136
Germany					-.212
Latin America					.303
Middle East/Africa					.038
North America					-.468
Hierarchy Level					.045
Tenure at Company					-.004
Tenure with Leader					-.312
Proximity to Leader					-.016
Impression Mgmt.					-.074
Performance					.172 ⁺
RMSEA					.075
CFI					.794
TLI					.764
SRMR					.104
χ^2 [1176]					1658.343
AIC					20243.24
BIC					21070.17

Table D-6 Path Coefficients of the Structural Mediation Models for Low and High LMX Subgroups

*Results of the Structural Equation Model (Asterisks denote significance on ⁺ = 90%-level; * = 95%-level; ** = 99%-level; *** = 99,9%-level). Please note that because of cross-group constraints, default standard errors were used.*

As an additional analysis, I then let LMX moderate the leader appraisal-follower appraisal paths. I used robust standard errors to account for non-normality and missing values (Satorra & Bentler, 1994). When modelling the interactions, I followed the approach of Klein and Moosbrugger (2000). Based on my subsample-analysis, I used an LMX dummy variable as moderator since I expected LMX values larger than the median to drive the moderation effect. Results largely confirmed my expectations. I found two significant moderation terms: both the interaction between leader challenge appraisal and LMX and the interaction between leader hindrance appraisal and LMX had a significant, negative effect on follower challenge appraisal ($\gamma = -.208, p < .05$, and $\gamma = -.264, p < .05$ resp.). While I do not find significant interaction effects on follower hindrance appraisal, I can still observe that the positive effects of both leader challenge ($\beta = .186, p < .05$) and hindrance appraisals ($\beta = .209, p < .05$) on follower hindrance appraisal persist. This indicates that high levels of LMX can indeed be detrimental to follower appraisals of workload, thus rendering further support for hypothesis 3.

Chapter D – How Leader Stressor Appraisals Translate into Follower Stressor Appraisals –
A Crossover Perspective

	Challenge Appraisal	Hindrance Appraisal	Leader Challenge	Leader Hindrance	Satisfaction
Main Variables					
Workload	.056	.314*			.270*
Challenge Appraisal					.675***
Hindrance Appraisal					-.154**
Leader Workload			-.118	-.096	
Leader Challenge Appr.	.059	.186*			
Leader Hindrance Appr.	-.102	.209*			
LMX (Dummy)	1.878***	-.875			
Leader Challenge × LMX	-.208*	.029			
Leader Hindrance × LMX	-.264*	.139			
Control Variables					
Age					.039**
Female					-.037
APAC					-.882***
Eastern Europe					-.718**
Germany					-1.119***
Latin America					-.727*
Middle East/Africa					-.925***
North America					-1.062***
Western Europe					-.828***
Hierarchy Level					.060
Tenure at Company					-.010
Tenure with Leader					-.031
Proximity to Leader					.006
Impression Mgmt.					.038
Performance					.224***
RMSEA					.087
CFI					.749
TLI					.716
SRMR					.083
$\chi^2[376]$					1216.114
AIC					11003.314
BIC					11232.760

Table D-7 Path Coefficients of the Structural Moderated Mediation Model

*Results of the Structural Equation Model (Asterisks denote significance on + = 90%-level; * = 95%-level; ** = 99%-level; *** = 99,9%-level).*

D.5 Discussion and Contributions

In this chapter, I examined how leader and follower stressor appraisals are related. I developed and tested a theoretical model that answered the question of how stressor appraisals can cross over from leaders to followers. I thereby laid the foundation for examining stressor appraisals in leader-follower relationships. Motivating my research objective with the CHSF, crossover and LMX theories, I proposed that leaders can transmit their stressor appraisals to

their followers, and that this crossing over would be more pronounced in high-LMX relationships.

I further shed light on a component of LMX that has rarely been described: its potential negative consequences. I suggested that stressor appraisals are more contagious in high-LMX relationships, implying that a crossover of malign hindrance appraisals would also be more pronounced.

Basing this chapter on a survey of 536 financial managers of a large multinational company, I tested my hypotheses using moderated mediation structural equation models. My analyses partly confirmed my expectations; mostly, however, they yielded unexpected and interesting results, which extend our theoretical understanding of how stressor appraisals can cross over from leaders to followers. I find that leaders' stressor appraisals have a consistently detrimental effect on followers' stressor appraisals, i.e., leader hindrance appraisals amplify follower hindrance appraisals and at the same time weaken followers' challenge appraisals of workload. Likewise, leaders' challenge appraisals amplify followers' hindrance appraisals as well.

Regarding the relationship between leaders and followers, I can observe that in such relationships that are characterized by high levels of trust, support, and interpersonal exchange, i.e., high-LMX relationships, leader appraisals have a consistently detrimental effect on follower appraisals. Moreover, I find that LMX negatively moderates the path from both leader appraisals to follower challenge appraisals, indicating that those followers who appraise workload as a challenge will do so even less if they have a good relationship with their leaders.

I offer as an explanation that leaders who are exposed to the same stressor as their followers, i.e., workload, will be subject to physical or psychological strain irrespective of their cognitive appraisals. The transactional theory of stress (Lazarus & Folkman, 1984) suggests

that appraisals only *mediate*, but not *moderate* the stressor-outcome relationship, which I can confirm in my analyses. Since both leader appraisals are detrimental to follower appraisals of the same stressor, I suppose that it is not the appraisals themselves, but rather the strain experienced by leaders that is perceptible towards followers. Both dimensions of stressor appraisals, challenge as well as hindrance, imply that an individual is subject to a stressor. Webster et al. (2011) further note that “(...) working conditions can be harmful for the individual even if they are appraised as challenges” (p. 514). By means of (conscious) empathy and (subconscious) emotional contagion, i.e., a crossover process, followers observe and react to their leaders’ experience of stress. Leaders that are subject to high levels of workload will, irrespective of their appraisals, experience physiological and psychological strain. Even if appraised as a challenge, this strain can have detrimental consequences such as increased levels of burnout. More importantly, however, the leader will require emotional and cognitive resources to cope with this strain; when resources are depleted, they can no longer be transferred to followers. This can amplify the followers’ hindrance appraisals and mitigate their challenge appraisals of the same stressor that they themselves are subject to.

Furthermore, I argue that the closer the relationship between leader and follower, the more pronounced this contagious effect would be. Not only will followers be more exposed to their leaders’ emotions and signals of stress shown by leaders. Especially in the case of workload, followers who are in a close interpersonal relationship with their leaders will perceive their leaders’ strain and feel that they must reciprocate. Leaders who regularly engage with their followers, and thus provide them with resources will, perhaps inadvertently, evoke obligatory feelings within their followers. Since LMX is based on social exchange theory (Blau, 1964), I can assume that followers’ perceived obligations to increase their own workload so as to not ‘disappoint’ their leaders will, at some point, become overwhelming. Followers may feel a level of obligation towards their leaders that negatively influences a ‘can-do’ attitude and challenge

mindset. This is the case especially if the leaders themselves are subject to high levels of workload and therefore cannot provide interpersonal and organizational resources. Advancing Harris and Kacmar's (2006) study, I suppose that the u-shaped relationship they hypothesize between LMX and stress is, in fact, caused by the less pronounced crossover of challenge appraisals in high-LMX relationships.

D.5.1 Theoretical Contributions

I contribute to existing literature on stress in organizations in several ways. I show that follower appraisals do not happen in isolation but are rather contingent on their social context. As noted by authors of previous studies on the subject (e.g., LePine, 2022; LePine et al., 2016; Ma et al., 2021), the stress process may be contingent on certain boundary conditions. I show that leader appraisals have a significant and negative effect on follower appraisals. My results indicate that leader stress plays a vital role in determining followers' stressor appraisals. Leaders that exhibit symptoms of stress shape their followers' appraisals in a negative way, thus lowering their satisfaction, performance, and potentially increasing their risk of burnout. My results can explain a mechanism behind Omdahl and O'Donnell's (1999) findings that emotional contagion and empathy are important determinants of burnout. Especially when regarding the relationship between leaders and followers, emotional contagion from and empathy towards leaders can drive the valence of experienced stress in followers and thereby increase their risk of burning out because of amplified hindrance appraisals (Mazzola & Disselhorst, 2009).

My findings further enrich crossover literature. Previous studies have not distinguished the actual crossover process from boundary conditions that facilitate crossover; I argue that appraisals can crossover by means of empathy and social contagion (i.e., mechanisms), while I regard the conditions mentioned as processes by Bakker et al. (2009), i.e., the frequency of exchanging views or the similarity with the source, as boundary conditions. My views are consistent with the transactional theory of stress (Lazarus & Folkman, 1984), which posits that

appraisals can be influenced by person and situation factors. I therefore enhance our understanding of how stress can cross over from one person to another: appraisals are supposedly visible and can cross over by means of empathy and social contagion. This is particularly important in an organizational context, which is oftentimes the source of stressors like workload, role conflict, role ambiguity or time pressure. While I focus on the crossover of stress from leaders to followers, my findings bear important implications for the main area of research within crossover theory: the relationship between spouses. Further research regarding crossover processes of appraisals between spouses is therefore warranted and could enhance our understanding of spillover processes as well (Westman & Chen, 2017).

Consequently, I extend the view on stress that posits that individuals in organizations appraise stressors in a social vacuum. Stressor appraisals are highly contingent on a social component that manifests itself in both conscious and subconscious contagious processes between leaders and followers. My study has therefore laid the foundation for assessing stress and appraisals in leader-follower relationships. Future studies should build upon this foundation and develop my theoretical model further, especially with regard to the crossover of stress in other social settings, e.g., between team members or between employees and customers.

I also extend the literature on stress and leadership by providing evidence that a close leader-follower relationship is not necessarily beneficial when regarding stressor appraisals. My results indicate that LMX can amplify the crossover process mentioned above, and thus diminish followers' challenge appraisals. I thereby extend Harris and Kacmar's (2006) findings who posit that LMX can be too much of a good thing when it comes to stress. Although the authors only regarded stress as their outcome variable, I can confirm that high levels of LMX can be detrimental to followers' stress; more importantly, I illustrate the mechanism behind this effect by providing evidence that leader stress leads to less pronounced challenge appraisals in followers especially in high-LMX relationships.

An important question that comes to mind is how appraisals and emotions are linked. One would expect that challenge appraisals, which are understood as an opportunity for personal growth, elicit positive emotions (Scherer et al, 2001; Webster et al., 2011). However, according to my findings, even leaders' challenge appraisals are positively related to their followers' hindrance appraisals, and negatively related to their challenge appraisals. Following my hypotheses, positive emotions elicited by challenge appraisals should be mirrored by followers, which is not reflected by my findings; they are furthermore contradictory to Barsade's (2002) study, who did not find support for her hypothesis that negative emotions were more contagious than positive ones. Consequently, I show that the crossover of appraisals happens asymmetrically. Even such appraisals that I expected to be benign (i.e., challenge appraisals) lead to less challenging and more hindering appraisals of workload in followers. These findings could entice researchers to examine non-linear and asymmetrical contagious effects of appraisals as well. While literature suggests that empathy and emotional contagion will generally align the emotions of sender and receiver, I argue that this alignment is contingent upon boundary conditions – such as stress.

D.5.2 Managerial Implications

The vast body of literature on the CHSF has extensively described that managers should engage in stress management practices. My findings illustrate that this is even more important when leaders experience stress themselves. Since my findings imply that it is the strain evoked by workload rather than its appraisals that is detrimental to follower appraisals, leaders should engage in practices that decrease their workload. One possible way of decreasing workload would be acquiring time management skills (Jex & Elacqua, 1999). Furthermore, as described by Bowling et al. (2015), other factors exist that are negatively correlated with workload, such as job control or social support. Hence, leaders who receive social support from their peers or even their family may experience less workload. Although I acknowledge that spillover and

crossover effects can be a source of work-family conflict (Westman & Etzion, 1995), familial support can provide important emotional and cognitive resources that can help leaders cope. Similarly, leaders who perceive themselves to possess substantial control over their job may frame their situation as less demanding.

Aside from such personal stress management practices, organizations would also be well advised to monitor and constrain their employees' (and of course leaders') workload. My results clarify that high levels of workload are significantly decreasing job satisfaction and elicit negative emotions. This confirms previous assessments on negative effects of workload on employees' physical and psychological wellbeing (Bowling et al., 2015).

I am aware, however, that workload cannot be abolished completely. Employees who are facing high levels of workload will benefit from support from their leaders which ameliorates their appraisals. As LePine et al. (2016) have described, charismatic leadership will help employees reframe stressful situations by providing motivational resources that will amplify challenge and mitigate hindrance appraisals. On the other hand, Zhang et al. (2014) find that transactional leaders are more effective in mitigating hindrance stressors by providing structure, procedural justice, and resources. This may be particularly helpful for employees who suffer from high levels of workload and pronounced hindrance appraisals.

Moreover, literature shows that challenge appraisals lead to more problem-oriented coping strategies, while hindrance appraisals are associated with rather emotion-focused and therefore more detrimental coping strategies (e.g., LePine et al., 2005). Focusing on problem-oriented coping strategies by providing training, mentoring or other resources for leaders and followers alike may decrease the negative consequences of hindrance appraisals and help employees cope more effectively.

Lastly, since workload will always be accompanying employees to some extent, Ohly and Fritz (2010) suggest that recovery from such demands plays a vital role for safeguarding employees' well-being. Companies should consider supporting their employees' recovery from job demands by providing sufficient leisure time and specific trainings in recovery strategies.

On a different note, leaders should be aware of their impact on others around them. My results strongly suggest that stress is visible, and that this visibility can be detrimental. Aside from decreasing stress levels, leaders should also be cautious regarding their public appearance. Any leaders that learn to regulate their public display of stress can thereby effectively decrease their followers' malign appraisals. This implies that leaders could train their emotional intelligence and self-awareness as well as regulation capabilities, which to date has seldom been a significant part of leadership training.

D.6 Conclusion, Limitations, and Future Research Directions

However, I did not measure emotions explicitly and can thus only derive limited conclusions. I would advise researchers in the future to not only measure appraisals, but also emotions experienced by individuals to determine the individual effects of stress more clearly: appraisals likely elicit different emotions. Measuring them explicitly will advance our understanding of stressor-outcome-relationships and shed light on mechanisms underlying the emergence and contagion of stressor appraisals, which in the past have been described inconsistently (Maz-zola & Disselhorst, 2019).

Of course, this chapter is subject to some other limitations. Firstly, I limited this chapter to workload as a stressor that both leaders and followers experience. I acknowledge that in an organizational setting, other stressors occur just as much to both leaders and

followers.¹¹ Researchers in future studies may want to examine the contagion of appraisals of role conflict and role ambiguity, particularly in the context of LMX: One would expect that LMX has a different influence on the leader appraisal-follower appraisal relationship since it provides role clarity (Graen & Uhl-Bien, 1995).

There might also be other boundary conditions (i.e., person and situation factors, Lazarus & Folkman, 1984) that can influence stressor appraisals. The relationship between leaders and followers may be subject to other influencing factors such as wages, perceived justice, organizational politics, or indeed different leadership styles, which I have not assessed.

Although I follow Anderson et al.'s (2003) notion that contagious processes are more likely to occur from leaders to followers, I am aware that stressor appraisals may cross over within groups of the same status, or even towards leaders. Even though the models with which I measured the crossover of stressor appraisals from followers to leaders had inferior goodness-of-fit statistics, I cannot rule out the possibility of such crossover to occur. Researchers may want to control for the crossover of stress amongst employees on different as well as the same levels. Consequently, I call for more research on the crossover of stressor appraisal from one spouse to the other as well, as this remains a dominant tenet of crossover theory (Westman & Chen, 2017).

In the design of this chapter, I used single-item measures for challenge and hindrance appraisals because of constraints of the length of the questionnaire. Although single-item measures have previously been used (e.g., Gerich, 2017; Gerich & Weber, 2019), researchers

¹¹ When repeating my analyses with inter-role conflict (Rizzo, House, & Lirtzman, 1970) as a stressor, I received similar results; a leader's hindrance appraisal is detrimental to both followers' challenge and hindrance appraisals. However, since we can safely assume that leaders and followers possess different roles in an organization, I decided to exclude it from this chapter.

in future studies could receive more differentiated results by using Searle and Auton's (2015) multi-item appraisal measures.

Of course, my survey only depicts the situation at one point in time. To accurately describe causal chains, a longitudinal study would be necessary. Despite my strong theoretical and empirical foundations, a field experiment might reveal causality where a survey can only indicate correlations. Although I control for many variables that could potentially confound my analyses, I cannot rule out the possibility of common method bias since all measures are self-reported. Because of the results of my CFA analyses however, I am confident that my measures are distinct from each other, and no common method factor exists.

The single-company setting allows for a differentiated analysis of leader-follower relationships and holds several potential confounding factors such as organizational culture constant. Nonetheless, the generalizability of my findings towards other companies must be discussed. Researchers may want to validate my findings across different companies and industries.

Lastly, since I address a phenomenon that can typically be observed within dyads, I call for further research using nested models. Such multi-level structural equation models could reveal effects that I with my aggregate model could not observe. While I am confident that my analytical strategy is useful, and that my results are robust, more details remain to be discovered.

E Conclusion

E.1 Synopsis and Contributions

The management accounting practice is changing, and management accountants within it. The overarching aim of this dissertation is to shed light on several factors that influence management accountants' working environment, their careers, and their very lives. I investigated how controllers' performance, their turnover intention and job satisfaction are influenced by their skills, their lack thereof, which causes stress, and their supervisors' appraisals of a stressor that all employees are more or less subject to: workload. Within this overarching framework, I integrate the first extensive description of controllers' skills and career trajectories across different hierarchy levels with potential drawbacks of not possessing the 'right' skills, or skill gaps – which have only scarcely been described on an individual level (McGuinness & Ortiz. 2016), and which have never been investigated from a CHSF point of view (LePine, 2022). Drawing on this theoretical foundation, I then describe how leaders and followers appraise the stressor workload, and how this appraisal crosses over from leaders to followers. Lastly, a potential negative facet of emotional and interpersonal closeness to one's supervisor is described: the amplification of hindrance appraisals that is enhanced by high levels of LMX. I thus draw a comprehensive picture of the antecedents and consequences of management accountants' endowment with skills and different facets of their stress in the workplace.

Bechtoldt (2018) speaks of my outcome variables as "(...) fundamental aspects in the professional life of controllers" (p. 104). I am inherently interested in these fundamental aspects of controllers as humans, their individual characteristics, and their well-being, and thus chose to investigate management accountants as individuals rather than management accounting. With my dissertation, I ultimately aim to improve the abovementioned fundamental aspects so

that controllers can perform well while at the same time not being subject to strain, neither caused by their own lack of skills nor by their supervisors.

In this section, I revisit the findings and conclusions of the previous chapters B to D and discuss their contributions to both management accounting literature and practice. After discussing theoretical and methodological limitations of this dissertation, I conclude with providing avenues for future research on the topic.

E.1.1 Research objective one

In chapter B, I introduced a framework of management accounting skills that was derived from a Delphi study (Schäffer et al., 2019), and, for the first time, empirically validated in practice. As such, the introduction of this framework is pioneering the measurement of management accounting skills in a firm. Extending beyond Rouwelaar et al.'s (2021) study that measured controller skills along three broad dimensions, my framework allows for a nuanced in-detail examination of what management accountants in my case company are proficient in and thus provides a basis for further investigations of the management accounting profession in all its complexity. It is perhaps noteworthy that my framework extends 'classical' controlling skills like Finance and Accounting Expertise by such that have received only little attention in the description of controllers so far: soft skills like Personal Competencies and Communication and Collaboration Skills. Although Oesterreich et al. (2019) and Spraakman et al. (2015) call for the integration of what I call Technology and Analytics Skills into the management accounting curriculum, even commonly accepted descriptions of controller roles like the ones found in Fourné et al. (2018) or Maas and Matejka (2009) do not consider (advanced) IT knowledge like expertise in data visualization and BI, data sourcing and data preparation, or statistical modeling. Furthermore, controller roles (Byrne & Pierce, 2007; Fourné et al, 2018; Hartmann & Maas, 2011; Maas & Matejka, 2009) are commonly defined by the tasks management accountants fulfil in their daily working lives. By introducing the skills framework from chapter B to

the scientific community, I enhance our understanding of controllers' working lives by providing a novel and more detailed perspective on their role within a firm, namely one that could define the roles they take on by the skills they possess. Researchers may want to pursue this path in the future since it allows also for an intertemporal investigation of controllers' careers which today likely not remain fixed to certain role definitions.

Acknowledging Grabner & Moers' (2015) study on promotions and the Peter principle (Peter & Hull, 1969), I show that management accounting skills can serve as subjective performance information which can provide a basis for promotion decisions. Consequently, as supported by my results, I show that different combinations of skills are related to above-average performance of management accountants. According to their perspective, employees can be sorted more efficiently into higher positions when supervisors consider not only employees' current performance but also their subjective evaluations of the employees' abilities. By measuring skills, this subjective assessment can be made more objective, as it provides insight into how well the employee fits their current and future job.

My findings also indicate that match quality (i.e., the fit between controllers' skills and the requirements of their job; Weller et al., 2019) can be achieved by pursuing different career paths. I thus also complement the literature on human capital by providing evidence that different combinations of skills can equally constitute high performance of controllers. Some human capital scholars have argued that 'more is better', i.e., the more skills employees possess, the better they perform (e.g., Birkett, 2002; Schmidt & Hunter, 1998). My methodology (i.e., fsQCA) allows for the investigation of equifinality, a concept that has been described only theoretically in human capital literature and which posits that human capital can be constituted by different KSAOs equally (cf. the discussion on firm-specific vs. general human capital; Raffiee & Coff, 2016).

Lastly, I shed light on whether controllers become specialists or generalists over the course of their careers. There exist studies on specialist vs. generalist CEOs (Custodio et al., 2013) or CFOs (Baxter & Chua, 2008; Datta & Iskandar-Datta, 2014); I am not aware of any study that describes the path to becoming an executive from a generalist vs. specialist perspective. Controllers are of particular interest since they often and naturally qualify as future CFOs because of their unique position in a firm and the skills they possess (as is also reflected in my sample with $n = 32$ top management controllers who serve as business unit or country CFOs in my case company). As can be seen in the respective section of chapter B, controllers begin their careers as specialists (note that they show above-average skills in either of the skill sets while at the same time possessing average skills in every other skill set). The further they progress, the more they specialize before ultimately becoming generalists as top-level controllers/CFOs. Tracing their career paths enhances our understanding of what controller careers can look like, but also provide a starting point for developing controlling curricula within a firm – based on my skills framework, trainings and promotions can thus be designed in a more efficient way.

E.1.2 Research objective two

Developing both academic and on-the-job training curricula can also be regarded as a remedy for the desideratum of my second research objective. In chapter C, I introduced two not previously described stressors, perceived current and future skill gaps. Why are skill gaps stressors, one could ask: I argue that a lack of skills that are necessary for fulfilling one's job is perceived as not having the resources to cope with a certain demand and will therefore cause strain. Not having the required skills can also be obstructive to achieving certain personal goals like, e.g., being promoted into higher positions (cf. chapter B). According to the CHSF, one can thus assume that perceived skill gaps can be perceived as stressors and will likely be appraised as a hindrance. My findings confirm these assumptions. Indeed, as proposed by CHSF scholars (LePine, 2022), perceived skill gaps are appraised as a hindrance rather than as a challenge, and

their appraisals mediate the relationship between the stressor and job satisfaction, which in turn mediates the relationship between the stressor and turnover intention (cf. Podsakoff et al., 2007). Ultimately, my findings suggest that not having the right skills will entice employees to quit their job.

Of course, an intuitive reaction would be to let these employees leave the firm – not having the required skills can hardly result in high performance (cf. chapter B) and may ultimately harm the firm. Human capital, i.e, the aggregate KSAOs of employees, only constitute a competitive advantage when they are used to produce a certain economic outcome (Ployhart et al. 2014). Employees who do not currently possess and do not expect to acquire necessary skills may therefore not be suited for the firm they currently work for and will likely not be promoted (Grabner & Moers, 2015) but rather replaced in up-or-out tournaments (Gibbons & Waldman, 1998; Waldman, 1990). If not, underqualified employees would be promoted into higher positions that they are not suited for, which would result in the Peter principle (Peter & Hull, 1969).

However, as mentioned in chapter A, firms increasingly struggle to find and retain qualified employees. Particularly for the controlling profession, a lack of qualified employees can be stated (Bechtoldt, 2018). Firms not only face high turnover rates from older, experienced controllers who leave the job market altogether, but also have difficulties recruiting adequate replacements. The ‘war for talent’ (Michaels et al., 2001) is not a new phenomenon, but it has worsened (De Smet et al., 2022). Within a firm, controllers acquire skills and networks that enable them to switch positions within the firm easily, in particular since the business partner role and, resulting therefrom, increasing knowledge of and proximity to business units, has become more pronounced. Adding to this statement, Bechtoldt’s (2018) description of outdated ‘silo-like’ careers of controllers can be confirmed regarding the results of chapter B of this dissertation, showing diverse career paths of controllers. Furthermore, certain skills that are not

firm-specific (Raffiee & Coff, 2016) can likely be transferred to other work contexts, e.g., to competing firms or business units. In particular, this applies to Personal Competencies, and Communication and Collaboration Skills (e.g., Arquero Montano et al., 2001)

One can safely assume that hiring new employees and getting them acquainted with the firm's culture, IT systems, and colleagues is more costly in both temporal and financial dimensions than training already existing employees to overcome their skill gaps. It is therefore of paramount importance to companies to address skill gaps so that employees and, especially, controllers do not become dissatisfied and leave the company. Here I would like to highlight again that perceived skill gaps can be regarded as a stressor that is appraised as a hindrance. Not only from an economic, but also from a philanthropic perspective, firms should train their employees so as to reduce their strain, which can eventually be detrimental to their health (Gerich, 2017; LePine, 2022). Possible remedies for skill gaps include job crafting (Leana et al., 2009) which describes the active shaping of one's own work practice, as well as training and development opportunities (Bakker et al., 2004). Aside from providing the employees with the skills they require to fulfil their duties at work, such investments of a firm in their employees will result in an increase in their sense of achievement and meaningfulness, ultimately reducing disengagement.

My stance on individual-level skill gaps also enhances our understanding of skill gaps from an aggregate perspective. Dissatisfied employees who suffer from skill gaps will, especially if they are not capable of overcoming these skill gaps, become disengaged (LePine, 2022). This will not only be a strain on their individual satisfaction, health, and performance (Afrahi et al., 2021), but also on firm-level productivity. Companies who can offer better working conditions, salaries, and especially, training offers will therefore likely attract these disengaged employees (Bakker et al., 2004) and thus eventually hamper the focal firm's competitive advantage. Again, this is particularly relevant for my case company. A controller noted in the

input box of my questionnaire that “(...) more learnings for newcomers focused not only on the procedure, but also to have some overview about the area of work, what impact has your daily work at the business etc.” would be beneficial, and another participant wished for “(...) [the provision of] more trainings in area of hard skills development instead of relying on employees to do the job fully by themselves”.

E.1.3 Research objective three

Alas, controllers do not only suffer from stress in isolation. After having introduced the CHSF (LePine, 2022) in chapter C, I turned to another aspect of controllers’ day-to-day work: their relationship with their supervisor, and which consequences it has for the appraisal of a stressor that is common for leaders and followers alike, and which is particularly prevalent in my case company: workload.¹² Following Ma et al.’s (2021) call for research on stressor appraisals in leader-follower relationships, I examined how the appraisals of workload would cross over from leaders to followers, and how this crossover process would be enhanced by LMX. As such, I lay the foundation for examining stressor appraisals in leader-follower relationships and shed further light onto a potential dark facet of LMX (Harris & Kacmar, 2006). I show that leaders’ stressor appraisals are visible to followers, will be perceived by them, and lead to a reaction, albeit not the reaction I hypothesized. On the contrary, my results suggest that regardless of how leaders appraise workload, their appraisals both enhance their followers’ hindrance appraisals and mitigate their challenge appraisals, which ultimately lowers the followers’ job satisfaction. Furthermore, as hypothesized, this effect is more pronounced in leader-follower relationships characterized by high levels of LMX.

¹² As one participant noted in the questionnaire’s input box: “setting up priorities or less workload would make my job [a] more quality job ([fewer] mistakes, more precise work, more improvements, time for self study...)”.

My findings bear important contributions to both the scholarly community and practice. First of all, stress does not happen in isolation, and neither do appraisals. While there exists some literature on crossover effects (e.g., Bakker & Demerouti, 2013; Bakker et al., 2009; Westman & Etzion, 1995), the role of appraisals has, to the best of my knowledge, not been described yet in this regard. Doing so provides nuanced insights on the mechanisms behind the crossover of stress. Differentiating between social contagion and empathy as drivers of the contagion of appraisals provides a novel perspective on what happens when followers observe their leaders' stress and could also serve as a basis for investigating crossover processes in other contexts in further detail. Although my findings are only a first step on the path to examining stress in leader-follower dyads, they are interesting since they show that appraisals and the emotions that they elicit play an important role in shaping followers' stress in the workplace.

Perhaps even more importantly, however, I show that LMX amplifies this process. While LMX has often been named as beneficial for both leaders and followers (Graen & Uhl-Bien, 1995; Janssen & van Yperen, 2004), a close relationship with one's leader is not necessarily good. This 'dark side' of LMX, mentioned, e.g., by Harris and Kacmar (2006), entails implications for leaders especially. As mentioned earlier, satisfied controllers are highly relevant for a company, since they more seldom intend to leave the firm (see chapter C), are performing better and exhibit lower levels of absenteeism (Bechtoldt, 2018). Again, I advocate for a philanthropic view aside from the economic one and purport that controllers who are subject to stress not only are less satisfied with their jobs but are also at risk of suffering from burnout and other negative health outcomes (e.g., Gerich, 2017). It is therefore leaders' responsibility towards their followers to also decrease their own stress levels lest they cross over to their followers – especially when they maintain a close relationship with each other.

E.2 General Limitations

E.2.1 Theoretical Limitations

In this section and the following, I discuss several limitations that apply to my dissertation. I focus on general limitations of the respective chapters B to D as well overarching theoretical and methodological limitations that apply to my dissertation as a whole. Limitations relating to the specific methodologies of chapters B to D are described in detail in the respective subsections B.5.3, C.5.3, and D.6.

In the development of my research questions and hypotheses, I diligently applied existing theory and built upon it. I am confident to have reviewed and applied the most recent literature relating to each chapter. However, at the time of writing of this dissertation, there may be other authors researching similar topics, none of whom I am aware.

Concerning the respective chapters of my dissertation, the skill sets I introduced in chapter B are derived from a Delphi study conducted in the spring of 2019 (Schäffer et al., 2019). The initial set of skills was based on a practitioner framework by the Institute of Management Accountants (IMA, 2019) and subsequently discussed by the participants of the Delphi study. As such, the skills depict the opinions of management accounting professionals and scholars at the time of analysis. Especially since the onset of publicly available AI tools (like, e.g., ChatGPT®), Technology and Analytics skills may have to be amended since artificial intelligence will, almost certainly, play a more important role in the controlling profession in the future. The same may be true for other skills as well. As stated in chapter A of this dissertation, the controlling profession is changing profoundly; as a well-known professor in the field of management accounting once stated: “Controlling is dead; long live the Controller!”¹³ As

¹³ Overheard at a people development seminar of the Center for Controlling and Management.

diverse as controllers' tasks already are, I assume that they will take on other roles and responsibilities which may not be inherent in the skills framework of this dissertation.

At the same time, my case company has around 50.000 employees worldwide and counts as one of the largest German FMCG companies. As such, it possesses a unique firm culture, work practices, and IT systems. Furthermore, its controller community spans across the globe, is highly diverse, well-educated, and trained, and consists of 912 employees, 536 of which have answered my survey. Therefore, findings regarding their skills must be treated with caution. In small and medium-sized enterprises, there may be fewer controllers who each will have to take on more generalist roles, and career paths may look somewhat different than in my analysis. However, I am confident that the skill sets introduced in this dissertation are comprehensive and thus provide a useful framework for researchers and practitioners working with SMEs as well.

Regarding the analysis of skills across different hierarchy levels, I can only draw conclusions from regarding the current state of the controlling community within my case company. Mapping entire career paths would require observing controllers' careers over time. However, because the skill sets have not been asked in previous studies in cooperation with my case company, I cannot make statements about the development of controller skills over time. My findings must therefore be regarded with caution.

In chapter C, I introduced two stressors that have previously not been described, i.e., perceived current and future skill gaps. The literature on skill gaps stems mostly from the field of economics and has measured skill gaps in a rather aggregate fashion, e.g., by comparing employer and averaged employee assessments of proficiency in 15 broad areas like communication skills, language skills, and numeracy skills (McGuinness & Ortiz, 2016). While this approach allows for obtaining larger sample sizes, my items relate to the employees' own perception of their lack of skills and thus provide a novel perspective on which negative consequences

of skill gaps can ensue on the individual level. However, the development of my items is based rather on CHSF literature (LePine, 2022), the COR theory (Hobfoll, 1989), and the transactional theory of stress (Lazarus & Folkman, 1984). Interpreting my findings on skill gaps from an economics perspective may therefore warrant precaution. I am, however, confident that the items were diligently derived and applied in an adequate fashion.

Concerning the theoretical limitations of both chapters C and D, one discussion in the literature on stressors and appraisals must be mentioned. Although LePine (2022) integrated both views on stressor appraisals, the scholar behind the transactional theory has accused his colleague, who introduced the COR theory, of “(...) playing word games” and being “(...) often inconsistent” (Lazarus, 2001; p. 382). Hobfoll, on the other hand, argues that “(...) cognitive psychology does not provide valuable insights into our understanding of stress” (Hobfoll, 1998; p. 21). While I do not wish to interfere in this discussion on two seemingly contradictory views on stress, my dissertation makes use of both theories to explain certain mechanisms behind the perception of, e.g., skill gaps as stressful and, in particular, as a hindrance. Purists in either field may find my approach worthy of criticism; however, and in line with LePine (2022), I argue that the concept of (expected) resource gain or loss serves as a useful explanation for why appraisals occur, and which behavior results therefrom.

In chapter D, I describe two mechanisms leading to crossover effects, social contagion, and empathy. As with every psychological construct, measuring social contagion and empathy is difficult and would require neurological studies and/or field experiments (as, e.g., in Lamm et al., 2007). I therefore would like to emphasize that these concepts serve as *possible* explanations for crossover effects. I cannot rule out the possibility of other mechanisms driving crossover, which I haven't observed either.

The crossover effect is assumed to occur from leaders towards followers since people tend to emotionally converge with those of higher status (Anderson et al., 2003). This is

reflected in my analysis: models including crossover effects from followers towards leaders show significantly worse goodness-of-fit statistics and lower information criteria. However, I analyzed aggregate leader-follower relationships only. Crossover effects could also occur between employees of the same status, and an analysis of both crossover in specific leader-follower dyads and within employee networks would enhance our understanding of when and why crossover of stressor appraisals occurs.

In general, chapters C and D are concerned with psychological constructs, i.e., stressor appraisals. As Lazarus (2001) notes: “Psychology doesn’t do very well, even normatively, in predicting what people think, do, and feel, but it does even more poorly with the individual. If we consider the modest size of the correlations and mean differences between conditions that are typically found in psychological research, it should be evident that, in the main, prediction is not a very practical enterprise.” (p. 390). While I have little to add to this statement of one of the most prolific psychologists of the 20th century, I must contend that the effect sizes and directions in my models are robust, their significance levels are, in general, rather high, and goodness-of-fit statistics generally very good. Acknowledging this apparent limitation of every psychological study however, I refer to my methodological limitations.

E.2.2 Methodological Limitations

Although I am confident that my research design allows for useful interpretation of the results of my analyses, as outlined in the previous chapters, my dissertation also suffers from methodological limitations.

First and foremost, relying on survey data entails drawbacks that must be addressed. Although I took measures to minimize response biases, I cannot rule out the possibility that respondents answered certain questions in a socially desirable way. I have asked both dependent

and independent variables in the same questionnaire, and although measures were taken to minimize common method bias, it cannot be ruled out completely.

Overall, it must be stated that all my research objectives relate to constructs that are not easily observable. Psychometric assessments of both skills and stress are not as straightforward as they may sometimes seem, and applying a survey is obviously only one and certainly not the best method to investigate psychometric factors. The findings of my dissertation could be enhanced by both interviews and field experiments.

Most of the constructs I used throughout the questionnaire are commonly used and generally accepted measures of the research objectives of my dissertation. However, certain constructs like, e.g., controller skills, and skill gaps, were (co-)developed by me. Although I am confident that these self-developed constructs measure what they are supposed to measure, it is an obvious limitation to my dissertation. Furthermore, due to constraints in the length of the questionnaire and because of constraints imposed by the workers' council of my case company, I could not ask all the constructs I intended to. As an example, only one appraisal item for challenge and hindrance appraisals each was asked after each stressor construct. My dissertation would have benefitted from Searle and Auton's (2015) multi-item measure for stressor appraisals. Similarly, measuring emotions would have enhanced the analyses both within chapter C and chapter D since it would have allowed for more nuanced interpretations of my findings.

Although my case company was inherently generous in providing me with archival data on the employees, certain data like, e.g., employee performance, were not available, which is why I relied on self-measured performance items that may potentially be overstated.

I have collected data from only one company. While single company studies have certain advantages that are mentioned in the respective chapters, they also limit the generalizability of my findings towards other organizations or functions within a company. This limitation

notwithstanding, I have obtained a large, highly diverse, and representative sample of controllers within a firm which allows for useful interpretations of my findings. Thinking of this dissertation as a quantitative case study may help benchmark its interpretability.¹⁴

Regarding the research methodologies applied in this dissertation, several limitations must be mentioned as well. First, a quantitative approach using data that was collected at one point in time cannot prove causality but only shows correlations. This is the case especially for the methodologies used in chapters C and D. Structural equation models are useful to assess relationships between latent variables that are simultaneously estimated. However, as complex as they are, they can only show correlations and not causal effects. Regarding the models I employed in chapter D, one must note that some significance levels are comparably low, likely due to the remarkable complexity of the models. I have diligently calculated each model and their respective variables, but the effects I describe must be interpreted with caution.

On the other hand, the fsQCA methodology as a set-theoretic approach used in chapter B can address causal complexity across three dimensions: equifinality, causal asymmetry, and conjunctural causation (Pappas & Woodside, 2021). There is an ongoing discussion about whether QCA methodologies are useful for showing causality; indeed, some scholars suggest using QCA models rather than probabilistic models to assess causation on a case level (e.g., Mahoney, 2008).

All constructs that were used throughout the dissertation have been subject to thorough validity analyses. However, there are certain items and constructs in chapters C and D that possess imperfect factor loadings and/or goodness-of-fit statistics, which must be acknowledged.

¹⁴ I am grateful to Evelien Reusen for introducing me to the term “quantitative case study”.

In chapter C, I used job satisfaction as a mediator variable between perceived skills gaps and turnover intention. It must be noted that job satisfaction served as my dependent variable in chapter D. The research interests in both chapters differ, i.e., in chapter C, I analyze the effect of perceived current and future skill gaps on turnover intention and their cognitive appraisals, while in chapter D, I focus on the crossover of appraisals from leaders to followers, and how this crossover process is moderated by LMX. Yet, I cannot rule out multicollinearity. I therefore ran additional analyses and re-calculated each structural equation model of the respective chapters including the dependent variables of the respective other chapters as control variables. All results remained largely unchanged in terms of direction and magnitude; however, the subsample-analysis from chapter D.4.1 did not converge (cf. Table D-6). While I am confident that I have taken all measures to avoid multicollinearity, I cannot rule out this possibility completely, which is a further limitation of my dissertation.

E.3 Future Research

In this dissertation, I answered the research objectives proposed in chapter A. Future research directions of chapters B to D can be found in their respective subsections. However, important questions remain unanswered, and, during the course of this dissertation, new avenues for further research opened up before me. In this section, I will discuss implications for future research on stress and skills in the context of management accounting and beyond.

Chapter B of this dissertation introduced a framework of controller skills to the scholarly community. Researchers may want to apply this framework in other companies' controlling functions as well and may even want to extend it to other occupations. I have shown that controller skills serve as a valid measure of their performance across different hierarchy levels. Therefore, practitioners as well as educators may want to use this framework to assess both students' and employees' endowment with skills and, based thereon, develop academic curricula and training plans in a more targeted fashion.

Furthermore, applying fsQCA-methodology to a skills context seems a promising path for further research. Not only does it enable researchers to investigate controllers' endowment with skills in all its diversity, but it also allows for assessing causal complexity (Misangyi et al., 2017). In particular, this approach capable of investigating equifinality will enhance the ongoing discussion in human capital literature by providing novel insights. In general, I advocate for research on the individual level since the emergence of the human capital resource (Ployhart & Moliterno, 2011) can thus be assessed in more detail, and will likely uncover structures within the human capital resource that have previously not been described. Although Ployhart and Moliterno (2011) refrain from self-reports of human capital, they do stress that proxy measures are unfavourable, and "(...) *whenever possible*, it is preferable to use measures of KSAOs and then aggregate them as appropriate for the emergence model theorized" (p. 145).

Concerning individual-level research, I am the first to describe the perception of skill gaps of employees in a firm. These constructs may be applied elsewhere, as well. However, my analyses could be enhanced by integrating the frameworks from chapters B and C. An integration of COR theory and CHSF as described by LePine (2022) has, so far, received little attention. When speaking of resources, there seem to be different and competing views on what constitutes a resource (e.g., Halbesleben et al., 2014). However, resources are an important factor moderating the stressor-appraisal relationship: "(...) the appraisal process can be positively or negatively impacted by situational factors and individual attributes, [and] we are in the infancy of understanding these moderating conditions and how perceived personal resources may alter the outcome of the appraisal process" (LePine, 2022; p. 245). I therefore call for integrating the individual endowment with skills as a moderator of the relationship between perceived skill gaps and turnover intention.

In general, measuring skill gaps on the individual level may shed light on unit- and firm-level skill gaps, as well. As laid out by Ployhart and Moliterno (2011), thinking of human capital

as an emergent resource, albeit as a unit-level resource, may provide a starting point for further research on skill gaps, as well. Again, as mentioned in the limitations, the investigation of perceived skill gaps as stressors will benefit from applying Searle and Auton's (2015) multi-item appraisal measures to receive even more nuanced insights.

While our understanding of stress in the workplace and, in particular, the CHSF, is far from complete, I add to this literature stream by providing a novel perspective on stress in leader-follower relationships. While leadership has received some attention among CHSF scholars (e.g., LePine et al., 2016), leader stress and leader appraisals have not received much attention. This is remarkable insofar as leaders have mostly been regarded as abstract entities hovering above their followers and not being subject to stress themselves (which they likely are). However, given that stress can have harmful consequences for individuals, further investigation of leader stress may be warranted. Disengaged leaders may not be as capable of providing resources as engaged leaders. As Zhang et al., (2014) note, transformational leaders (assumed to be more engaged) emphasize purpose and empower their followers, thus shaping their appraisals in a positive way.

I applied structural equation models to test my hypotheses in chapter D. Regarding leader-follower relationships and, in particular, leader-follower dyads, multilevel models may uncover crossover effects in a more nuanced fashion. Furthermore, it would be interesting for researchers to investigate crossover processes within employee networks. Employees are not only facing their supervisors when at work, but also their colleagues. One can therefore assume that crossover processes of appraisals that are visible towards others can occur between employees within such networks, as well.

Overall, this dissertation is but a starting point for future research in the areas of human capital, skill gaps, stressor appraisals, and leader-follower relationships. I hope to have contributed valuable insights into the controlling community of a large German company, and to have

introduced useful concepts, frameworks, and theory for further use. However, all the research questions and hypotheses from chapters B to D could be investigated in further detail, in different contexts, and with different methodologies. I deliberately chose what I chose; now, it's someone else's turn to build upon my findings.

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Appendices

Appendix A: Questionnaire/Survey Instruments Used in 2019

About this survey

- We guarantee your responses to be confidential. Answers are only analysed on a very aggregate level. Data sovereignty is strictly with WHU.
- We are interested in your personal opinion. Please select the answer which fits best from your point of view.
- We are aware that some questions may sound similar or redundant. They are, however, not. For methodological reasons and in order to get a deep understanding of your opinions, we kindly ask for your understanding.
- You can pause the questionnaire at any time and continue later by following the link in our e-mail. Your answers will be saved. If you cannot or do not want to answer a question, please move on to the next question.
- To analyse work relations please allow us to receive the ID number of your immediate supervisor. Again, answers are only analysed on a very aggregate level, data sovereignty is strictly with WHU and not accessible by COMPANY. All answers are treated 100% confidentially.
 - I agree
 - I do not agree

If you have any questions or comments, please feel free to contact us anytime via phone (+49 261 6509 482) or e-mail (research@whu.edu).

Language Support

The questionnaire is in English. However, you may select additional support (mouseover translation) in Spanish.

- English version only
- English version with Spanish support

Which is your organizational unit?

- ORGANIZATIONAL UNIT 1
- ORGANIZATIONAL UNIT 2
- ORGANIZATIONAL UNIT 3
- ORGANIZATIONAL UNIT 4
- ORGANIZATIONAL UNIT 5
- ORGANIZATIONAL UNIT 6

Which is the organizational unit you *primarily* work for? (Multiple answers possible)


- ORGANIZATIONAL UNIT 1
- ORGANIZATIONAL UNIT 2
- ORGANIZATIONAL UNIT 3
- ORGANIZATIONAL UNIT 4
- ORGANIZATIONAL UNIT 5
- ORGANIZATIONAL UNIT 6

COMPANY + WHU Survey 2019

Part A: Roles, Tasks and Skills

In the first part of the survey, we would like to ask you about the scope and nature of tasks that you perform at COMPANY. We are fully aware that no one is capable of doing everything at a time. Please try to give us a very exact description of your actual work activities at COMPANY. To answer the following questions, please think of your current position.

Please indicate how frequently you perform each of the following activities in your current position:

Never  Very frequently

1 2 3 4 5 6 7

- Analyzing product and customer profitability for the business. 1 2 3 4 5 6 7
- Developing and evaluating investment opportunities for the business. 1 2 3 4 5 6 7
- Developing new strategies for the business. 1 2 3 4 5 6 7
- Finding new ways to meet the targets of the business. 1 2 3 4 5 6 7
- Developing cost saving and revenue increasing plans for the business. 1 2 3 4 5 6 7

- Developing internal controls and procedures. 1 2 3 4 5 6 7
- Ensuring that managers observe all financial reporting requirements. 1 2 3 4 5 6 7
- Developing performance reports for higher level managers. 1 2 3 4 5 6 7
- Assessing whether managers observe agreements with corporate headquarters and adhere to company regulations. 1 2 3 4 5 6 7
- Ensuring that managers do not spend more than strictly necessary from a corporate perspective. 1 2 3 4 5 6 7

- Preparing quarterly and annual financial reports. 1 2 3 4 5 6 7
- Collecting data from operations. 1 2 3 4 5 6 7
- Maintaining data systems. 1 2 3 4 5 6 7
- Carrying out ad hoc analyses on demand. 1 2 3 4 5 6 7
- Preparing financial and budgetary plans. 1 2 3 4 5 6 7

Please indicate to what extent you agree with each of the following statements regarding your current position:

Not at all  To a large extent

1 2 3 4 5

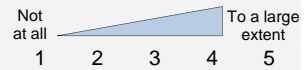
- I work with two or more groups of people who operate quite differently 1 2 3 4 5
- I receive incompatible requests from two or more people 1 2 3 4 5
- I do things that are apt to be accepted by one person and not accepted by others. 1 2 3 4 5
- I have to buck a rule or policy in order to carry out an assignment 1 2 3 4 5

Please indicate again to what extent you agree with each of the following statements. Think about the circumstances characterized by your answers on the preceding four statements:

- I feel that these circumstances are a beneficial opportunity for me 1 2 3 4 5
- I feel that these circumstances are a hindering constraint for me 1 2 3 4 5

Appendices

Please indicate to what extent you agree with each of the following statements regarding your current position:

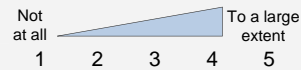


- I receive an assignment without the manpower to complete it 1 2 3 4 5
- I receive an assignment without adequate resources and materials to execute it 1 2 3 4 5
- I have to do things that should be done differently 1 2 3 4 5
- I work on unnecessary things 1 2 3 4 5

Please indicate again to what extent you agree with each of the following statements. Think about the circumstances characterized by your answers on the preceding four statements:

- I feel that these circumstances are a beneficial opportunity for me 1 2 3 4 5
- I feel that these circumstances are a hindering constraint for me 1 2 3 4 5

Please indicate to what extent you agree with each of the following statements regarding your current position:

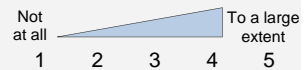


- I have to work under vague directives or orders 1 2 3 4 5
- I have unclear, unplanned goals and objectives for my job 1 2 3 4 5
- I feel uncertain as to how my job is linked 1 2 3 4 5
- I have to "feel my way" in performing my duties 1 2 3 4 5

Please indicate again to what extent you agree with each of the following statements. Think about the circumstances characterized by your answers on the preceding four statements:

- I feel that these circumstances are a beneficial opportunity for me 1 2 3 4 5
- I feel that these circumstances are a hindering constraint for me 1 2 3 4 5

Please indicate to what extent you agree with each of the following statements regarding your current position:

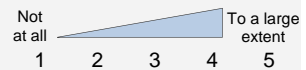


- I receive an assignment without the manpower to complete it 1 2 3 4 5
- I receive an assignment without adequate resources and materials to execute it 1 2 3 4 5
- I have to do things that should be done differently 1 2 3 4 5
- I work on unnecessary things 1 2 3 4 5

Please indicate again to what extent you agree with each of the following statements. Think about the circumstances characterized by your answers on the preceding four statements:

- I feel that these circumstances are a beneficial opportunity for me 1 2 3 4 5
- I feel that these circumstances are a hindering constraint for me 1 2 3 4 5

Please indicate to what extent you agree with each of the following statements regarding your current position:



- I have to work under vague directives or orders 1 2 3 4 5
- I have unclear, unplanned goals and objectives for my job 1 2 3 4 5
- I feel uncertain as to how my job is linked 1 2 3 4 5
- I have to "feel my way" in performing my duties 1 2 3 4 5

Please indicate again to what extent you agree with each of the following statements. Think about the circumstances characterized by your answers on the preceding four statements:

- I feel that these circumstances are a beneficial opportunity for me 1 2 3 4 5
- I feel that these circumstances are a hindering constraint for me 1 2 3 4 5

Please indicate to what extent you agree with each of the following statements regarding your current position:

Not at all  To a large extent

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Considering my competencies, I do not feel adequately equipped for the future
- In the future, my competencies will not be relevant for my work
- I do not possess competencies that will be necessary in the future

Please indicate again to what extent you agree with each of the following statements. Think about the circumstances characterized by your answers on the preceding three statements:

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>


- I feel that these circumstances are a beneficial opportunity for me
- I feel that these circumstances are a hindering constraint for me

Part B: Perspectives on COMPANY


This part is concerned with how you view COMPANY, its units, and your profession. We would again like to emphasize that your answers will be treated confidentially and are 100% anonymous.

Please indicate to what extent you agree with each of the following statements regarding your current position:

- I am working on the “right” topics.
- Decisions are usually made at the level where the best information is available.
- My workload is manageable.
- The organization expects increasingly more of me than my skills and/or abilities provide.
- I have increasingly more work to do than can be done in an ordinary day.
- I feel supported by my immediate colleagues.
- I feel supported by my supervisor(s).
- Information is widely shared in my unit so that everyone can get the information when it is needed.
- I feel integrated, informed, and up to date regarding Controlling topics within COMPANY.
- I am granted the possibility for professional development at COMPANY.
- I am satisfied with my current position.
- Over the last three years, COMPANY has invested adequately in controlling-related tangible assets such as IT, data systems, etc.
- Over the last three years, COMPANY has invested adequately in controlling-related intangible assets such as working climate, networking, etc.

	Not at all					To a large extent
	1	2	3	4	5	
▪ I am working on the “right” topics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ Decisions are usually made at the <u>level where the best information is available</u> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ My <u>workload</u> is <u>manageable</u> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ The <u>organization expects increasingly more</u> of me than my skills and/or abilities provide.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ I have <u>increasingly more work to do</u> than can be done in an ordinary day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ I feel <u>supported</u> by my immediate colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ I feel <u>supported</u> by my <u>supervisor(s)</u> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ <u>Information is widely shared</u> in my unit so that everyone can get the information when it is needed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ I feel <u>integrated, informed, and up to date</u> regarding Controlling topics within COMPANY.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ I am granted the possibility for <u>professional development</u> at COMPANY.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ I am satisfied with my <u>current position</u> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ Over the last three years, COMPANY has invested adequately in <u>controlling-related tangible assets</u> such as IT, data systems, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
▪ Over the last three years, COMPANY has invested adequately in <u>controlling-related intangible assets</u> such as working climate, networking, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Considering all of your duties and responsibilities, how would you rate your overall performance at work during the past 12 months?

Poor							Excellent
1	2	3	4	5	6	7	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	


How do you think you compare as a Controller with other Controllers at the same level as you? Taking everything into consideration, I would consider myself ...

Well below average							Well above average
1	2	3	4	5	6	7	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Please indicate to what extent you agree with each of the following statements regarding your current position:

How satisfied are you with ...

- ... your present job when you compare it to jobs in other organizations?
- ... the progress you are making toward the goals you set for yourself in your present position?
- ... the chance your job gives you to do what you are best at?
- ... your present job when you consider the expectations you had when you took the job?
- ... your present job in light of your career expectations?

Very dissatisfied							Very satisfied
1	2	3	4	5	6	7	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Please indicate to what extent you agree with each of the following statements.

Strongly disagree						Strongly agree
	1	2	3	4	5	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

- My job requires me to work very hard
- I do not have enough time to complete my job
- I experience conflicting demands in my work
- My job involves a great deal of work to be done

Please indicate again to what extent you agree with each of the following statements. Think about the circumstances characterized by your answers on the preceding four statements:

○	○	○	○	○
○	○	○	○	○

- I feel that these circumstances are a beneficial opportunity for me
- I feel that these circumstances are a hindering constraint for me

Please indicate to what extent you agree with each of the following statements.

Strongly disagree								Strongly agree
	1	2	3	4	5	6	7	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

- I never cover up my mistakes.
- I always obey laws, even if I am unlikely to get caught.
- I never take things that do not belong to me.

Part C: Controller Perspectives

In this part, we would like to find out about your perspectives on and work life at COMPANY. Please answer the questions as intuitively and openly as you can – don't think too long about it.
 For the statements asking about your relation with others, please consider your team as the group of all immediate colleagues that share the same direct supervisor with you (including the supervisor her-/himself).

Please indicate to what extent you agree with each of the following statements regarding your current position:

Strongly disagree							Strongly agree
1	2	3	4	5	6	7	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- When someone criticizes COMPANY, it feels like a personal insult.
- I am very interested in what others think about COMPANY.
- When I talk about COMPANY, I usually say 'we' rather than 'they'.
- COMPANY's successes are my successes.
- When someone praises COMPANY, it feels like a personal compliment.
- If a story in the media criticized COMPANY, I would feel embarrassed.

Please indicate to what extent you agree with each of the following statements regarding your current position:

Strongly disagree							Strongly agree
1	2	3	4	5	6	7	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- My direct supervisor would be personally inclined to help me solve problems in my work.
- My working relationship with my direct supervisor is effective.
- I have enough confidence in my direct supervisor that I would defend and justify her/his decisions if she or he were not present to do so.
- My direct supervisor considers my suggestions for change.
- My direct supervisor and I are suited to each other.
- My direct supervisor understands my problems and needs.
- My direct supervisor recognizes my potential.

Please indicate to what extent you agree with each of the following statements:

Strongly disagree							Strongly agree
1	2	3	4	5	6	7	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>


- I proactively develop and make suggestions for issues that may influence my team.
- I proactively suggest new projects that are beneficial to my team.
- I raise suggestions to improve the team's working procedure.
- I proactively voice out constructive suggestions that help the team reach its goals.
- I advise other colleagues against undesirable behaviors that would hamper job performance.
- I speak up honestly with problems that might cause serious loss to the team, even when/though dissenting opinions exist.
- I dare to voice out opinions on things that might affect efficiency in my team, even if that would embarrass others.
- I dare to point out problems when they appear in my team, even if that would hamper relationships with other colleagues.
- I proactively report coordination problems in the workplace to the management.

Please indicate to what extent you agree with each of the following statements regarding your current position:

Strongly disagree								Strongly agree
	1	2	3	4	5	6	7	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

- I have significant autonomy in determining how I do my job.
- I can decide on my own how to go about doing my work.
- I have considerable opportunity for independence and freedom in how I do my job.
- I have a large impact on what happens in my team.
- I have a great deal of control over what happens in my team.
- I have significant influence over what happens in my team.

Please indicate to what extent you agree with each of the following statements:

Strongly disagree								Strongly agree
	1	2	3	4	5	6	7	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

- I intend to leave *COMPANY* in the next 12 months
- It is likely that I will stay with *COMPANY* in the next 12 months

Part D: Demographics

Finally, we would like to ask for some personal information.

Please be assured again that all answers to this survey are treated strictly confidentially. You may also choose to only answer some of these questions.

- What is your year of birth? ...
- What is your gender? ...
- What is your nationality? ...

▪ Please indicate in how many countries (including the current) you have worked during your entire career. Only include countries in which you have worked for more than 2 months.

For how many years have you been working ...

- in Controlling (inside and outside COMPANY)? ...
- in the Finance/Controlling organization at COMPANY? ...
- in your current position? ...
- in your unit? ...
- at COMPANY? ...
- with your immediate supervisor? ...

Which region are you located in?

- REGION 1
- REGION 2
- REGION 3
- REGION 4
- REGION 5
- REGION 6
- REGION 7

How geographically close are you to your immediate supervisor?

- 1 – Not same region
- 2 – Same region
- 3 – Same country
- 4 – Same site
- 5 – Same building
- 6 – Same office

Please indicate your highest degree.

- No degree
- High school
- Apprenticeship
- Undergraduate/ Bachelor degree
- Masters degree
- MBA
- Doctorate/ Ph.D.

What was the functional focus of your education?
(multiple answers possible)

- Engineering
- Science
- Business Administration/Economics
- Liberal Arts
- Law
- Other (please specify) ...

What is your current HIERARCHY LEVEL?

- HIERARCHY LEVEL 1
- HIERARCHY LEVEL 2
- HIERARCHY LEVEL 3
- HIERARCHY LEVEL 4
- HIERARCHY LEVEL 5
- HIERARCHY LEVEL 6
- HIERARCHY LEVEL 7
- HIERARCHY LEVEL 8
- HIERARCHY LEVEL 9

Please indicate any proposals for improvement in your area of work.

...

If you have any suggestions on this survey, please comment.

...

Thank you very much for your participation!

Appendix 1 of the Doctoral Program Regulations of April 6th, 2021

Last Name: Rester

First Name: Florian Paul Renatus

Declaration

in accordance with § 12 part 1 no. 8 of the Doctoral Program Regulations of April 6th, 2021

I hereby affirm that I have written the

Dissertation “Skills and Stress of Management Accountants in the Firm “

submitted to Wissenschaftliche Hochschule für Unternehmensführung (WHU) -Otto-Beisheim-Hochschule- by myself and without using any means of resources other than those stated.

This dissertation has not been presented in the same or any similar manner either in whole or in part to any other board of examiners.

Sentences, text passages, data or concepts taken from other sources either word for word or as regards content have been marked accordingly and the source indicated.

The following persons helped me in the manner described in return for payment/for no payment when it came to selecting and evaluating the following materials:

Last Name	First Name	Type of Assistance	For pay-ment/For no payment
Dr. Reimer	Marko	Thesis Supervision/Advisor/Co-Authorship Chapters B and D	For no payment
Dr. Schaupp	Daniel	Thesis Supervision/Advisor/Co-Authorship Chapters B and D	For no payment

No other persons have been involved in the preparation of the presented dissertation with regard to its content or substance. In particular, I have not drawn on the paid help of referral or advisory services (doctoral counsels or other persons). Nobody has directly or indirectly payments in kind from me for any work associated with the content of the dissertation presented.

The dissertation does not contain any elements which are the subject of current doctoral projects or doctoral projects which have already been completed.

Place and date of issue _____

Signature _____