Competitive Human Resource Practices: Development of a Novel Concept and Measure

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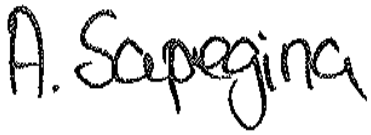

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EXECUTIVE SUMMARY

For a long time, organizations have used certain human resource practices to inject internal competition into the workplace. Intended to generate a healthy comparison culture among employees and to attract outstanding talent to populate the higher ranks of organizations, these practices, however, often drift away from their intended purpose. Despite their use and the intense debate among practitioners on their controversial nature, rigorous research on the consequences of competitive human resource practices is still lacking. Competitive human resource practices have not been systematically examined in Human Resource Management research, neither theoretically nor empirically. This dissertation aims at filling this void.

First, it establishes a conceptual definition and the core features of such 'competitive' human resource practices. It also develops a theoretical framework to explain their contradictory impact on employees' attitudes and behaviors. This framework builds on social comparison and emotion research to explain when competitive human resource practices might unfold their dark side and when a less harmful, or even a bright side of competitive human resource practices might emerge.

Second, no measure is available to study the controversial impact of competitive human resource practices in the field. This dissertation develops such a measure. In brief, it derives a set of intra-team and inter-team competitive human resource practices from the field, extends them through a scholarly assessment to come up with a list of practices that are characterized by strong content validity.

Third, we then conduct a series of psychometric studies to validate our measure of competitive human resource practices. We test our newly developed measure of intra-team competitive human resource practices for its ability to predict employee knowledge hiding behavior. Our findings show that competitive human resource practices used to inspire competition within teams evoke malicious envy and, in consequence, also employee knowledge hiding behaviors towards fellow team members.

By developing a conceptual framework and a valid measure of competitive human resource practices, this dissertation advances our knowledge about the impact of competitive HR practices in organizations both theoretically and empirically.

ZUSAMMENFASSUNG

Viele Organisationen setzen auf Personalpraktiken, die den internen Wettbewerb am Arbeitsplatz fördern. In der Geschäftswelt wird jedoch zunehmend vor potentiellen Gefahren solcher 'kompetitiven' Personalpraktiken gewarnt. Die wissenschaftliche Forschung hierzu steckt dagegen weitestgehend am Anfang. Kompetitive Personalpraktiken wurden bisher weder theoretisch noch empirisch erfasst. Des Weiteren gibt es kaum wissenschaftliche Studien, die die Folgen solcher Praktiken für Organisationen überprüfen. Die vorliegende Dissertation hat zum Ziel diese Lücke zu schliessen.

Diese Dissertation nimmt zunächst eine begriffliche Konzeptualisierung kompetitiver Personalpraktiken vor und erarbeitet ein theoretisches Modell, das die widersprüchlichen Auswirkungen kompetitiver Personalpraktiken erklärt. Dieses Modell kombiniert aktuelle Forschungsergebnisse zu sozialen Vergleichen und Emotionen am Arbeitsplatz, um aufzuzeigen, wann kompetitive Personalpraktiken negative Wirkung auf Mitarbeitende zeigen und wann mit weniger negativen, oder sogar mit positiven Folgen von kompetitiven Personalpraktiken zu rechnen ist.

Bis jetzt ist kein Messinstrument vorhanden um kompetitive Personalpraktiken im Feld zu adressieren und ihre potentiellen (auch negativen) Auswirkungen in Organisationen zu bestimmen. Daher entwickelt und validiert diese Dissertation im zweiten Schritt ein psychometrisch fundiertes Messinstrument, um kompetitive Personalpraktiken valide zu erheben. Kurzgefasst: Sie erkundet und leitet induktiv ein Set von intra- und inter-team bezogenen kompetitiven Personalpraktiken ab, erweitert und kombiniert diese Personalpraktiken deduktiv zu einem Messinstrument.

Anschließend wird das Messinstrument psychometrisch mittels mehrerer Validierungsstudien getestet. Die Ergebnisse zeigen, dass intra-team kompetitive Personalpraktiken böswilligen Neid hervorrufen und in der Folge auch das bewusste Zurückhalten von Wissen - *Knowledge Hiding* - fördern.

Durch die Entwicklung eines konzeptuellen Rahmens und eines validen Messinstrumentes für kompetitive Personalpraktiken erweitert diese Dissertation unser Wissen über das Thema sowohl theoretisch als auch empirisch.

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Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;

Then took the other, as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear;
Though as for that the passing there
Had worn them really about the same,

And both that morning equally lay
In leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads on to way,
I doubted if I should ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

Robert Frost

CHAPTER 1: INTRODUCTION

> "Cause we're adding a little something to this month's sales contest. As you all know first prize is a Cadillac El Dorado. Anyone wanna see second prize? Second prize is a set of steak knives. Third prize is you're fired. Get the picture? You laughing now? You got leads."
>
> (Blake, Glengarry Glen Ross, 1992)

Problem Setting

Over the last few decades, research on the impact of human resource (HR) practices has flourished in many respects. Generally, the term HR practices refers to organizational practices that used either individually or in combination to effectively manage employees in organizations (e.g., Combs, Liu, Hall, & Ketchen, 2006b; Huselid, 1995; Jiang, Lepak, Hu, & Baer, 2012; Paauwe & Boselie, 2005). HR practices include selection and recruitment, training and development, as well as performance management and rewards schemes (e.g., Paauwe & Boselie, 2005; Posthuma, Campion, Masimova, & Campion, 2013). An extensive body of human resource management (HRM) literature illustrates that HR practices combined into systems, also called 'bundles'[1], positively impact numerous workplace-related outcomes (for a review see e.g., Jiang, Lepak, Hu, et al., 2012; K. Jiang & J. Messersmith, 2017; Van de Voorde, Paauwe, & Van Veldhoven, 2012).

In this vein, a plethora of bundling approaches to HR practices emerged and has since been growing. Besides the more traditionally studied bundles of high-performance work systems (Huselid, 1995), high-control, and high-commitment systems (Arthur, 1992, 1994), various additional bundles have been introduced to the field (Jiang, Takeuchi, & Lepak, 2013). For example, bundles of high-investment HR practices (Lepak, Taylor, Tekleab, Marrone, & Cohen, 2007), bundles of ability-motivation-opportunity enhancing HR practices (Gardner, Wright, & Moynihan, 2011), ambidextrous HRM

[1] In line with previous HRM research, in this dissertation, the terms HR bundles and HR systems are used interchangeably to refer to HR practices combined with each other according to a specific underlying logic (Lepak, Liao, Chung, & Harden, 2006; Posthuma et al., 2013).

systems (Garaus et al., 2016), and many others are still emerging (Marchington & Zagelmeyer, 2005).

However, despite the variety of insights and conceptualizations, HR scholars have still not come to terms with the existing trend in organizations to inject internal competition in the workplace through various HR instruments (Bidwell, Briscoe, Fernandez-Mateo, & Sterling, 2013; Pfeffer & Sutton, 2013). Prominent examples of such HR practices are forced rankings, up-or-out contracts, winner-takes-all awards and recognition systems. These 'competitive' HR practices reward high-performers with asymmetrically high bonuses and promotion opportunities, while often also punishing low-performers (e.g., Bidwell et al., 2013; Moon, Scullen, & Latham, 2016; Pfeffer & Sutton, 2013).

Intended to generate a healthy comparison culture among employees and to attract outstanding talent to populate the higher ranks in organizations, these systems often seem to drift away from their intended course in practice. On the one hand, corporations like Microsoft, Adobe, and Ford banned forced rankings, because their use allegedly increased antisocial behavior towards coworkers and consequently jeopardized team performance and team spirit (e.g., Pfeffer & Sutton, 2013). On the other, such competition inducing HR practices are still quite common. According to recent articles in business journals, firms like Amazon and Uber rely on such "dog-eat-dog" practices to manage their employees (e.g., Isaac, 2017; Kantor & Streitfeld, 2015). Business papers and magazines abound with fierce discussions about the seemingly hazardous impact of internal workplace competition on collaboration and productivity. Headlines such as "Performance Management is Broken: Replace 'Rank and Yank'", "Morgan Stanley to Rate Employees with Adjectives, Not Numbers," "Amazon changing its 'Hunger Games' Employee Review Process" or "Kill Your Performance Ratings," demonstrate the currently vivid discussion about competitive HR practices.

Despite competitive HR practices attracting vivid criticism from some scholars almost 20 years ago (Pfeffer, 1998; Pfeffer & Sutton, 2000) and being highly debated among practitioners, research on this topic remains comparably mute (DeNisi, Wilson, & Biteman, 2014; Moon et al., 2016). Some of these competition-injecting practices have been studied mainly by economists in experiments and to a lesser extent in field

research, but both approaches have yielded indecisive results (e.g., Jones, Davis, & Thomas, 2015; Kilduff, Elfenbein, & Staw, 2010). For instance, some studies suggest that competitive rewards induce higher employee effort and a higher motivation to outperform peers (Orrison, Schotter, & Weigelt, 2004; van Dijk, Sonnemans, & van Winden, 2001). Other studies, in contrast, indicate that competitive rewards have negative affective and performance consequences (Beersma et al., 2003; Larkin, Pierce, & Gino, 2012; Wittchen, Krimmel, Kohler, & Hertel, 2013). Several other competitive HR practices have attracted even less scientific attention. For instance, relative ratings have rarely been the subject of rigorous scientific studies (for an exception see Luffarelli, Gonçalves, & Stamatogiannakis, 2016). Relatively little is also known about the effect of awards (Gallus & Frey, 2016; Gubler, Larkin, & Pierce, 2016).

Research in strategic human resource management (SHRM) has largely omitted the systematic inclusion of competitive practices in their contemporary discussions and conceptualizations, even though research into HR practices has experienced enormous growth over the last few decades (e.g., Jiang, Lepak, Hu, et al., 2012; Posthuma et al., 2013). For example, DeNisi et al. (2014) highlight that forced rankings are "a case where many companies use a technique […], which some in the profession have criticized, but where there has been virtually no empirical research by scholars. This may be a case where research can have a real impact on practice if scholars finally decide to study this topic" (DeNisi et al., 2014, p. 226). The dearth of research on competitive HR practices is surprising, particularly given the recent evidence on the dark side of HR practices. This evidence indicates that HR practices might have detrimental consequences for employees' motivational and health-related outcomes (Jensen & Van de Voorde, 2016; Van de Voorde et al., 2012). Competitive HR practices are likely to be significant contributors to such detrimental outcomes because these practices seem to generate unfavorable comparisons.

Recent theoretical contributions suggest that the theory of social comparison processes may provide a useful theoretical lens to understand the effect of competitive HR practices on employees' affective and behavioral outcomes at work (Greenberg, Ashton-James, & Ashkanasy, 2007; Larkin et al., 2012; Obloj & Zenger, 2017). Studies from

the field of social comparison research indicate that competitive HR practices might harm employees' outcomes due to unfavorable social comparison processes when faced with competition. These unfavorable comparison processes harm employees because they evoke adverse affective reactions such as feelings of envy, schadenfreude, and resentment (Lam, Van der Vegt, Walter, & Huang, 2011; Schaubroeck & Lam, 2004; Vecchio, 2000, 2005). Several studies demonstrate that envy harms employees' behavior and attitudes at work by intensifying workplace deviance (E. Kim & Glomb, 2014; S. Kim, Jung, & Lee, 2013), enhancing intentions to quit (Vecchio, 2000), diminishing individual performance (Duffy & Shaw, 2000), and reducing trust at the workplace (Dunn, Ruedy, & Schweitzer, 2012). However, some scholars have also discussed the bright side of envy, the benign envy. According to this research, envy in its benign form drives individuals' achievement motivation. It stimulates self-improvement and increases effort (Van de Ven, 2016; Van de Ven, Zeelenberg, & Pieters, 2009, 2012).

While a promising avenue, research applying social comparison theory in HRM is still scarce (e.g. Goodman & Haisley, 2007; Greenberg et al., 2007). This is particularly the case concerning competitive HR practices. Research on how competitive HR practices impact employees' attitudes and behaviors is at a very nascent stage. There is some research on individual competitive HR practices and social comparison processes (Lam et al., 2011; Schaubroeck & Lam, 2004). However, previous research has not systematically linked the effects of competitive HR practices as a bundle to employee attitudes and performance and the social comparison processes. Even after decades of extensive research, it seems that social comparison theory is still not much present in the field (for a review on current theoretical perspectives prevailing in HRM consult K. Jiang & Jake Messersmith, 2017).

In summary, competitive practices represent an object of study that has been neither theoretically nor empirically examined systematically within the existing research on HR practices and their impact on organizations. Current research in the field of HRM has, at best, a very limited understanding of which individual HR practices or bundles of HR practices companies use to inject competition and how these competitive HR

bundles impact the employees of these organizations. Consequently, HR research would profit from investigating competitive HR practices to better understand the various ways in which companies use them and explore their potentially detrimental effects on organizations.

Overarching Goals of the Dissertation

As delineated above, further research is required to understand which HR practices organizations use to inspire competition and how these HR practices are combined into bundles to impact employee and organizational outcomes. To bridge this gap, this dissertation pursues three overarching goals. The first overarching goal of this dissertation is to elaborate on the building blocks of competitive HR practices at the conceptual level. Prior conceptualizations of a bundle of competitive HR practices are lacking, and theoretical insights into how and to what extent competitive HR practices might impact workplace outcomes are limited. We thus need to provide a thorough conceptualization of competitive HR practices and delineate a theoretical model that explains their potentially adverse impact on employee outcomes first.

The second goal of this dissertation is to explore which HR practices companies use to inject competition among employees. Research has only a limited understanding of competitive HR practices companies use to inspire competition among employees. Also, no measure of competitive HR practices is currently available to study the controversial impact of competitive human resource practices in the field. Therefore, this dissertation derives a set of intra-team and inter-team competitive human resource practices from the field, extends them through a scholarly assessment to come up with a list of practices that are characterized by strong content validity. The list of competitive HR practices is then translated into a measure of competitive HR practices.

The final goal of this dissertation entails validating and testing the developed measure of competitive HR practices in the field. Given that no measures are available to assess competitive HR practices in the field, this step will advance our understanding immensely. It will provide a psychometrically validated measurement instrument for

future research to study the impact of such practices in organizations in a systematic way.

Overall Research Design of the Dissertation

To achieve the three research goals outlined above, this dissertation starts with a theoretical conceptualization of competitive HR practices. It develops a conceptual definition and a framework that extrapolates the potential impact of competitive HR practices in organizations based on research from social comparison processes and emotions. We[2] continue with a series of four consecutive empirical studies that follow a sequential exploratory mixed-methods design (Creswell & Clark, 2011; Onwuegbuzie, Bustamante, & Nelson, 2010). We conduct one qualitative and three quantitative studies to establish a measure of competitive HR practices.

In the first, qualitative study, we develop a list of competitive HR practices through semi-structured interviews with HR representatives of Swiss-based companies (Study 1). The HR practices identified in the interviews with the practitioners from the first study represent the starting point of our second study (Study 2). In this study, we conduct a quantitative expert rating study with renowned HR scholars, who were asked to rate the extent to which the hitherto identified competitive HR practices should be considered as part of the competitive HR practices bundle. With this step, we sought to facilitate better content validity of the generated list of competitive HR practices before the subsequent psychometric test in the field.

After this step, we proceed with two consecutive quantitative studies, each using a different sample of high-reputation full-time workers from Prolific Academics to validate and test our measurement instrument psychometrically. The first psychometric study (Study 3) examines whether the developed measure of HR practices is a higher-order construct. Finally, Study 4 addresses the predictive validity of the competitive HR

[2] Except for chapter 3, this dissertation has been accomplished in single authorship by the author of this dissertation. In order to avoid any stylistic discontinuity, the author of this dissertation decided to stick with the personal plural form throughout the whole dissertation.

practices measure. It develops a set of hypotheses and tests the impact of competitive HR practices on employee knowledge hiding behaviors.

Overall Contributions of the Dissertation

Our work provides a unique contribution to research in the field of HRM. It follows a comprehensive approach, both conceptually and empirically, to establish a new bundle of HR practices - the competitive HR practices bundle. In this dissertation, we conceptualize the construct of competitive HR practices and provide a conceptual framework on their potential impact in organizations based on research from social comparison processes and emotions. This step distinguishes our concept from other concepts prevailing in the field of HRM. It provides a process model that extrapolates the potential double-edged sword nature of such practices on employees' attitudes and behaviors.

By adopting multiple methods to identify, extend, and consolidate competitive HR practices, we devise a comprehensive and psychometrically valid measure of the competitive HR practices bundle. Our work lays the ground for future research to investigate whether HR practices used to introduce internal competition in the workplace have unwanted (and even highly toxic) side effects or not. Our work enables scholars to study competitive HR practices in a systematic and psychometrically established way. It resonates with recent calls to further examine the potential dark side of HR practices bundles in organizations.

Furthermore, this dissertation extends the emerging literature on the interplay of HR practices and social comparison processes. Specifically, this dissertation investigates the role of competitive HR practices in predicting employee knowledge hiding from the perspective of the social comparison processes and emotions they evoke. It also opens new opportunities to investigate whether these HR practices, in combination with other HR practices, might induce healthy competition or even culminate into deadly combinations that undermine employee and organizational outcomes.

This dissertation is also of high value for practitioners. It delivers managers a tool to evaluate and diagnose the HR bundles organizations use to manage their employees.

With this tool, practitioners, managers, and HR professionals, in particular, will be able to gather firm-specific insights about the degree of competitiveness of the HR systems used in their organization. Such a diagnostic tool will allow managers to conduct in-house analyses and assessments of the impact of these HR practices within their organization. Conducting such an assessment would help firms to establish whether the HR practices they use are competitive and whether these practices tie in with their overall culture and the purpose of their people management strategy. This tool also enables companies to get first hand, organization-specific insights about the impact of competitive HR practices on relevant employee and organizational outcomes and, if necessary, adjust their system if some of these HR practices are undermining organizational goals.

Outline of the Dissertation

After this introductory chapter, we take a detailed look at the challenges facing the field of HRM research in Chapter 2 of this dissertation. There, we summarize research challenges related to the way HR practices are bundled, operationalized, and measured in previous research. We conclude Chapter 2 by summarizing the steps taken in this dissertation to tackle these challenges.

In Chapter 3, we derive the conceptual building blocks of competitive HR practices based on social interdependence and competition research. We extrapolate the core characteristics of competitive HR practices, distinguish them from existing prominent HR bundles introduced in previous research, and provide a theoretical framework that explains the potential impact of competitive HR practices on employee outcomes.

Chapter 4 of this dissertation is devoted to establishing the structure of the construct of competitive HR practices from an epistemic perspective. We explicate different epistemic types of constructs distinguished in the measurement literature (e.g., reflective-formative, formative-formative). Based on this distinction and the specific epistemic characteristics of the concept of HR practices bundles, we outline why these constructs (including the one this study conceptualizes) are best understood and operationalized as the formative-formative type of constructs.

Chapter 5 empirically investigates the building blocks of the competitive HR practices bundle. It explores the HR practices organizations use to inspire internal competition among employees in the field as well as content validates and extends these HR practices with the help of HR scholars. With this step, it establishes a set of single HR practices to be combined into a measure of a competitive HR practices bundle.

In Chapter 6, we complement these insights. We empirically validate and test the measure of competitive HR practices as a formative higher-order construct. We then proceed with an assessment of the predictive validity of our measure by testing the impact of competitive HR practices on employee knowledge hiding.

This dissertation closes with Chapter 7. In this chapter, we summarize the key findings, discuss contributions as well as potential limitations of our work. We conclude this dissertation by drawing implications for future research and practice.

Table 1 provides an overview of the dissertation.

Table 1. Overview of the Dissertation

Stage oft he Dissertation	**Conceptualizing the Construct of Competitive HR Practices and their Theoretical Impact** (Chapter 3)	**Determining the Epistemic Nature of Competitive HR Practices Bundle** (Chapter 4)	**Exploration & Content Validation of the Competitive HR Practices Bundle** (Chapter 5)		**Psychometric Assessment of the Measurement Instrument of Competitive HR Practices Bundle** (Chapter 6)	
	Conceptual	***Conceptual***	***Qualitative (Study 1)***	***Quantitative (Study 2)***	***Quantitative (Study 3)***	***Quantitative (Study 4)***
Focus of Analysis	Conceptualization of the construct	Theorizing the epistemic structure of the construct	Exploring & generating an initial pool of HR practices	Content validity& extending the pool of HR practices	Convergent validity of the measurement	Predictive validity of the measurement
Research Design	Theory bridging Construct definition Provision of the theoretical process model	Epistemic theorizing Discussing the higher-order structure of the construct	Semi-structured interviews Qualitative Content Analysis Gioia Framework	Surveys Multi-rater agreement Content validity assessment	Surveys PLS-SEM measurement model analysis	Surveys PLS-SEM measurement model analysis
Main Data Sources	Literature Competition Social comparison Envy and inspiration	Literature HRM Formative-formative Higher-order constructs	N=26 HR professionals Switzerland	N=14 HR scholars International	N=383 Full-time employees Prolific Academics online data pool International	N=535 Full-time employees Prolific Academics online data pool International

CHAPTER 2: CHALLENGES RELATED TO RESEARCH ON BUNDLES OF HR PRACTICES

The field of HRM looks back at a tremendous amount of research conducted on HR practices and their impact on organizations. Numerous studies show that HR practices combined into a system, rather than individual HR practices, positively impact different workplace-related outcomes (for reviews see Combs, Liu, Hall, & Ketchen, 2006a; Jiang, Lepak, Hu, et al., 2012; Van de Voorde et al., 2012). Thereby, the main focus of the existing research has been on the high-performance work practices bundle (HPWS), defined as "a group of separable but interconnected HR practices designed to enhance employees' skills and effort" (Takeuchi, Lepak, Wang, & Takeuchi, 2007, p. 1069).

However, the field of HRM still faces several challenges when it comes to how HR practices are combined into bundles. These challenges have already been extensively discussed in previous works and reviews on the topic (Bainbridge, Sanders, Cogin, & Lin, 2017; Beijer, Peccei, van Veldhoven, & Paauwe, 2019; Boon, Den Hartog, & Lepak, 2019). From these literature, two broad fields of tensions can be identified: tensions at the conceptual level and the measurement level. In this chapter, we summarize what has become the most recent source of debates.

The next section provides an overview of the current challenges the field of HRM faces when it comes to measuring HR practices combined into bundles and derives specific steps addressing these challenges in this dissertation. We will first focus on the conceptualization before moving to measurement. Table 2 shows the challenges and how they are met in this work.

Challenges to Address When Providing A New Bundle of HR Practices

Conceptualization and Combination of HR Practices into Bundles. An ever-growing variety of ways in which research combined single HR practices into bundles or systems emerged from decades of extensive research (Boon et al., 2019; Lepak et al., 2006; Posthuma et al., 2013). The most prominent among these are the 'high-performance'

(Appelbaum, Bailey, Berg, Kalleberg, & Bailey, 2000; Huselid, 1995), 'high-commitment,' and 'high-control' HR bundles (Arthur, 1992, 1994).

Most of these conceptualizations, however, have not been separated from each other sufficiently (Boon et al., 2019; Lepak et al., 2006). Single HR practices included in a specific system often overlap with HR practices from other HR systems. For example, some studies claim to look into the high-investment or high-involvement practices, while measuring HR bundles with practices that belong to the high-performance practice's system. Hence, it remains unclear why some practices fall into the high-involvement category while being termed as high-commitment or high-performance in others (Boon et al., 2019; Lepak et al., 2006; Marchington, 2015; Thompson, 2011).

The unitary conceptual logic of why and how bundles are composed (of certain practices) is often ambiguous (Lepak et al., 2006). For example, the high-performance practices bundle has been conceptualized differently across studies and researchers (Boselie, Dietz, & Boon, 2005; Combs et al., 2006a; Lepak et al., 2006; Posthuma et al., 2013). Some scholars conceptualize high-performance HR practices through attributes such as rigorous selection procedures, formal information sharing, merit-based pay, and promotion practices contingent on performance (Huselid, 1995; Jensen, Patel, & Messersmith, 2013; Messersmith, Patel, Lepak, & Gould-Williams, 2011). Others, in contrast, define HR practices such as autonomy and decentralization, low-status differences, and compensation systems contingent on organizational as opposed to individual performance as components of high-performance bundles (Pfeffer, 1998).

The internal consistency of bundles studied under the same label is also problematic. Various reviews confirm the combinational and numerical diversity of HR practices even within a specific bundle. For example, Posthuma et al. (2013) provide evidence that the number of studied bundles of HR practices amounted to a list of 61 individual practices in what has become the most prominent HR practices bundle, the high-performance work practices. The reasons for choosing a specific individual HR practice from what scholars have called a "laundry list" are rarely provided in scientific works on the topic (Bainbridge et al., 2017; Boon et al., 2019; Lepak et al., 2006).

Several scholars have already called for a unified understanding of what practices to include in a particular bundle (Jiang et al., 2013; Lepak et al., 2006). They emphasize that instead of randomly selecting HR practices, a sound rationale guiding their selection for incorporation into a coherent system is warranted (K. Jiang & Jake Messersmith, 2017). Despite these calls, the variety of individual HR practices combined to represent a specific bundle is an issue that persists, as indicated by the recent review on the topic by Boon et al. (2019). According to Boon et al. (2019), "different terms are often used for highly similar HR systems, which has not improved over time. For example, while the labels of high-performance and high-commitment HR systems suggest they are differentially strategically targeted HR systems (focused on increasing performance vs. commitment), they are used interchangeably in many studies, implying these labels have become more general than originally intended." (Boon et al., 2019, p. 9).

Thus, research that investigates a specific bundle of HR practices and strives to study its distinctive impact—be it organizational or employee outcomes—needs to address the common (conceptual) denominator that every HR practice in the bundle shares with the others and why they should belong to this specific bundle rather than to another.

> *Challenge 1: Need to establish concept clarity and explicate which HR practices to include in a specific bundle and on what conceptual grounds.*

Operationalization and Measurement of Bundles of HR Practices. Another tension facing the field of HRM lies in how HR practices are operationalized and measured (Bainbridge et al., 2017; Beijer et al., 2019; Boon et al., 2019). On a more general, construct level, the debate concerns whether HR practices are better approached with an additive index or with more complex measurement approaches—like as a latent construct (Boon et al., 2019). Additive indices represent by far the most common way to measure HR practices combined into a specific HR system or bundle (Bainbridge et al., 2017; Boon et al., 2019). According to Boon et al.'s (2019) review, additive indices still prevail and were used in 66 percent of the studies conducted from 1999 to 2017. Even in the review's most recent year-long period (2016-2017), additive indices amounted to 63 percent of the cases (Boon et al., 2019).

The extensive use of additive indices in the field is mainly facilitated by the simplistic nature of such indices (Hauff, 2019; K. Jiang & Jake Messersmith, 2017). Additive indices show that "more is better" (Hauff, 2019, p. 12). They sum up the influence of the individual practices to a single additive score. However, the individual contribution of HR practices to the overall bundle remains unexplored because indices only allow establishing aggregate effects with no indication of the specific importance of subdimensions or single HR practices to the overall construct. However, the pattern of relationships between single HR practices is much more complex. It hardly agrees with the simple logic underlying an additive index formation. HR practices combined into bundles might exert substitutive or even complementary effects on each other, and thus follow interaction modes that are impossible to be detected and assessed via an additive index. The additive measures of HR practices do not allow for such conclusions since they assume and ultimately assess HR bundles as the sum of its parts (Bainbridge et al., 2017; Delery, 1998; Delery & Shaw, 2001; K. Jiang & Jake Messersmith, 2017).

Consequently, several scholars called for more sophisticated approaches to measure HR practices bundles (Chadwick, 2010; Delery & Shaw, 2001; Hauff, 2019; K. Jiang & Jake Messersmith, 2017) in order to provide a better representation of the underlying complexity of the construct. These approaches measure the bundles of HR practices as a latent factor construct (Boon et al., 2019; K. Jiang & Jake Messersmith, 2017), also called higher-order constructs in measurement literature (Edwards, 2001). Such sophisticated measures should enable scholars to address at least some degree of the interaction of HR practices and the importance of each HR practice within a respective bundle, for example, by establishing the relative and absolute contribution of each HR practice to the HR system through weights (Boon et al., 2019; Hauff, 2019). However, despite ongoing calls in HRM research to consider more elaborate approaches to the measurement of HR systems, such types of measures are still comparatively rare. According to Bainbridge et al. (2017), only 7 percent of studies in HRM followed more sophisticated approaches to the measurement of HR practices than the additive approach.

With this in mind, it seems crucial for research to ensure that there is an alignment between the logic inherent to the specific bundle with the way it is measured. Thus, whether HR practices combined into a bundle are additive or follow more complex, latent factor logic (e.g., represent a higher-order construct) should be explicitly addressed.

> *Challenge 2: Need to establish a coherent theoretical logic that facilitates the connection and operationalization of the individual HR practices into specific bundles.*

An additional concern related to the measurement of HR practices is the lack of validation studies. Despite representing standard for newly introduced constructs in organizational behavior research (MacKenzie, Podsakoff, & Podsakoff, 2011), in HRM research, psychometric validation studies are seldom conducted. Noteworthy exceptions are the HR flexibility scale by Way et al. (2015) and the HR systems strength scale by Delmotte, De Winne, and Sels (2012). Furthermore, when studying the impact of a particular HR system, studies generally limit their reporting to psychometric metrics (e.g., Cronbach's alpha metrics) and even use additive measures while reporting metrics such as internal consistency (Bainbridge et al., 2017). However, this approach is highly problematic given that additive indices follow a formative and not a reflective construct logic and thus deem any calculations of Cronbach's alpha as meaningless (Bainbridge et al., 2017; Diamantopoulos & Winklhofer, 2001; Hair, Hult, Ringle, & Sarstedt, 2016). Studies that assess the psychometric quality of HR practice measures beyond the mere calculation of Cronbach's alpha, like those investigating the factorial structure of the measures, are rare (K. Jiang & Jake Messersmith, 2017). However, some studies represent exceptions to this situation (Den Hartog, Boon, Verburg, & Croon, 2013; Li, Wang, Jaarsveld, Lee, & Ma, 2018; Piening, Baluch, & Salge, 2013).

We thus conclude that it is vital for HRM research to provide reliable and valid conclusions about the actual impact of HR practices in organizations. The field of HRM needs to catch up with other fields when it comes to the psychometric assessment of its measures and thus to conduct studies that develop, validate, and test measures of HR practices bundles, especially when introducing new bundles to the field.

Challenge 3: Need to establish the psychometric properties of the measures used to assess the specific HR practices bundle.

Furthermore, another critical issue related to the measurement of HR practices is the question of which informants are best suited to report on what HR practices are applied in the organization (Beijer et al., 2019; Wright et al., 2001). Earlier HRM studies relied primarily on managers as key informants (e.g., HR professionals) to collect insights about the existence and the extent to which organizations deploy specific HR practices (Boon et al., 2019; Wright et al., 2001). With the emergence of research on employee perceptions of HR practices, the focus on managers as key informants has increasingly been criticized as incomplete. It does not account for the discrepancy between what HR practices the organization uses and how employees perceive these HR practices (Beijer et al., 2019; L. Nishii, D. P. Lepak, & B. Schneider, 2008). Den Hartog et al. (2013) get to the heart of this problem by stating that "managers often act as organizational representatives and rate the HR practices offered by the organization. Their answers reflect either the intended or implemented HR practices, but neither is necessarily also a measure of how employees perceive HR practices" (p. 1642). Indeed, the evidence is mounting that a mismatch exists between the HR practices' utilization, implementation, and perception in organizations (Den Hartog et al., 2013; Liao, Toya, Lepak, & Hong, 2009; L. Nishii et al., 2008; Op de Beeck, Wynen, & Hondeghem, 2016; Van de Voorde & Beijer, 2015). However, studies that provide measures for all three levels are limited in number (for a noteworthy exception see Den Hartog et al., 2013).

We, therefore, conclude that HRM research would profit from providing measures of HR practices bundles that can be (equally) used to question various key informants. In so doing, scholars will be better able to determine whether or not HR practices, as they are utilized in organizations, correspond to the way they are implemented by line managers and perceived by different groups of employees. Otherwise, any conclusions about potential mismatches between these three perspectives and comparisons within- and between groups of key informants are challenging to address without much noise in the data.

Challenge 4: Need to provide a measure of HR practices that allows for a (parallel) assessment of utilized, implemented, and perceived HR practices.

The challenges delineated above are undoubtedly not the only challenges. In our view, however, these challenges should be addressed first because even with the best methods at hand, it will be difficult to gather meaningful insights into the interaction patterns between the bundles of HR practices and their influence on organizations.

Summing up, before studying combinations of the HR practices, we must address the heart of the problem, namely the long-lasting issue of what practices to include in a bundle and how best to assess them in terms of measurement (Bainbridge et al., 2017; Boon et al., 2019).

Steps to Address these Challenges

To meet the challenges mentioned above, we need to provide a clear conceptualization of the construct, operationalize it in a way that agrees with its inherent conceptual and epistemic logic, and psychometrically assess our measure to clarify and examine its measurement properties before finally testing whether our instrument (and the concept as such) can predict organizational outcomes. Table 2 provides an overview of the four challenges and delineates the way we strive to address them in this dissertation.

We develop a theoretically derived definition of competitive HR practices based on previous research in the field of social interdependence and competition research and distinguish our conceptual bundle of competitive HR practices from the most prominent bundles of high-performance, high-commitment, and high-control HR practices to address the first challenge of a lack of conceptual clarity within and between the bundles (Challenge 1).

We further elaborate on our concept of competitive HR practices, by presenting an epistemic rationale on the nature of the HR bundles constructs in general and on the competitive HR practices bundle in particular. Here we argue and theorize on why competitive HR practices are a construct that is characterized by a formative-formative logic. We then explore how companies use HR practices to content validate and extend

the identified HR practices with the help of HR scholars to get a more comprehensive picture of the field. This also ensures a strong connection between the conceptual definition of our competitive bundle and the HR practices to be included in it (Challenge 2).

Furthermore, we examine and establish the psychometric qualities of our measure of competitive HR practices by conducting multiple studies to ensure its validity and test the proposed impact of competitive HR practices on employee outcomes. Here, we adopt the items to fit the perspective of the employees to provide conclusive evidence on whether the measure of competitive HR practices developed in this dissertation can predict employee outcomes—particularly employees' knowledge hiding behavior (Challenge 3).

We also aim at ensuring that our measure of competitive HR practices is structured and formulated in a way that can be applied to various levels within the organization. We do so by formulating items based on our list of competitive HR practices that are easily adaptable to the utilized, implemented, and perceived HR practices (Challenge 4).

Table 2. Overview of the HR Challenges and Steps to Address them in the Dissertation

Challenge	Steps	Chapter
Challenge 1: Need to establish concept clarity and explicate which HR practices to include in a specific bundle and on what conceptual grounds	- Provide a definition and conceptualization of competitive HR practices - Conceptually distinguish the construct of competitive HR practices from other HR practices bundles based on the coherent logic inherent to this bundle	Chapter 3
Challenge 2: Need to establish a coherent theoretical logic that facilitates the connection and operationalization of the individual HR practices into specific bundles	- Address the nature of the competitive HR practices construct (e.g., additive index vs. higher-order construct) theoretically - Establish a coherent set of HR practices to be combined into a competitive HR bundle - Establish a strong connection between the theoretical construct and the generated list of competitive HR practices	Chapter 4 & Chapter 5
Challenge 3: Need to establish the psychometric properties of the measures used to assess the specific HR practices bundle	- Empirically address the nature of the competitive HR practices construct - Establish the psychometric properties of the competitive HR practices measure - Validate and test the measure of the specific bundle of HR practices to establish a psychometrically elaborated measurement instrument	Chapter 5 & Chapter 6
Challenge 4: Need to provide a measure of HR practices that allows for a (parallel) assessment of utilized, implemented, and perceived HR practices	- Provide a measure that can be equally (without much modification) adopted to various levels and key informants (utilized, implemented, and perceived) to make the comparison between levels more reliable	Chapter 5 & Chapter 6

CHAPTER 3: CONCEPTUALIZING THE CONSTRUCT OF COMPETITIVE HR PRACTICES AND ITS THEORETICAL IMPACT[3]

As highlighted in the introduction, there is no such bundle or conceptualization of competitive HR practice available in current HRM research. Given this dearth, the primary goal of this Chapter is to provide a conceptualization and a definition of competitive HR practices. We do so by building on previous insights from competition research, in particular on the idea of social interdependence (Deutsch, 1949), and social comparison literature (e.g., Garcia, Tor, & Schiff, 2013; D. Johnson, Johnson, & Roseth, 2012). We then provide a theoretical framework that links competitive HR practices with social comparison processes to explain the impact of competitive HR practices on employee work outcomes.

This chapter unfolds as follows: In the next section, we summarize the dominant approaches to bundle HR practices, highlight existing challenges and, accordingly, develop an ideal-type conceptualization of competitive HR systems. We then explicate the potential impact of competitive HR practices through the lenses of upward social comparison processes and emotions they evoke. Here we link research on social comparison with research on workplace uncertainty to explain the interplay between competitive HR practices and their affective and behavioral employee outcomes at work.

We also incorporate insights from current emotion research on the "dual nature of envy" to explain when envy may cause positive employee behavior. Overall, our framework unravels why competitive HR practices sometimes have an ugly "dark side" and under which conditions the "not so bad side" or even a "good" side of competitive HR practices emerge. We blend these so far independently coexisting conceptual and empirical insights into comparison processes and uncertainty at work. We combine these

[3] This chapter is based on an article by Sapegina, A., & Weibel, A. (2017). The Good, the Not So Bad, and the Ugly of Competitive Human Resource Practices: A Multidisciplinary Conceptual Framework. Group & Organization Management, 42(5), 707-747. This article has been awarded 2017 Best Conceptual Article and Outstanding Article Award of the Group & Organization Management Journal.

so far largely separate research streams with one another to elaborate on a set of propositions that we finally merge into an overall theoretical framework.

An Overview of Human Resource Systems: Dominant Approaches

Extensive evidence demonstrates that the strategic combination of HR practices into bundles rather than single HR practices significantly contributes to positive organizational and employee outcomes (e.g., Combs et al., 2006b; Jiang, Lepak, Hu, et al., 2012; Kehoe & Wright, 2013). Bundles of HR practices, combined based on a complementary conceptual logic, are also referred to as HR systems. It has been proposed that these systems lead to superior organizational performance through their effect on employee motivation to contribute to organizational goals as well as through their impact on the coordination and matching of employees' abilities to do so (e.g., Appelbaum et al., 2000; Boxall & Macky, 2009).

The question, which specific compositions of HR practices are beneficial to organizations, has since become an active research topic. As a result, various HR combinations have been introduced to the field (e.g., Lepak et al., 2006; Marchington & Zagelmeyer, 2005; Thompson, 2011). However, the first groundbreaking distinction between control and commitment HR bundles remains an inherent and dominant feature, even of more recent conceptualizations of HR systems (e.g., Lepak et al., 2006; Mossholder, Richardson, & Settoon, 2011; Verburg, Den Hartog, & Koopman, 2007). Control and commitment HR systems represent two distinct approaches to aligning employee actions with organizational goals. A newer, and by far, the most commonly used research approach is the combination of HR practices into a so-called high-performance work system (e.g., Combs et al., 2006b; Huselid, 1995; Posthuma et al., 2013). In the following, we explicate the control, commitment, and high-performance HR system approaches as ideal types that build on different assumptions and use distinct means to influence employee effort to enable higher organizational performance (e.g., Lepak et al., 2006; Mossholder et al., 2011; Toh, Morgeson, & Campion, 2008). Table 3 provides an overview of the key building blocks that characterize each system and an exemplary list of individual HR practices

Control. The control HR configuration presumes that employees lack an inherent drive to work for the good of the organization. Left unattended, they are assumed to pursue their interests. The perceived lack of employee motivation is compensated by a logic of control and close monitoring as a prime means to govern employees (e.g., Arthur, 1994; Gooderham, Parry, & Ringdal, 2008; Walton, 1985). Employees are perceived as a resource "no different from any other variable economic factor" (Gooderham, Nordhaug, & Ringdal, 1999, p. 510) and are often even regarded as "a less reliable machine" with few skills and a clear lack of intrinsic motivation (e.g., Arthur, 1994; Boxall & Macky, 2009; Creed & Miles, 1996). Manufactured capital rather than employees is considered the main driver of value creation (e.g., Boxall & Macky, 2009; Walton, 1985). Therefore, the overall idea of the control HR configuration is that organizational objectives are best achieved and launched by HR practices that ensure employee compliance to tightly predefined rules and procedures. The relationship between employees and the organization is therefore characterized in purely transactional terms (e.g., Mossholder et al., 2011). In the control HR system, employees are viewed as low skilled and replaceable. They, thus, receive only limited amounts of training, are compensated individually by piece wages, and judged by their outputs based on quantifiable criteria (e.g., Arthur, 1994; Lepak & Snell, 1999; Walton, 1985), very much in line with the expression "a fair day's pay for a fair day's work". The control HR configuration has also been referred to as cost reduction (Arthur, 1994), compliance (Lepak & Snell, 1999, 2002), or calculative HR configuration (Gooderham et al., 1999).

Commitment. The ideal type of the commitment HR system, in contrast, assumes that the need for autonomy and meaningfulness is what drives employees. Employees are thus considered to be intrinsically motivated to contribute to organizational outcomes (e.g., Arthur, 1994; Boxall & Macky, 2009) and, as a more implicit assumption, are often seen as a unique source of capital that facilitates organizational improvement and learning processes (e.g., Lepak & Snell, 2002). In the commitment HR system, the achievement of organizational goals is ensured by strong psychological bonds between the organization and its employees.

Table 3. HR Systems Characteristics and Exemplary HR Practices

HR system characteristics	**Control**	**Commitment**	**High performance**	**Competition**
	(Arthur, 1992, 1994; Walton, 1985)	(Arthur, 1992, 1994; Walton, 1985)	(Huselid, 1995; Posthuma et al., 2013)	(our approach)
Dominant philosophy	**Disengaged Man**	**Engaged Man**	**Complex Man**	**Economic Man**
	"employees are to some extent rational, but inherently sluggish"	"employees are intrinsically motivated to contribute to meaningful goals"	"HR practices must fit individual predispositions and task requirements"	"employees are rational decision-makers with self-regarding preferences"
Dominant logic	**Control mode**	**Trust mode**	**Fit mode**	**Market mode**
Dominant capital	Manufactured capital	Social capital	Human capital	Human capital
Dominant relationship	Transactional contract	Relational contract	Hybrid contract	Transactional contract
Exemplary HR practices				
Recruitment, selection & promotion	From outside, focus on technical skills	From within, focus on social & technical skills	From within and from outside, focus on strategy requirements	From within and from outside, focus on an exclusive group of employees (e.g., stars)
Performance management & appraisal	**Individual Output** Objective & evaluative appraisal	**Shared Output** Developmental appraisal	**Mixed Output** Individual & shared appraisal Objective & evaluative appraisal Developmental appraisal	**Individual Output** Relative & evaluative appraisal
Compensation & benefits	**Variable** Piece wage Individual incentives	**Fixed** Salary Group incentives Gain sharing/profit sharing	**Mixed** Individual pay Group based pay Pay for performance Pay for skills/knowledge Gain sharing/stock ownership	**Exclusive** Relative individual performance Pay differentiation (horizontal/vertical) Relative incentives Disproportionally high rewards for stars
Training & development	**Low** Specific & technical skills	**High** General & shared skills	**High** Specific & multiple skills	**High** Exclusive & specific skills

Note: HR = human resource.

The common form of interaction is the relational contract with a strong organizational focus based on mutual and open-ended exchanges between the employee and the organization (Lepak & Snell, 1999; Mossholder et al., 2011). The dominant logic of this HR system is, therefore, one of reciprocal trust (e.g., Arthur, 1994; Boxall & Macky, 2009). Moreover, social capital understood as the pattern of linkages and relationships between employees as well as between employees and the organization (Nahapiet & Ghoshal, 1998), is seen as an important source of competitive advantage (e.g., Mossholder et al., 2011). In order to enable intrinsic motivation and trust, commitment HR systems generally rely on practices such as broadly defined tasks and extensive amounts of training. To reward employees for their loyalty and to signal them that "we are all in the same boat", commitment HR configurations use a combination of high levels of salary and group-oriented bonus schemes such as profit sharing and stock ownership (e.g., Arthur, 1994; Walton, 1985). HR commitment systems are sometimes also interchangeably labeled as high involvement (Boxall & Macky, 2009), or collaborative HR bundles (Gooderham et al., 1999; Gooderham et al., 2008).

High Performance. A third, and at present dominant approach, is the high-performance paradigm (e.g., Boxall & Macky, 2009; Posthuma et al., 2013; Toh et al., 2008). High-performance work systems is an umbrella term for bundles of HR practices targeted to create a source of sustained competitive advantage through a fit between HR practices and corporate strategy (Huselid, 1995). While some propose that a "core" set of practices are universally conducive to organizational performance, the majority of researchers argue for a fit perspective and hence for differentiation of such bundles between, but also within firms (e.g., Banks & Kepes, 2015; Huselid, 2011; Kepes & Delery, 2007). Depending on the strategy, a different managerial philosophy might also apply. The high-performance HR system rests upon the implicit assumption that employees are "complex men", that is, they can adapt and that their preferences and abilities have to be matched to tasks and context. Hybrid contracts, i.e., "contracts, which combine the open-ended time frame and mutual concern of relational agreements with the performance demands and renegotiation of transactional contracts" (Rousseau & Tijoriwala, 1998, p. 122), represent the most likely form of contract in high-performance

HR systems. Proponents of the high-performance work paradigm also clearly stress the importance of human capital. A critical key to success is thus the allocation of employees to the right tasks or the right divisions through rigorous selection and promotion practices as well as the development of employees through intensive and needs-targeted training. In this system, employees are motivated by a mixture of extrinsic and intrinsic rewards that need to fit specific organizational requirements. Merit pay, elaborate performance appraisal systems, and group-oriented payments are, hence, often seen to be part of a high-performance HR system (e.g., Huselid, 1995; Posthuma et al., 2013). However, it needs to be noted that the number of distinct practices identified as core components of high-performance work HR practices has recently dramatically increased (Paauwe & Boselie, 2005; Posthuma et al., 2013). In addition, these combinations not only differ very markedly but also seem to reflect differing core assumptions, with some scholars placing more value on intrinsic rather than extrinsic motivation. For instance, Pfeffer (1998) argues for low-status differences and fixed pay as characteristics of a high-performance HR system and hence clearly targets intrinsic motivation. Whereas, Huselid (1995) views pay contingent on individual performance as one of the core instruments to extrinsically motivate employees to achieve organizational goals.

Our condensed review of the control, commitment, and high-performance HR systems highlights that these three ideal types of HR systems are most extensively discussed in previous research. However, this overview of systems seems incomplete in the view of current debates in practice. Recent discussions in the business press indicate that a new system of HR practices, with a distinct "market logic" has populated the corporate world. Several companies seem to build their HR systems on the assumption that internal competition among employees is the best way to discipline and to inspire employees. For instance, companies like Yahoo explicitly rely on HR practices such as forced rankings (e.g., Jones et al., 2015; Moon et al., 2016). By contrast, other companies such as Microsoft and Ford have abandoned their rank-and-yank systems because they found them to undermine team collaboration and team spirit as well as to augment the risk of unethical behavior (e.g., Barry, Garr, & Liakopoulos, 2014; Jones et al., 2015; Pfeffer & Sutton, 2013). Such practices are not only widespread, but they

also seem to create unintended side effects. These potential side effects need to be understood to enable competitive HR practices to contribute to the individual, to the team, and to the organizational level outcomes. Hence, a new logic, that of "competitive HR practices" calls for further analysis. In the next section, we will, therefore, take an initial step to define competitive HR practices. We provide a definition and the first conceptualization of an ideal type of competitive HR system.

Widening the HR Systems Lens: Conceptualization of Competitive Human Resource Systems

Competition has been generally conceptualized in three ways: (1) as an individual disposition to compete, e.g., trait competitiveness and hyper-competition; (2) as a perception of the competitive character of the environment, and (3) as a de facto characteristic of the situation in which two or more people compete against each other for rare resources, also referred to as "situational competitiveness" or "structural competition" (e.g., Fletcher, Major, & Davis, 2008; Garcia et al., 2013; Murayama & Elliot, 2012). Competitive HR practices are purposefully designed to create structural competition. While they are likely to result in perceptions of a competitive workplace, it is the intent to inject structural competition that is of interest here. Furthermore, competition can be injected among individuals, groups, and organizations (Kilduff et al., 2010). However, competitive HR practices targeted towards individual-level competition seem to be the source of most problems and controversies in organizations, as indicated by current discussions in practice. We thus restrict our analysis to practices that inject internal competition among employees.

Competition among individuals is characterized by negative social interdependence and social comparison. Social interdependence exists when individual goal attainment is affected by the actions of others (Deutsch, 1949). In the case of negative interdependence, one actor can achieve a desired outcome only at the expense of the other actor. In other words, one only wins if the other fails (e.g., Deutsch, 1949; Stanne, Johnson, & Johnson, 1999). Furthermore, competition, by definition, implies evaluations of relative standing among competitors. Interindividual competition roots in

externally injected interpersonal comparisons, as "comparing one's progress with the progress of competitors to determine who is winning and who is losing" is essential to competition (D. Johnson et al., 2012, p. 1073). Consequently, competition always entails some form of ranking or comparison: Someone wins in comparison to other individuals who do not win. This forced comparison activates social comparison processes as individuals seek other individuals to compare themselves against (e.g., D. Johnson et al., 2012; Murayama & Elliot, 2012). Based on competition research, we define competitive HR practices as formal procedures that (1) are designed to establish negative interdependence among employees and which rest on (2) a relative comparison between employees.

Following a system approach, as an ideal type, the competitive HR system centers on the following set of assumptions: First, the dominant logic of competitive HR systems is the market mode. In this logic, internal competition serves as an efficient coordination mechanism that matches individuals and tasks through the invisible hand of the market. The internal competition also acts as a disciplining device because it creates incentives, which ensure that selfish individuals act in the interests of the organization. Second, employees in the competitive HR system are perceived as 'economic men' who view work as a disutility and act as highly rational decision-makers that use asymmetric information to cleverly maximize their utility (Davis, Schoorman, & Donaldson, 1997). Third, competitive HR systems rest on transactional contracts where employees trade their human capital to maximize their self-interest, most often in order to acquire tangible incentives (Camerer & Fehr, 2006).

These assumptions are reflected in a specific set of HR practices. At their very core, competitive HR practices stress relative standing and asymmetric rewards. Compensation practices, for instance, are based on relative individual performance and often come in the form of high horizontal and vertical pay dispersion to create attractive prizes for winning the competition and thereby to augment employee motivation (e.g., B. Becker & Huselid, 1992). Relative standing and negative interdependence are also evident in employee training and development practices. Exclusive talent management and a strong focus on the development of high-potential and 'star' employees are paired

with relative neglect of other employee groups (e.g., Gallardo-Gallardo, Dries, & González-Cruz, 2013; Meyers & van Woerkom, 2014). Finally, performance appraisal of employees is based on relative evaluations, most often on forced distribution rankings (e.g., Luffarelli et al., 2016; Moon et al., 2016).

As mentioned earlier, the goal of HR systems is to coordinate and motivate employees to contribute to organizational goals. We propose that many of the problems identified in the popular press are mainly related to the motivational prospects of competitive HR practices: Through the use of internal competition, organizations often hope to inspire employees to work harder to accomplish organizational goals. Instead, organizations encounter unwanted side effects such as envious employees who attempt to harm their peers (e.g., E. Kim & Glomb, 2014; Lam et al., 2011). In the next section, we propose a theoretical process model that explicates the theoretical mechanisms behind these unwanted side effects.

A Process Model of Competitive HR Practices

Our model aims to explain why competitive HR practices sometimes lead to inspiration, but sometimes also to envy, and why these practices differ so markedly in terms of their impact on individual-level behavioral and attitudinal outcomes. To do so, our model blends social comparison processes, emotion, and uncertainty research. First, we investigate the consequences of upward social comparison processes evoked through competitive HR practices. We focus on two comparison processes that occur as a result of competitive HR practices: a threat-related, contrastive comparison, on the one hand, and a challenge related, assimilative comparison, on the other hand. Second, we explain how perceptions of workplace uncertainty, i.e., the unpredictability of structural aspects of one's job, influence these types of comparison. Third, we specify the affective consequences of these two comparison processes. We propose that assimilative comparison leads to inspiration and, in consequence, positively affects employee psychological well-being, higher task, and contextual performance. Whereas, contrastive comparison leads to envy, which lowers employee psychological well-being. We then explore new findings, which argue that even if employees feel envy, their

behavioral reactions can still be positive. The decisive factor here is how individuals cope with envy. Overall, our model suggests that organizations relying on competitive HR systems can expect positive behavioral consequences if their employees are equipped to live with uncertainty, if competitive HR practices are implemented in a fair and non-path-dependent way and if employees can cope with envy. Our overall framework is visualized in Figure 1.

Theoretical Underpinnings

Competitive HR Practices and Upward Comparison Processes. Competitive HR practices rank employees with other peers to identify those employees that are the best or the most talented ones. Competitive HR practices thus, by design, make upward social comparison processes salient. They animate employees to watch out for the progress of their better-off peers to gauge their position and chances of success. The theory and research on social comparison processes is, therefore, a natural point of departure to understand the effects of such comparisons on the comparing employees. It needs to be noted, however, that much of the literature on social comparison processes gears towards understanding whom individuals choose to compare themselves against, a topic addressed in detail elsewhere (e.g., Buunk & Gibbons, 2007; Corcoran, Crusius, & Mussweiler, 2011; Greenberg et al., 2007; Suls, Martin, & Wheeler, 2002). Instead, we focus on the consequences of social comparison processes at the individual level.

Competitive HR practices entice upward comparisons. These comparisons can develop in two distinct ways: by contrasting against or by assimilating with the better-off peer. Employees engaging in a contrastive comparison tend to emphasize differences between the self and the comparison peer. Employees that engage in an assimilative comparison emphasize similarities shared with the comparison peer (e.g., Buunk & Gibbons, 2007; Corcoran et al., 2011; Crusius & Mussweiler, 2012; Mussweiler, Rüter, & Epstude, 2004). Also, and as opposed to contrastive comparison, assimilative comparison involves realizing that the differences between the comparison person and the self are malleable and can be narrowed (Mussweiler et al., 2004). Previous research on social comparison processes demonstrates that whether upward comparison proceeds in a

contrastive or assimilative manner has a significant albeit distinctive impact on an individual's self-view (Buunk & Gibbons, 2007; Mussweiler et al., 2004).

Contrastive upward comparison highlights employee's inferiority compared to the better-off peer. Contrastive comparison signals to the employees that they lack competencies needed to attain the level of that peer. In contrastive comparison, employees engage in thoughts like "We are so different, I will never be able to step into the peer's shoes". Contrastive comparisons are therefore highly threatening for individuals' self-conceptions (e.g. Mendes, Blascovich, Major, & Seery, 2001). Perceptions of differences inherent in contrastive comparison inhibit employees' confidence to ever become like the better-off peer in the future. Employees feeling threatened by and inferior to their better-ranked peer, thus view their own prospects for success in the organization in a less favorable way (Lockwood & Kunda, 1997). Consequently, leveling up to the achievements of the peer in the future will be perceived as an unlikely endeavor (e.g., Collins, 1996; Van der Zee, Buunk, Sanderman, Botke, & Van Den Bergh, 2000).

Assimilative upward comparisons, in contrast, provide employees with positive expectations towards achieving a similar outcome in the future. Perceiving the better-off peer as similar and dissimilarities as elastic signals to the employees that the outcomes and achievements of the colleague are attainable and in close proximity (e.g., Collins, 1996; Lockwood & Kunda, 1997). Expressed in thoughts like "We have so much in common, what she can do I can do as well", assimilative comparison ignites employees' conviction that they are on the right track and possess the right qualities, abilities, or skills to succeed. The better-off peers thus serve as positive role models (Lockwood & Kunda, 1997). Consequently, employees see the advantageous position of the better-off peer not as a threat but as a challenge that opens up new prospects and opportunities to self-improve. Assimilative comparison, therefore, strengthens employees' belief that they can achieve a similar position or a similar outcome in the future.

However, it remains unclear whether and under which conditions enforced competitive situations trigger assimilative rather than contrastive upward comparison. Less than a

handful of articles propose that competition, in general, is more likely to lead to contrastive comparisons. We are aware of only one empirical study, which shows that competitive contexts indeed evoke upward contrastive rather than upward assimilative comparison (Stapel & Koomen, 2005). This study needs to be interpreted with caution because of the recent retraction wave facing many of Stapel's experimental studies. On the contrary, we find it plausible that assimilation might be a likely outcome of competition as well. We agree with Mussweiler and colleagues (2001) that "the ways in which social comparisons shape our self-evaluations appear to be rather complex and multifaceted. Not only may social comparisons produce assimilation as well as contrast, which of both effects occurs also depends on a plethora of factors, of which some seem rather trivial at first sight" (p. 500). We propose that the reactions to forced upward comparison depend on how individuals perceive and evaluate the uncertainty inflicted upon them through competitive HR practices. If this uncertainty, which usually looms large for employees exposed to competitive HR practices, is perceived to be manageable, differences in relative standing between individuals are likely to be cognitively reduced and hence perceived to be surmountable. Therefore, we argue that an understanding of conditions related to uncertainty perceptions has a strong influence on whether employees contrast themselves against or assimilate with their better-off peers.

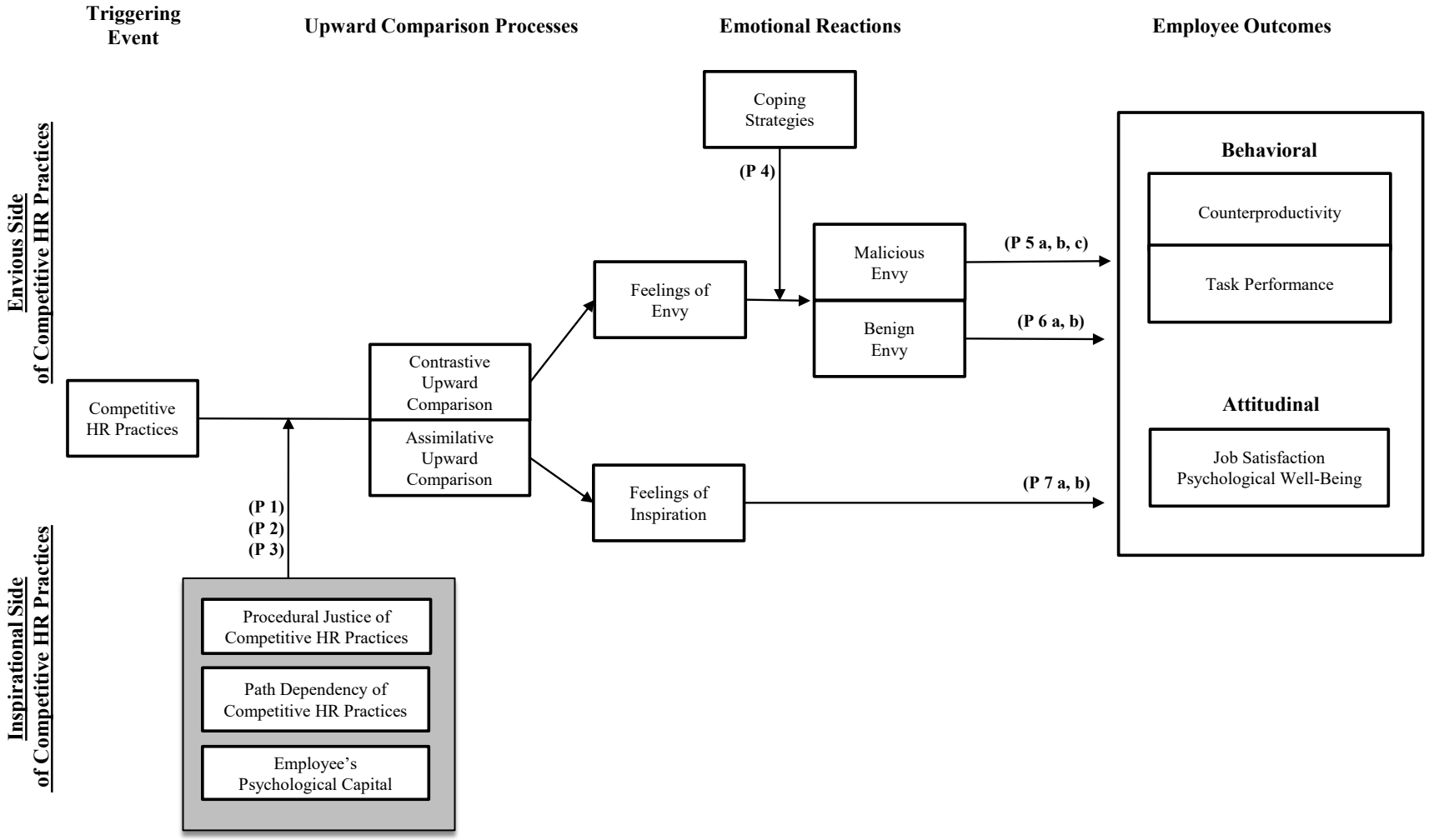

Figure 1. Process Model of Competitive HR Practice

Competitive HR Practices and Workplace Uncertainty. Competitive HR practices, by design, turn employees' attention to how they are performing in comparison to their peers. This interdependence of their ratings with those of their peers hampers employees' ability to predict their future progress. Employees cannot be sure that the information they perceive about the better faring peers is consistent with how organizational authorities perceive their peers. Competitive HR practices thus bring constant pressure about whether employees will make it to the top or will be dismissed (in extreme cases). Competitive HR practices compromise employees' ability to accurately analyze their work environments, for instance, to predict how employees' actions alter the situation in which their comparison target is a moving one. Consequently, perceptions of workplace uncertainty evolve, that is, the uncertainty that is marked by the unpredictability of structural aspects of one's job, such as job security and promotion opportunities (Bordia, Hobman, Jones, Gallois, & Callan, 2004). Such perceptions of uncertainty present a threatening experience to an individual's self-concept (e.g., Hogg, 2001). However, if conceived to be manageable, differences in relative standing should be perceived as surmountable, and competition will be more likely seen as a challenge and not as a threat. Employees are, therefore, more likely to expect that they will be able to achieve a ranking or an outcome similar to the better-off peer invoking assimilation with rather than contrast from the better-off peer.

Workplace uncertainty research is thus a good starting point to delineate how competitive HR practices impact perceptions of uncertainty. Two general approaches are suggested on how employees cope with uncertainty caused by competitive HR practices: (1) characteristics of the workplace, and (2) specific individual differences that reduce perceptions of uncertainty. We will discuss two characteristics of the workplace: Here we focus on how procedural fairness and the degree of path dependency of competitive HR practices impact employees' appraisal of and coping with uncertainty at work (e.g., Cerin & Barnett, 2006; Colquitt & Zipay, 2015; Lind & Van den Bos, 2002; Van den Bos & Lind, 2002). We then focus on individual differences and argue that employees differ in their ability to cope with workplace uncertainty depending on the level of employee's psychological capital (Avey,

Wernsing, & Luthans, 2008; Hodson & Sorrentino, 1999; Sorrentino, Ye, & Szeto, 2009).

Competitive HR Practices and Boundary Conditions

Procedural Justice of Competitive HR Practices and Upward Comparison. In situations marked by uncertainty, individuals are particularly prone to seek fairness-related information about various aspects of their environment. In particular, procedural justice has been proposed to alter individual perceptions of uncertainty in the workplace because it has been shown to assist employees in forming expectations towards how they will be treated in the future (e.g., Lind & Van den Bos, 2002; Proudfoot & Lind, 2015; Van den Bos, 2003; Van den Bos & Lind, 2002). Procedural justice reflects on how far procedures, here competitive HR practices, are consistent, accurate, ethical, free of bias across employees and over time, and responsive to employees' feedback, also referred to as "employee voice" (e.g., Folger, 1977; Greenberg & Folger, 1983; Thibaut & Walker, 1975).

Two potential ways in which fair procedures mellow uncertainty perceptions exist. First, fair procedures signal employees that they are still "in control" of the situation. This effect of fairness is discussed in the so-called "process control model" of justice (e.g., Blader & Tyler, 2015; Thibaut & Walker, 1975; Tyler & Blader, 2003). Perceptions of control hinge strongly on one characteristic of fair procedures: whether employees are granted voice. Fair procedures can guarantee voice by allowing employees to participate in the decision-making process. They also provide employees with the means to correct their results in the future. In the case of competitive HR practices, for instance, employees receive a chance to present their side of an argument after the ranking or even to develop a more refined ranking system together with the HR department. Thereby, employees influence future rankings or outcome distributions, directly or indirectly. Consequently, procedurally fair competitive HR practices will signal employees that, despite their current disadvantage, it is still possible to level up to the achievements of their advantaged peers in the future. If competitive HR practices rest on fair procedures,

employees will know that these practices are responsive to their input and are thus susceptible to change through their actions.

Secondly, fair procedures enable employees to cope with uncertainty. Being bias-free and consistent, they transfer important information about employees' status. Fair procedures signal employees that everyone has valuable competencies and is a respected member of the organization (e.g., Blader & Tyler, 2009; Tyler & Blader, 2003). This effect of fairness is also discussed in the group-value model of procedural justice (Blader & Tyler, 2015; Tyler & Lind, 1992). The main argument here is that fairly treated employees will form strong group bonds and a sense of a shared social identity (Blader & Tyler, 2009). Studies on the role of psychological closeness in social comparison indicate that feeling close to a better-off other facilitates positive reflections on employee's self-concept and, as a result, invokes assimilative rather than contrastive comparison (e.g., J. Brown, Novick, Lord, & Richards, 1992; Pelham & Wachsmuth, 1995). We, therefore, assume that strong bonds formed based on procedural justice will soften perceptions of relative standing and are likely to reduce the felt distance between the ranks. Employees will not consider the advantages of others as a threat to their standing and position. Instead, they will rather view better-off peers as equal contenders. The comparison process will more likely focus upon what is shared than on what is not shared and thus induce assimilative rather than contrastive comparison.

> **Proposition 1:** Procedurally fair competitive HR practices will shift the focus of upward comparison. Competitive HR practices that are perceived high (low) in procedural justice will make the assimilative (contrastive) upward social comparison more likely.

Path Dependency of Competitive HR Practices and Upward Comparison. In addition to perceived procedural justice, we propose that the path dependency of competitive HR practices affects employee's perceptions of workplace uncertainty. Depending on how competitive HR practices are implemented, they might create path dependencies in the sense that "losing one race" diminishes future chances for winning. For instance, path dependency is high if individuals selected as talents are not only showered with higher rewards, but also trajected on a pre-paved road to a more

prosperous future in the organization because such selection also lays the basis for training and promotion opportunities (e.g., Gallardo-Gallardo et al., 2013; Vriend, Jordan, & Janssen, 2016). Being rated as a high-performer or a "winner" makes further progress more likely (e.g., Gallardo-Gallardo et al., 2013; Jones et al., 2015). It opens doors to further resources as well as development and promotion programs, grants employees a higher status, and increases their chances to proceed in the organizational hierarchy. At the same time, "losers" will find it hard to return to the winning road. Exclusion from the high performer category will thus not only undermine employees' present outcomes, it will also diminish their chances for success in other areas within the organization. Failure to achieve the status of a high performer will thus become a threatening experience. In organizations with path-dependent competitive HR practices, employees not given the status of a high performer or a star will have few reasons to believe that they might attain a winning position in the future. Consequently, they will view the distance to the winner as very high because of the extreme differences between those termed as high performers and those that were not. According to findings from comparison research, such extreme differences will lead to contrasting rather than assimilation (Lam et al., 2011; Mussweiler et al., 2004).

In contrast, competitive HR practices implemented in a way to omit such path dependencies are more likely to evoke perceptions that any competitive event is a new opportunity for winning. For instance, recurrent award ceremonies with small or even non-tangible prizes will turn the spotlight on those characteristics and behaviors an organization cherishes and will signal to employees that everyone can potentially be a future winner of such awards or prizes. Competitive HR practices implemented to prevent path dependencies also omit evaluation biases, e.g., through training of referees to spot past record anchoring effects, and are thus more likely to signal employees that every new appraisal is a new opportunity to show their learning and efforts. Instead of a threat to employees' standing, such an implementation of competitive HR practices indicates that efforts to learn from the winner are likely to be rewarded in the future. In competitive HR practices low in path dependency, employees are more likely to view the better-off peers as role models and, therefore, to assimilate with rather than to contrast from them.

Proposition 2: Path dependent competitive HR practices will shift the focus of upward comparison. Competitive HR practices characterized by low path dependency (high path dependency) will make the assimilative (contrastive) upward comparison more likely.

Individual Differences in Psychological Capital and Upward Comparison. Individuals also vary in terms of their abilities to approach uncertainty. Positive psychology research suggests individual psychological capital as a valuable lens to understand how individuals perceive workplace uncertainty (e.g., Avey, Luthans, & Jensen, 2009; Avey et al., 2008). Psychological capital refers to an individual's positive psychological state of development that comprises four psychological resources: (1) self-efficacy, i.e., the individual's confidence to have the abilities and resources to achieve a specific goal; (2) optimism, i.e., positive expectations towards achieving this goal; (3) hope, i.e., the strive to accomplish a goal as well as to search for multiple alternatives on how to achieve it, and (4) resilience, i.e., the ability to bounce back after challenging and disruptive events (Avey et al., 2009; Luthans, Avolio, Avey, & Norman, 2007; Newman, Ucbasaran, Zhu, & Hirst, 2014).

Previous research indicates that it is the synergetic interplay of all four facets that empowers individuals to deal with perceptions of uncertainty at work in a systematic fashion (e.g., De Cuyper, De Witte, Vander Elst, & Handaja, 2010; Youssef-Morgan & Luthans, 2013). Individuals high in psychological capital recover faster from and are less discouraged by setbacks in the first place. They are open towards novel paths on their way to achieve desired outcomes (Avey et al., 2009; Luthans et al., 2007). Apart from strong confidence in their abilities and competences, individuals high in psychological capital tend to interpret adverse events through a temporary lens and to attribute their defeats to situational as well as external factors rather than to internal, personal causes (Avey et al., 2009; Newman et al., 2014).

Referring to these insights, we argue that psychological capital shifts the focus of employees' attention from contrasting to assimilation because it enables them to meet and to counteract workplace uncertainty. The employees' strong belief in their abilities and capacities will fuel the conviction that they possess the abilities needed. In addition,

due to their tendency to interpret misfortune as temporary and as unrelated to their person, even stretched goals are interpreted to be in reach (e.g., Luthans et al., 2007). Faced with failure, employees high in psychological capital will also recover faster from adverse events (e.g., Avey et al., 2009; Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011) and strive for suitable alternatives to pertain the effort and the competencies needed to achieve a similar future outcome as the peer (e.g., Luthans et al., 2007). In sum, employees confident about their competences and high in psychological capital have a positive mindset that they possess the characteristics needed to achieve a similar outcome. They will, therefore, perceive an outperforming colleague as similar and therefore assimilate with the better-off peer.

By contrast, individuals low in psychological capital possess an insecure self-concept because of their low confidence and a negative self-view. Due to their low level of optimism, they tend to attribute outside events to causes that lie within their person and thus are more likely to trace their failure back to a lack of personal qualities (e.g., Luthans et al., 2007). The success of another peer will serve as proof for being different from and inferior to that peer and thus inhibit employees' expectations from achieving similar outcomes in the future. The level of psychological capital will thus determine whether competitive HR practices will lead to an assimilative or a contrastive comparison.

> **Proposition 3:** Employees' psychological capital will shift the focus of upward comparison. Employees that have a high level (low level) of psychological capital will tend to assimilate (to contrast) during the upward comparison when exposed to competitive HR practices.

Competitive HR Practices and Employee Outcomes

In the previous section, we discussed the role of workplace uncertainty in the shift between contrastive and assimilative comparison processes. We now turn our attention to the consequences of assimilative and contrastive comparison on employees. We first identify the emotional reactions brought about by contrastive and assimilative comparison and then discuss how these emotions impact on individual behavior and

attitudes. We base our analysis on the framework of social comparison emotions proposed by Smith (2000). Smith (2000) theorized that upward and downward comparisons “produce a mixture of feelings linked to a complex set of contributing factors” (p. 192). Contrastive comparison leads to feelings of envy, shame, and/or resentment; assimilative comparison to inspiration, admiration and/or optimism (Algoe & Haidt, 2009; Smith, 2000; Vecchio, 2000, 2005). These emotions differ from each other regarding how much attention is paid to the self and the other. Shame and its positive cousin optimism are characterized by a focus on the self; resentment, and admiration by a focus on the peer. Envy and inspiration, however, are marked by a dual focus in which attention shifts back and forth between the self and the comparison peer (Smith, 2000).

In our process model, we concentrate on envy and inspiration. We do so for two reasons. First, competitive HR practices not only initiate an upward comparison; they also institutionalize such comparison in the organization across events and time. Hence, employees are "socialized" to compare their outcomes, their standing and ultimately their self to view what "the self lacks and what the other possess” (Smith, 2000, p. 183) or to gauge the ”positive implications for the self and the admirable attributes of the other person” (Smith, 2000, p. 186). Such a recurring focus on comparing is likely to stress emotions with a dual focus, as the alternating view on others and on oneself becomes normality. Second, envy seems to be an emotion that is particularly salient in competitive contexts. Previous research from the field of economics and organizational behavior provides multiple indications that competitive HR practices (e.g., tournament structures, relative rewards, and relative feedback) are prone to induce envy (e.g., Dunn & Schweitzer, 2004; Eisenkopf & Teyssier, 2013; Grund & Sliwka, 2005; Salovey & Rodin, 1984; Schaubroeck & Lam, 2004; Vecchio, 2000, 2005). In addition, the focus on inspiration seems warranted because inspiration represents an antidote to envy (e.g., Smith, 2000). Also, research on competitive tournaments and rewards often assumes (at least implicitly) that internal competition has an inspirational side because it motivates employees to do their best and to invest maximum effort (e.g., B. Connelly, Tihanyi, Crook, & Gangloff, 2014; Lazear & Rosen, 1981; Orrison et al., 2004; van Dijk et al., 2001).

The Envious Side of Competitive HR Practices. Competitive HR practices induce contrastive comparison. Contrastive comparison represents a threat to the employee's self-concept. It carries the implicit message that approaching the level of the better-ranked peers in the future is hardly to be expected. As detailed above, the immediate emotional consequence of contrastive comparison is, therefore, envy (Smith, 2000; Smith & Kim, 2007). Envy is generally defined as an "unpleasant, often painful emotion […] produced by an awareness of another person or group of persons who enjoy a desired possession" (Smith & Kim, 2007, p. 47). Envy has been conceptualized both as a dispositional and as an episodic construct (e.g., Cohen-Charash, 2009; Smith & Kim, 2007). Whereas dispositional envy might pronounce the effects of injected competition, competitive HR practices mainly evoke episodic envy as a reaction to the forced comparison. There is some, mainly experimental evidence, which demonstrates that competitive rewards and relative feedback provoke feelings of envy (e.g., Dunn & Schweitzer, 2004; Salovey & Rodin, 1984; Schaubroeck & Lam, 2004; Vecchio, 2000, 2005).

Recent research on envy found envy to be a double-edged sword as it produces two distinct motivational and action tendencies. Some scholars, therefore, propose to distinguish between malicious and benign envy (Van de Ven et al., 2009; Van de Ven, Zeelenberg, & Pieters, 2011; Van de Ven et al., 2012). Malicious envy is a strong, frustrating emotion characterized by hostility towards the person who possesses the desired outcomes (e.g., Scherer, 2005; Van de Ven et al., 2012). It is thus proposed to increase employees' motivation to level down the better-off peer (Van de Ven et al., 2009, 2012). Benign envy, on the other hand, is directed towards the object of envy and not towards the envied person (Crusius & Lange, 2014; Van de Ven et al., 2009, 2012). Benign envy, while still painful, is proposed to lack hostility. Instead of putting the better-off peer down, benign envy instills employees with the motivation to reach out for the desired outcome (e.g., Smith & Kim, 2007; Van de Ven et al., 2009).[4]

[4] Currently, heated debates are led on whether these two types of malicious versus benign envy should be distinguished. These discussions abound both on the chosen terminology, i.e., whether painful feelings like

The distinction between benign and malicious envy centers on the idea that the painful emotion of envy becomes toxic when the attention of the employee is oriented towards "the peer" rather than the object of envy. Several factors have been investigated in research to impact on whether benign or malicious evokes. However, it needs to be noted that some of the factors discussed in this literature so far confound with insights from the social comparison research (Smith, 2000; vs. Van de Ven et al., 2009; Van de Ven et al., 2012). We thus still need to understand why and when individuals focus on the envied person, and when on to the desired object as one key characteristic distinguishing malicious and benign envy.

Here we offer a new explanation and propose that the answer lies in a better understanding of how individuals cope and handle envy in a way that reduces hostility and prevents a focus on the person of the peer. Individuals who are able to understand and contain envy will be in a better position to find a constructive way to deal with this painful emotion (Smith & Kim, 2007; Tangney & Salovey, 2010). For example, Salovey and Rodin (1988) identified two broad strategies to cope with envy: self-reliance and selective ignoring. Self-reliance involves an active reappraisal of the situation and assists individuals to exercise control over envy. Selective ignoring aims to reduce the significance of the envious encounter (Salovey & Rodin, 1988). Another research report by Vecchio (1997) indicates that in perceptions of employees, coping strategies can be distinguished into various adaptive and maladaptive strategies. Extending the work by Vecchio (1997), Boone (2005) demonstrated that adaptive coping strategies help employees to regulate their negative emotions of envy even in a way that they might feel empathy towards the envied others (as cited in Tangney & Salovey, 2010). In contrast, the maladaptive coping strategies, however, were associated with many negative feelings, among them hostility towards the envied person (as cited in Tangney

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envy should be termed as "benign" (Cohen-Charash & Larson, 2017a, 2017b; vs. Van de Ven, 2016), as well as on the explanatory factors of these differing outcomes of envy (e.g., Crusius & Lange, 2017; Tai, Narayanan, & McAllister, 2012; Van de Ven et al., 2009, 2012). We adopt a pragmatic stance here and stick with the terms benign and malicious envy, as there is enough evidence that envy can indeed evoke positive consequences (Van de Ven et al., 2009, 2011, 2012).

& Salovey, 2010). Although preliminary, these studies indicate that coping strategies might function as a possible explanatory factor for the transmutation of the painful emotion of envy into constructive, benign envy or into its destructive, malicious counterpart.

> **Proposition 4**: Employees coping strategies will moderate the shift between benign and malicious envy. Employees with adaptive coping strategies (maladaptive coping strategies) are more likely to experience benign envy (malicious envy) following contrastive upward comparisons.

Outcomes of Malicious Envy. Malicious envy is an emotion characterized by ill will and hostility towards the subject of envy. It should thus fuel action tendencies to undermine and to harm the envied peer. Marked by frustration and hostility, malicious envy directs employees' affective and cognitive resources towards strategies to undermine the advantaged peer and hence often cannot muster additional energy and resources into self-improvement (e.g., Van de Ven, 2016; Van de Ven et al., 2009, 2012). Indeed, empirical studies have shown malicious envy to be strongly linked to peer-directed counterproductive work behaviors, e.g., harming, social loafing, and acts of sabotage directed towards the better-off peers (e.g., Cohen-Charash, 2009; Duffy & Shaw, 2000; Moran & Schweitzer, 2008). We, therefore, propose that feelings of malicious envy will strengthen peer-directed counterproductive work behaviors. In addition, because employees will direct most of their efforts and time towards undermining that peer, employees' task performance is likely to diminish. Furthermore, envy is a negative and painful emotion. Negative emotions have been repeatedly and extensively shown to detrimentally impact employees' psychological well-being and job satisfaction (e.g., Ashkanasy & Ashton-James, 2005; Connolly & Viswesvaran, 2000).

> **Proposition 5:** Competitive HR practices that lead to malicious envy will have a uniformly negative impact on employees' attitudinal and behavioral outcomes.
>
> a) Malicious envy will positively impact peer-directed counterproductive work behaviors.
>
> b) Malicious envy will negatively impact task performance.

c) Malicious envy will harm employee attitudes, such as job satisfaction or psychological well-being.

Outcomes of Benign Envy. In contrast to malicious envy, feelings of benign envy are characterized by a focus on the envy-object. The focus on the envy-object draws employees' attention to what is needed to succeed in obtaining this envied position or possession, instead of what is needed to prevent the better-off peers from succeeding (e.g., Van de Ven et al., 2009, 2012). Hence, benign envy canalizes employees' affective and cognitive resources towards self-improvement. Employees that feel benign envy will thus be more likely to invest their energy and activities into improving their prospects to achieve the desired outcome in the future, for example, by putting in additional effort or by polishing their skills and abilities. This, in turn, will increase the employees' effort to tackle their work, to improve their skills or to devote more attention towards fulfilling their tasks (e.g., Crusius & Lange, 2014; Hill, DelPriore, & Vaughan, 2011; Van de Ven et al., 2012). Instead of putting their energies into undermining others, employees feeling benign envy will be more likely to increase their level of task performance. However, benign envy still feels painful at first (Tai et al., 2012). Therefore, it is possible that analogous to studies on the role of negative affect in organizations (e.g., Weiss & Beal, 2005; Weiss & Cropanzano, 1996), the painful side of benign envy will have negative consequences on employee attitudes such as job satisfaction or psychological well-being (e.g., Ashkanasy & Ashton-James, 2005; Connolly & Viswesvaran, 2000), at least in the short run.

Proposition 6: Competitive HR practices that lead to benign envy will have a distinct impact on employees' attitudes and behaviors.

a) Benign envy will positively impact employee task performance.
b) Benign envy will negatively impact employee job satisfaction and psychological well-being.

The Inspirational Side of Competitive HR Practices. Under certain conditions, competitive HR practices lead to assimilative comparison processes. Assimilation, as mentioned, leads to a focus on perceived similarities with the better-off peer and thus

presents a challenge rather than a threat to an employee's self-concept. Such a comparison will boost self-confidence and strengthen the employees' belief that they can live up to the level of the better-off peer. Assimilative comparisons, thus, provide employees with excitement about the achievements of the better-off peer and positive prospects for themselves. The extraordinary achievements of the peer will promote a positive mindset towards future success chances and raise awareness for new opportunities in relation to one's progress (e.g., Smith, 2000; Thrash & Elliot, 2003). They will provide employees with a sense of positive anticipation that they are also able to fit the outcome or the level of the better-off peer because they possess the qualities and knowledge needed to do so. Competitive HR practices processed in an assimilative way are thus assumed to evoke inspiration (e.g., Buunk, Zurriaga, Gonzalez-Roma, & Subirats, 2003; Smith, 2000). Inspiration is conceptualized as a psychological state consisting of three connected and interrelated components: evocation, transcendence, and approach motivation (Thrash & Elliot, 2003, 2004). Evocation reflects the unintentional emergence of inspiration. Accordingly, inspiration arises because of causes not related to oneself as a person, for instance, by extraordinary ideas or the achievements of others. Once evoked, transcendence emerges, i.e., the individual's increased awareness for new hitherto unprecedented chances and opportunities (Thrash & Elliot, 2003, 2004). Awareness of new opportunities then activates the individual's approach motivation; it sparks incitement "to bring one's new ideas or visions into fruition" (Thrash, Moldovan, Oleynick, & Maruskin, 2014, p. 497).

Outcomes of Inspiration. Inspiration is seen to act as a launching engine that drives individuals to converge their actions and competences in order to reach the level of competence or performance of their inspiration object, in our case, the peer (Thrash & Elliot, 2003, 2004). Feelings of inspiration will activate employees' motivation to improve themselves, e.g., to increase their effort, energy, or competencies in order to level up to the achievements of the peer. Inspiration represents a positive motivational state providing employees with energy to engage more deeply with their tasks and to experience a sense of cognitive and emotional devotion towards accomplishing it (Thrash & Elliot, 2003, 2004). Inspiration will thus increase both task and contextual performance. Additionally, and in contrast to benign envy, inspiration is a solely positive

emotion. Burgeoning research on positive emotions demonstrates that positive emotions benefit employees' attitudes (e.g., Ashkanasy & Ashton-James, 2005; Bono, Glomb, Shen, Kim, & Koch, 2013; Lyubomirsky, King, & Diener, 2005). For example, a comprehensive meta-analysis by Lyubomirksy and colleagues (2005) provides substantive evidence that positive emotions evoke favorable employee attitudes such as job satisfaction and psychological well-being (Lyubomirsky et al., 2005).

> **Proposition 7:** Competitive HR practices that lead to inspiration will have a uniformly beneficial impact on employees' attitudes and behaviors.
>
> a) Inspiration will positively impact task and contextual performance.
> b) Inspiration will positively impact employee job satisfaction and psychological well-being.

Specific Discussion

Summary

Companies often use certain HR practices such as forced rankings to inspire competition among employees. Although highly contested in practice for their potential side effects, they so far remain largely unexamined in strategic HRM research. In this Chapter, we addressed this issue by defining "competitive" HR practices and by providing an initial conceptualization of an ideal type of competitive HR system. We also highlighted how this system extends the prevalent approaches of control, commitment, and high-performance HR systems. Similar to the control HR system, the competitive HR configuration follows a rather pessimistic view on employees' work effort. However, similar to the high-performance HR system, employees in the competitive HR system are not so much regarded as "unreliable machines", but as highly skilled experts and thus as a valuable (intellectual) resource to build organizational value. The competitive HR system, however, differs significantly from these systems in its dominant logic as it builds on the idea of the "invisible hand of the market". Internal competition is assumed to be an effective device to ensure that selfish and rational employees are motivated to contribute to organizational goals. This internal competition is mimicked through

relative assessment practices and the distribution of asymmetric rewards. Consequently, the competitive HR system is also likely to be more cost-efficient at motivating self-interested employees than the control system approach because it does not require close supervision or extensive regulation.

We have also developed a model that theorizes under which conditions competitive HR practices produce organizationally wanted and unwanted effects on the individual level. We incorporated so far independently coexisting insights from research on social comparison processes, workplace uncertainty, and emotions to explain when competitive HR practices evoke contrastive comparison and envy and when assimilative comparison and inspiration evolve. In doing so, our framework also contributes to a better understanding of the controversial nature of competitive HR practices. More specifically, we argued that procedurally fair and low-stakes competition, as well as a high level of employees' psychological capital, lead to assimilative comparisons and inspiration. Feeling inspired by well-faring colleagues, in consequence, increases employees' task and contextual performance and boosts employee well-being. However, we also argue that, as a default, competitive HR practices are more likely to evoke contrastive comparison and thereby lead to envy. Envy is a strong and painful emotion that reduces employee job satisfaction and psychological well-being. However, envy might emerge either in a benign or malicious form. Benign envy focuses on the object of envy. It fuels employees' motivation to better their position and hence should lead to higher task performance. Malicious envy, however, focuses on the envied person and hence is more likely to steer employee effort into peer-directed counterproductive behaviors that leave considerably fewer resources for the improvement of task performance.

Limitations and Avenues for Future Research

HR Systems. In this part of the dissertation, we provided an initial conceptualization of a competitive HR system. However, at present, we have little empirical research on which practices companies actually use to inject competition in the workplace and how these practices are bundled in the field. Given this, an empirically derived taxonomy of

competitive HR practices seems to be the most logical next step for future research (Boxall, Ang, & Bartram, 2011). First, HR scholars could strive to identify the breadth and the variety of competitive HR practices used in companies through more explorative approaches such as focus-group discussions and interviews with experts. These insights can then be used to examine whether organizations differ in how competitive HR practices are combined through configurational analytical approaches (e.g., Short, Payne, & Ketchen, 2008), for example, cluster analysis as a promising, yet so far rarely applied technique in strategic HR research (e.g., Arthur, 1992; Verburg et al., 2007).

It also needs to be noted that how intended competitive HR systems unfold their effects might differ remarkably from how they how employees understand and perceive the logic beyond such a system (e.g., L. H. Nishii, D. P. Lepak, & B. Schneider, 2008; Van de Voorde & Beijer, 2015). HR systems, in general, provide employees with cues about what is valued and expected by organizational authorities (Kehoe & Wright, 2013; Piening et al., 2013). HR systems might fail in their intended purpose because they transfer conflicting messages to the employees. For instance, an HR system might signal employees that their organization cherishes long-term relationships, appreciates their effort, and genuinely cares about employee's well-being. However, employees in a specific organization could still read this signal differently, e.g., that their employer stresses organizational goals at the expense of employee well-being (Den Hartog et al., 2013; Van de Voorde & Beijer, 2015). Competitive HR systems, for instance, could send mixed messages and thus might have a distinct impact on employees' attributions. As already spelled out, competitive HR practices rely on strong market logic, and hence employees might perceive them as exploitative. On the other hand, competitive HR practices also provide extensive rewards and investments into the development of human capital and, as such, might signal concern for and appreciation of employees. In this light, we encourage researchers to extend our more "intended" view of competitive HR systems to pursue an attributional stand and to measure how individuals actually perceive the intent of competitive HR systems and how such attributions are influenced.

When it comes to the coordination function of HR systems, the inherent market mechanism of competitive HR practices aims at providing an efficient allocation of

talent willing to win the prize in the area where their talent meets best. While market mechanisms work well for resource allocation, they are comparably ill-suited to promote cooperation between individuals or units, particularly when no price tag can be applied to such cooperative efforts. Some magazine articles, thus, argue that cooperation would only be inspired if rankings were also dependent on how employees support other employees or the organization. As we explained in our model, such a cooperative effort (e.g., higher levels of contextual performance) is only likely to emerge if internal competition will not promote malicious envy (at the very least). It remains to be studied in the field whether benign envy, in combination with incentives for cooperation, could succeed and entice cooperation in a competitive context.

Process Model. As is the case with every model, we had to focus on a few and specific variables to explain how competitive HR practices influence employee emotions and work relevant attitudes and behaviors. We thereby provide a static view of a rather dynamic association process. First, the effect of competitive HR practices on comparison processes and employee emotions may not be linear. Competitive HR practices might be designed in a way that varies in competitive intensity, i.e., the degree of negative interdependence they establish. Highly intense competitive HR practices are designed to promote, reward, or award employees according to a winner-take-all approach with a small and exclusive group of winners that are rewarded with disproportionally high financial rewards. They might even introduce punishment mechanisms for those who lost, for example, by dismissing low performers as this was the case in infamous General Electric forced distribution rankings, also nicknamed the "mortality curve" (Moon et al., 2016). In contrast, competitive HR practices low in intensity are characterized by smaller or even intangible rewards or prizes provided to employees with outstanding performance and achievements. A particularly intriguing issue related to this, concerns whether there exists an optimal level of competitive intensity, which ensures that competitive HR practices induce a healthy competition, i.e., a competition that boosts employees' efforts without a toxic component to it. It seems plausible that the association between the intensity of competitive HR practices and employee outcomes might take a non-monotonic and even inverted curvilinear shape. For example, with growing intensity, competitive HR practices might first benefit

employee outcomes until they reach a critical tipping point at which their effect turns negative.

Second, personal history and ripening processes might alter the dynamics of the proposed associations. It seems plausible that employee experiences with the competitive HR system are likely to have an impact, a point that should be examined in future research. An employee that has repeatedly won might be more likely to attribute her present "misfortune" to aspects of the environment rather than to a lack of personal qualities and thus will feel inspired rather than envious through competition. In contrast, employees with predominantly negative experiences with such systems might seek explanations for "losing" in the lack of personal abilities and hence contrast from their better-off peers in the long run. Furthermore, and potentially even more critical for sustainable implementation, a competitive HR system approach will also influence the composition of the organizational workforce. Competitive HR systems are likely to attract competitive- and possibly envy-oriented individuals (e.g., Kristof-Brown, Zimmerman, & Johnson, 2005; Kristof, 1996) with the consequence that assimilation and thereby inspiration becomes less likely.

Third, from a more cross-level perspective, competitive HR practices are embedded in a broader organizational context that will act as a strong influence as well. For example, organizational culture is likely to exert a substantial effect on how employees perceive competition. Enron has been an oft-cited example that illustrates how internal competition can run havoc in an organization. Enron's culture was one of a cult of superstars, of greed and of the (implicit) belief that envy creates positive outcomes for the company (Sims & Brinkmann, 2003). It is also possible that a strong corporate culture that creates a salient social identity might turn the dice from negative to positive (Margolis & Dust, 2019) because it pronounces fair chances to win and signals that even superstars cannot be successful without their team. In addition – as with any HR system – competitive HR systems need to fit the organizational strategy. We argue that such a system is better geared towards a strategy that rests on cost-effectiveness and standardization as well as a strategy in which little cooperation is needed. For instance, we proposed that procedural fairness is an important driver for a positive effect of

internal competition; yet, procedural fairness is contingent on whether rankings or ratings are free of bias, and are accurate or not (e.g., Colquitt & Rodell, 2015). These criteria are much better met if performance can be established in an objective way and is based on only a small range of criteria. The more subjective the performance appraisal and the more complex the job, the less likely rankings and ratings will be seen as fair. Consequently, competition possibly creates more positive outcomes if performance is easily measurable and attributable (Weibel, Rost, & Osterloh, 2010). Also, interpersonal competition, by design, creates incentives to outperform other team members, which might undermine team performance (He, Baruch, & Lin, 2014). Interpersonal competition is, therefore, better geared towards independent work rather than teamwork (Deutsch, 2006). Hence, competitive HR practices might be better suited for (less complex) sales and production jobs rather than for tasks that require intensive knowledge sharing and collaborative creation effort, as in case of research and development teams.

Practical Implications

Our model implies that competitive HR practices might have both a bright and a dark side. First and more on a general level, if – for some reason – companies prefer to use competitive HR practices, they should be aware that, left unattended, competition might show its distinct downside. Managers and supervisors need to exercise caution in how they structure and implement competitive HR practices. Second, competitive HR practices that provide multiple, recurring, and equitable winning chances are better positioned to spark a more enjoyable form of competition. Companies, therefore, seem to gain by keeping competition less pre-paved, free of extreme favoritism for employees with the status of stars and evenhanded. One way to do so is to train supervisors to conduct ratings and rankings in a fair-minded way with as little biases as possible. Recent meta-analyses indicate that such training is effective in augmenting the accuracy of ratings, particularly in the case of relative comparisons (e.g., Roch, Woehr, Mishra, & Kieszczynska, 2012). However, little is known about the extent to which rater training persists over time. Regular refresher training may thus be warranted. Third, employees should also be trained and coached in order to develop a stronger psychological capital

(e.g., Luthans, Avey, & Patera, 2008; Meyers, van Woerkom, & Bakker, 2013). Psychological capital training seems a particularly useful complement to reskilling initiatives targeted at the "losers" of competition. Finally, practitioners have to be conscious about the selection process, since misalignment of the person-environment fit can lead to undesirable consequences for cooperation-oriented individuals (e.g., Fletcher et al., 2008; Jones et al., 2015).

CHAPTER 4: FROM DEFINITION TO OPERATIONALIZATION – THE EPISTEMIC NATURE OF COMPETITIVE HR PRACTICES BUNDLE

Having conceptualized the construct, the next step is to establish its epistemic nature. Establishing the epistemic nature of the construct is vital to ensure a strong alignment between the construct and its operationalization (e.g., MacKenzie et al., 2011; Podsakoff, Podsakoff, & Shen, 2006). According to MacKenzie et al. (2011), "Once the construct has been carefully defined, it is important to step back and evaluate whether there are multiple sub-dimensions of the focal construct and how they relate to the focal construct and to each other" (p. 300). This step is vital to ensure that there is no disconnect between the epistemic nature of a construct and its measurement specification, as such a disconnect might spur or bias the relationships between the respective bundles of HR practices and the outcome variables in a way that seriously jeopardizes any verifiable conclusions about their effects (for a detailed discussion on the risks of inaccurately specifying constructs, consult Jarvis, MacKenzie, & Podsakoff, 2012).

The epistemic relationship between the construct, its potential sub-dimensions, and its manifestations is essential for choosing a scientific method that is appropriate to study the construct of interest. The primary aim of this chapter is, therefore, to analyze whether the construct of competitive HR practices follows a formative mode, a reflective mode, or a more complex mix of these two already before elaborating on the measurement approach that best fits the concept at hand empirically.

Before addressing the specific nature of the competitive HR practices construct in more detail, it seems vital to first elaborate on the different types of higher-order constructs distinguished in the concept and measurement literature based on the formative-reflective distinction. We do so in the next section. After that, we examine the epistemic nature of the competitive HR practices construct, assessing whether a construct of competitive HR practices should be operationalized as a formative or as a reflective construct based on theory and logical reasoning as recommended in research on concept and measurement development (e.g., Coltman, Devinney, Midgley, & Venaik, 2008; Diamantopoulos & Winklhofer, 2001; Jarvis, MacKenzie, & Podsakoff, 2003).

Overview of the Types of Higher-Order Constructs

In general, a reflective relationship between the construct and its sub-parts assumes that the latent construct causes changes in its highly interconnected components. Each of these components shares a large proportion of the content common to this construct and is thus highly interchangeable. Consequently, a change in the values of a latent construct will result in a change in its components in such a way that all of the components will be affected to a similar magnitude (e.g., Jarvis et al., 2003; MacKenzie et al., 2011). This also implies that leaving out one component does not change the meaning and the breath of the construct in a way that substantially undermines its conceptual domain. Due to the abundance of shared meaning between the individual components, the remaining components might substitute the excluded component (e.g., Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003).

In contrast, in the formative mode, the causality between the constructs and its components flows in the opposite direction. In this type of relationships, a construct "does not exist as an independent entity" (Coltman et al., 2008, p. 1252), but is composed of various components that capture a distinctive part or domain of its meaning. Each component contributes a unique meaning to the construct that is not covered by the other components. Hence, the individual components cannot adequately substitute other components and are thus not interchangeable (e.g., Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003).

Besides these simple relationship modes between a construct and its indicators or items (e.g., additive indices, reflective scales), much more complex and multifaceted relationship modes, the so-called higher-order constructs also exist. These relationships are more multifaceted. Higher-order constructs are commonly characterized by at least a two-level structure: They usually consist of multiple components or dimensions at the first-order level (also: level of lower-order components). Each dimension of the construct is, in turn, composed of a set of specific manifestations at the lowest level, the indicator level. At each level, the relationships might follow a reflective or formative mode of interaction, respectively, to represent the higher-order construct. Accordingly, four types of higher-order constructs can be distinguished: reflective-reflective,

reflective-formative, formative-formative, and formative-reflective higher-order constructs (J.-M. Becker, Klein, & Wetzels, 2012; Edwards, 2001; Jarvis et al., 2003). Figure 2 provides a visualization of the four types of higher-order constructs.

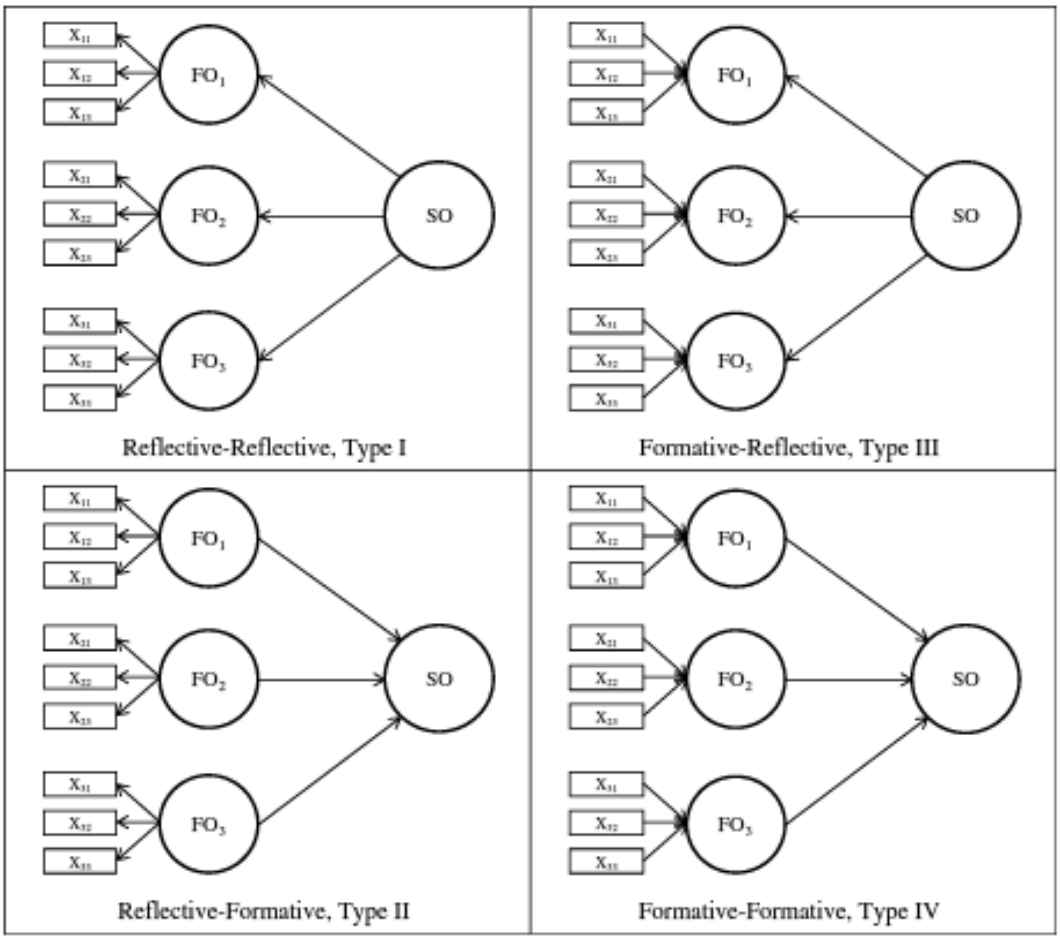

Figure 2. Types of Higher-Order Constructs
Source: J.-M. Becker et al. (2012)

First, a *reflective-reflective higher-order construct* presents a construct that consists of various reflective dimensions (lower-order components) that together build the higher-order construct. These dimensions share a large amount of meaning and are, therefore, also substitutable in content. Leaving out one dimension, therefore, has no substantial bearing on the conceptual domain of the higher-order construct because the remaining dimensions can "compensate for the loss" of each other (J.-M. Becker et al., 2012; Diamantopoulos & Siguaw, 2006; Jarvis et al., 2003). At the indicator level, each of these reflective lower-order components is subdivided further into a set of individual,

highly interchangeable (reflective) items. Following the reflective logic, these items are highly substitutable by each other because they overlap to a large extent (J.-M. Becker et al., 2012; Hair, Ringle, & Sarstedt, 2011; Hair, Sarstedt, Ringle, & Gudergan, 2017; Jarvis et al., 2003). Second, *reflective-formative higher-order constructs* are constructs that consist of formative dimensions at the level of the low-order components where the multiple lower-order components of a higher-order construct are highly independent. While sharing a common theme with the higher-order construct as such, each dimension has very little in common with other dimensions of the construct (J.-M. Becker et al., 2012; Hair et al., 2011; Hair, Sarstedt, et al., 2017; Jarvis et al., 2003). Consequently, excluding a dimension from the higher-order construct would result in a considerable alteration of the conceptual domain since this dimension speaks to a unique aspect of the construct. At the indicator level, each dimension is composed of reflectively organized items that are highly interchangeable within the specific dimension since they share a large amount of collective meaning (J.-M. Becker et al., 2012; Hair et al., 2011; Hair, Sarstedt, et al., 2017).

The third type, *a formative-reflective higher-order construct* is characterized by a reflective mode of relationships between the lower-order components and the higher-order construct where the lower-order components largely overlap in their content or share a common theme, while being comprised of usually independent formative indicators (J.-M. Becker et al., 2012; Hair et al., 2011; Hair, Sarstedt, et al., 2017). Lastly, in *the formative-formative higher-order constellation*, the higher-order construct is formed by highly independent lower-order components that, on their part, are also formed by distinct indicators. Each of these indicators provides a unique contribution and adds unique content not addressed by other indicators within the same dimension (J.-M. Becker et al., 2012; Hair et al., 2011; Hair, Sarstedt, et al., 2017; Jarvis et al., 2003).

Previous literature on concept and measurement development provides some guidelines on how to conceptually substantiate the epistemic nature of a construct (e.g., Coltman et al., 2008; Jarvis et al., 2003; MacKenzie et al., 2011). More specifically, advocates of the distinction into formative and reflective construct theorizing argue that to determine

the epistemic nature of the construct, scholars need to conduct conceptual checks (mental experiments: Jarvis et al., 2003) that address two general questions: (1) whether the characteristics of the construct, its potential sub-dimensions, and their manifestations in specific items (formative: indicators) are distinctive enough from each other and thus formative rather than reflective and (2) whether eliminating one of the sub-dimensions (at the higher-level of the construct) or items (at the lower-level of the construct) has a considerable impact on the conceptual domain of the higher-order construct (e.g., Bollen & Diamantopoulos, 2017; Jarvis et al., 2003; MacKenzie et al., 2011).

In short, we argue that bundles of HR practices are best mapped by formative-formative higher-order logic. We extrapolate the reasons for our argument in more detail in the following section.

HR Practices Bundles: Establishing the Epistemic Nature of the Construct

Bundles of HR practices "represent a pattern of HR practices that are designed to achieve organizational objectives" (Jiang et al., 2013, p. 1462). They are collections of single HR practices combined into a system based on an underlying logic. For example, the overarching goal of a system of high-performance work practices is to increase an employee's (individual) performance to achieve higher organizational performance (Huselid, 1995), while it is the strengthening of bonds with the organization in the high-commitment system (Arthur, 1992, 1994). Within the specific bundle, single HR practices "are not always completely independent; there are underlying patterns to why the practices are used and how they operate" (Jiang et al., 2012; p. 75). Indeed, HRM scholars seem to widely agree that (specific) HR practices can be combined into dimensions based on the overarching strategic activities that are at the core of these practices (Jiang, Lepak, Han, et al., 2012; K. Jiang & Jake Messersmith, 2017). Recruitment and selection, performance management, and compensation or training and development are some examples of such dimensions, although sometimes summarized under slightly different labels (Boselie et al., 2005; Posthuma et al., 2013).

All these activities share the underlying logic of the bundle they represent (e.g., high-performance, high-commitment), while still being distinct from each other in their

meaning. For example, the category of compensation addresses the way employee rewards and benefits are structured in the organization, while the category of performance management relates to the procedures used to define, measure, and evaluate how well employees perform their jobs. Dropping one of these dimensions would result in the loss of important information concerning the conceptual domain of an HR practice system since each of them covers a critical element of the system (Jackson, Schuler, & Jiang, 2014; Posthuma et al., 2013). Thus, we assume that the level of lower-order components, HR practice bundles are best represented by formative sub-dimensions such as the ones suggested in previous research and highlighted above (e.g., compensation and benefits, training and development, and performance management).

At the indicator level, for example, the domain of compensation and benefits includes a set of single HR practices different from the category of performance management and appraisal or the category of training and development (Posthuma et al., 2013). More specifically, the performance management dimension consists of various individual HR practices that relate to different aspects of the performance management process. They address how goals are defined and measured (team vs. individual), how employee performance is evaluated (absolute or relative types of assessment, multisource or supervisor assessment), or how and what type of feedback employees receive (relative vs. absolute, formal vs. informal). Again, similar to the dimensions, while these single HR practices relate to the core activity of performance management in organizations, each of them addresses a unique and distinctive aspect of performance appraisal. For example, the measurement of employee achievements based on team performance is conceptually different from providing developmental feedback. Therefore, we argue that dropping an HR practice that relates to the way goals are set and measured in the organization (team vs. individual) will likely lead to a loss of information concerning the conceptual domain of the overall performance management dimension. The reason is that such an HR practice will not be sufficiently covered by other single HR practices within that dimension. Such a constellation implies that at the indicator level, HR practices do follow a formative logic as well.

Combining these logics, we come to the following conclusion: Although the specific dimensions comprising an HR bundle, as well as the single HR practices within these dimensions, share a common strategic goal (e.g., high performance or high commitment), they have little in common with each other. Both the dimensions and the single HR practices within these dimensions contribute a unique and distinctive conceptual meaning to the specific HR bundle and are, therefore, formative. We thus arrive at the interim conclusion that the concept of HR practice bundles is, in general, characterized by a formative–formative epistemic nature.

Competitive HR Practices Bundle: Formative–Formative Higher-order Construct

Concerning our newly introduced construct of competitive HR practices, we propose that at the conceptual, epistemic level, the bundle of competitive HR practices follows a formative–formative, higher-order logic. Analogous to the logic applied in the previous discussion, our argument builds on the two guiding questions suggested for establishing the epistemic nature of constructs: 1) whether the defining elements of the construct are distinctive enough from each other and thus, considered formative rather than reflective and (2) whether eliminating one of the elements alters the conceptual meaning of the construct and its elements significantly (e.g., Bollen & Diamantopoulos, 2017; Coltman et al., 2008; Jarvis et al., 2003; MacKenzie et al., 2011). We build our reasoning using competitive HR practices examples from our conceptual framework presented in Chapter 3 (Table 3).

We argue that the dimensions comprising a higher-order construct of competitive HR bundles are distinct from each other (e.g., performance management and compensation). While each of the dimensions is marked by a common denominator, namely their potential to induce competition among employees, these dimensions individually address different aspects and activities that organizations undertake within an HR system. For example, activities in the field of performance management focus on procedures that organizations use to evaluate the progress, outcomes, or achievements of employees by constantly comparing employees with their peers. By contrast, the compensation dimension in a competitive HR practices bundle relates to how rewards

are distributed within the organization, specifically with a strong focus on the individual and usually, financial incentives that are disproportionately high and provided to those employees that outshine other peers—the so-called stars or high performers (Chapter 3, Table 3). Together, these different dimensions form the competitive HR practice bundle in their unique way. Consequently, the degree of competitiveness in the overall HR system will be insufficiently addressed if we drop one of the theoretically relevant dimensions. In other words, the breadth of the conceptual domain would be incomplete.

Concerning the indicator level, we propose that a competitive HR bundle is characterized by performance management and appraisal procedures that set and measure the progress of employees based on the achievements of individual rather than team outcomes, and that performance management is based on ranking employees against each other using some type of ranking, an extreme case of which is the so-called forced distribution rankings (Moon et al., 2016). Furthermore, in a competitive HR practice system, the feedback provided to employees is likely to be relative, that is, focusing on how an employee progressed or not in comparison with other team members (Salovey & Rodin, 1984) instead of being developmental, where "an individual's strengths and weaknesses, setting goals, and identification of training needs" (Boswell & Boudreau, 2002, p. 392) are highlighted. Furthermore, compensation and benefits activities in such a bundle focus on bonuses for individual achievements—bonuses that are disproportionately high or, for example, bonuses that are given only to an exclusive group of high performers in an organization. Accordingly, single HR practices under a specific dimension within a competitive HR practices bundle are not necessarily interchangeable, as they address different aspects, components, and characteristics of the respective dimensions. For example, the use of forced distribution rankings echoes a procedure within the performance management category that differs from the provision of relative feedback. Employee performance and goal achievement might be evaluated on the basis of forced ranking; however, this does not necessarily mean that the same employees will be informed about how he is doing in comparison with team members during regular feedback sessions or annual reviews.

Summing up, the individual dimensions of a bundle of competitive HR practices cannot be substituted, be excluded from the overall bundle without undermining the breadth of the construct. The corresponding dimensions are each composed of many individual HR practices that jointly represent the strategic HR activities underlying a specific dimension. However, they are not substitutes for each other but instead reflect largely independent single HR practices, each contributing a unique meaning to the specific dimension. Therefore, and given the above arguments, we conclude that at the epistemic level, a specific bundle of competitive HR practices follows a formative–formative higher-order epistemic logic.

CHAPTER 5: EXPLORATION & CONTENT VALIDATION OF THE COMPETITIVE HR PRACTICES BUNDLE

Our conceptual model, provided in Chapter 3, highlights that competitive HR practices are a promising future research avenue, as they might have a distinctive impact, and both desirable (e.g., inspiration and employee engagement) and undesirable outcomes (e.g., envy and work deviance). As delineated before, research on competitive HR practices is rather mute. It has yet to provide a measurement instrument to approach such practices for purposes of conducting empirical tests in the field. This is where the next part of the dissertation steps in. It explores and validates a pool of HR practices to be used for the development of a measure for a bundle of competitive HR practices. We launched our measurement development with a qualitative exploration of competitive HR practices through semi-structured interviews with Chief Human Resource Officers (Study 1). The interviews were analyzed using the qualitative content analysis approach developed by Gioia and colleagues (Gioia, Corley, & Hamilton, 2013). We then extended the list of identified HR practices by additional HR practices that have been recently suggested in the HRM literature to evoke competition (e.g., i-deals and exclusive talent management) and content validate them with HR scholars (Study 2) to establish a comprehensive set of HR practices to inform our measurement development. In the sections that follow, we highlight the main building blocks of how we approached the development of a measure for competitive HR practices.

Study 1: Identification of Competitive HR Practices

Since research on competitive HR practices is at a nascent stage, we decided to proceed in an inductive way to generate the initial list of competitive HR practices first. In so doing, we follow measurement development recommendations for phenomena that have received only limited attention in prior research (e.g., DeVellis, 2016; Edmondson & McManus, 2007; Hinkin, 1995, 2005).

Data Collection

We conducted 26 expert interviews with the highest-ranking HR representatives in Swiss-based companies. Expert interviews assess the information and experiences of respondents who possess specialized knowledge in an area challenging to attain from other sources (e.g., Bogner & Menz, 2009; Gläser & Laudel, 2010). Here, the primary expert group consisted of the Chief Human Resource Officers (CHROs). We focused on CHROs for two reasons. First, CHROs are the most knowledgeable about how HR practices are used and designed throughout the organization, both countrywide and across different groups of employees. Second, they are the most likely group within the HR function to possess information about the intentions and reasons to use different HR practices on a higher strategic level. In companies with no CHROs, we interviewed HR professionals at the next highest hierarchical level.

We selected HR experts via purposeful sampling based on the principle of maximum variation (e.g., Creswell, 2016; Patton, 2014; Robinson, 2014). Maximum variation aims to cover a comprehensive range of perspectives about a topic and, therefore, fits our objective of detecting as many competitive HR practices as possible (e.g., Creswell, 2016; Patton, 2014; Robinson, 2014). To achieve maximum variation in our sample, we based our selection of organizations on (1) traditional Swiss family businesses, (2) Swiss businesses listed on the Swiss stock exchange (SMI), and (3) multinational corporations. Our decision to include these three types of companies derives from current debates in the business press. These debates indicate that the HR practices of multinational corporations might be more competitive than the ones of Swiss companies, as the introduction of competitive HR practices has been linked to a strong influence of the Anglo-Saxon model (e.g., Amazon, Uber, and Yahoo). We also took care that our HR experts come from companies of different sizes and industrial sectors [5]. Focusing on multiple firms with different industrial and company characteristics, we strived to ensure heterogeneity of perspectives regarding the HR practices used by organizations to

[5] For reasons of anonymity, we have refrained from depicting organizational sector. In combination with information about the type of organization (e.g., SMI), it would otherwise be possible to identify the companies.

induce internal competition. Finally, 26 CHROs participated in this study. Of the 26 interviewed HR professionals, 11 respondents came from corporations listed on the Swiss Market Index, eight from large family businesses, and seven from multinational corporations (MNCs). As the focus of our analysis is on HR practices, and for anonymity reasons, we refrained from collecting any demographic or other professional information about the interviewed HR professionals.

The interviews with HR professionals followed a semi-structured format. Semi-structured interviews lean on an interview guide that has broadly structured topics to be addressed during the interview, while being flexible for follow-ups on additional aspects topical to the study when necessary (e.g., Brinkmann & Kvale, 2015; Bryman, 2012; Rowley, 2012). Following the semi-structured interview approach, we pilot-tested our interview guide with nine members of our department who are acquainted with conducting interviews and with three HR professionals. Piloting an interview guide provides valuable insights on how well practitioners perceive an interview, and whether the understanding and interpretation of interviewees differ from those of the researcher (e.g., Gläser & Laudel, 2010; Rowley, 2012). Based on feedback from HR professionals, the guideline was slightly modified. In our original interview guide, we defined competition and competitive HR practices at the beginning of the interview. All three HR practitioners, however, highlighted that internal competition does not need further definition. Therefore, in our interviews, we only defined competitive HR practices when explicitly requested to do so. The final interview guideline is depicted in Appendix A.

During the interviews, we adjusted the order of questions in our guideline to the natural conversation flow (Gläser & Laudel, 2010; Rowley, 2012). At the start of each interview, experts received information about the purpose of the interview, as well as anonymity requirements. The main body of the interview guide addressed the topic of competitive HR practices, where respondents were asked about what HR practices their organizations use to encourage competition among employees. We also included follow-up questions to gather more insights on the topic (e.g., Berg, 2001; Bryman, 2012; Gläser & Laudel, 2010). For example, we asked for more details on how HR practices were implemented and whether they know of any additional practices based on their

previous professional experiences. The interviews were conducted from November 2015 to May 2016, both personally and via phone, by the author of this dissertation. All in all, we were permitted by the respondents to tape-record and transcribe verbatim 24 out of 26 interviews. Each interview lasted, on average, 48 minutes. The generated interview material amounted to an overall of 345 pages of transcripts.

Data Analysis

To analyze the interview data, we utilized the grounded theory-based approach to qualitative content analysis developed by Gioia, the so-called 'Gioia approach' (Gioia et al., 2013; Langley & Abdallah, 2011). One of the key elements in the Gioia approach is its strong focus on the respondents' perspective, especially at the initial stages of data-coding (Gioia et al., 2013). Such an approach fits well with the practitioner-oriented focus of our study, that is, to first explore and identify HR practices that companies use to induce internal competition. We conducted our interview analysis with ATLAS.ti, a qualitative data-analysis software.

Steps To Ensure Qualitative Rigor. As with any scientific approach, during our analysis, we needed to ensure that we proceed with rigor. In line with the Gioia framework, we sought to facilitate the trustworthiness of the gathered insights (Murphy, Klotz, & Kreiner, 2017; Symon, Cassell, & Johnson, 2018). Trustworthiness was addressed through a detailed and transparent description of the overall procedure underlying our qualitative study. We strived to be as precise as possible in describing the research process used to collect and analyze the interview data. We also described our coding and categorization process, as well as a detailed coding frame and the so-called Gioia templates.

Furthermore, we aimed at ensuring the intersubjectivity of our data as another critical criterion used to judge rigor in qualitative research (e.g., Creswell, 2016). The principle of intersubjectivity reflects the notion that "a single knowledgeable coder may be reasonably confident that his or her coding would be reproducible by other equally knowledgeable coders" (Campbell, Quincy, Osserman, & Pedersen, 2013, p. 297). The

literature on qualitative methods provides various possibilities for establishing intersubjectivity (Creswell, 2016; MacPhail, Khoza, Abler, & Ranganathan, 2016). We established intersubjectivity by assessing the level of intercoder agreement. The intercoder agreement requires coders to go through parts of the transcripts and to discuss their codes to resolve any discrepancies in coding (Creswell, 2016). In our case, besides the author of this dissertation, another intercoder, familiar with the topic and goals of the study, read and coded the same interview material (Campbell et al., 2013). We determined the level of intercoder agreement based on, overall, eight transcripts, which is consistent with the general guideline to use at least 25% of the overall data material to determine the level of intercoder agreement (e.g., Campbell et al., 2013; MacPhail et al., 2016). Through blind coding, each coder coded the same transcripts independently. The set of categories that emerged was then conjointly discussed. After solving minor inconsistencies, the two coders agreed on 86%[6] of the categories, indicating a high level of intercoder agreement (Campbell et al., 2013; Creswell, 2016; MacPhail et al., 2016).

Another key aspect related to the rigor of qualitative analysis is the notion of saturation. Saturation marks a point where no new insights emerge from additional data collected, thus making any further data collection or analysis redundant (Creswell, 2016; B. Saunders et al., 2018). We continually approached CHROs for interviews until we realized (after completing 17 interviews) that the amount of new information gathered and subcategories provided in the interviews decreased, which signaled that we achieved the necessary level of theoretical saturation in our analysis (Creswell, 2016; B. Saunders et al., 2018). To rule out the possibility that this was due to coincidence, we gathered nine additional interviews. Our final sample consisted of 26 interviews. Our sample also met the formal saturation criteria of 12 to 30 interviews recommended for heterogeneous samples (e.g., M. N. Saunders & Townsend, 2016). Therefore, our data were theoretically saturated and met the formal saturation criteria recommended for heterogeneous samples (e.g., M. N. Saunders & Townsend, 2016).

[6] To calculate the level of agreement, the number of categories agreed upon by the two coders were divided by the overall number of identified categories and multiplied by 100.

Description of the Qualitative Content Analysis Approach. In line with the Gioia approach, our data analysis proceeded in multiple (iterative) coding cycles. We switched back and forth between the codes, the emerging common themes, and the aggregated dimensions (Gioia et al., 2013). Our analysis started with the segmentation of the interview material to identify passages dealing with competitive HR practices. After that, we read the passages and assigned in vivo codes, which are open codes that closely resemble the respondent's perspective (Saldaña, 2015). In this way, we established the first-order codes in our data. Traveling back and forth from in vivo codes to the data, we then looked for potential linkages between the codes. We distilled these codes into common themes and concepts, where possible, to represent first-order themes via constant comparison. At this stage, broader subdimensions, such as performance evaluation, compensation, or promotion, started to emerge (Boselie et al., 2005; Posthuma et al., 2013). After the collection of the first-order codes and the first-order themes, these were synthesized into second-order themes. The second-order themes were then formed to represent the aggregate dimensions underlying the construct of competitive HR practices. Figure 3 discloses the overall set of HR practices identified in the interviews.

Overall, our analysis identified a two-tier structure underlying the HR practices used in organizations to nurture internal competition as presented in the aggregate dimensions underlying the construct of competitive HR practices: HR practices used to inspire competition within teams and those used to inspire competition across teams and units. We label these two bundles that emerged intra-team and inter-team HR practices, respectively.

In the following, we address these findings in more detail. We first devote our attention to the HR practices used to inspire intra-team competition. Afterward, inter-team competitive HR practices are examined.

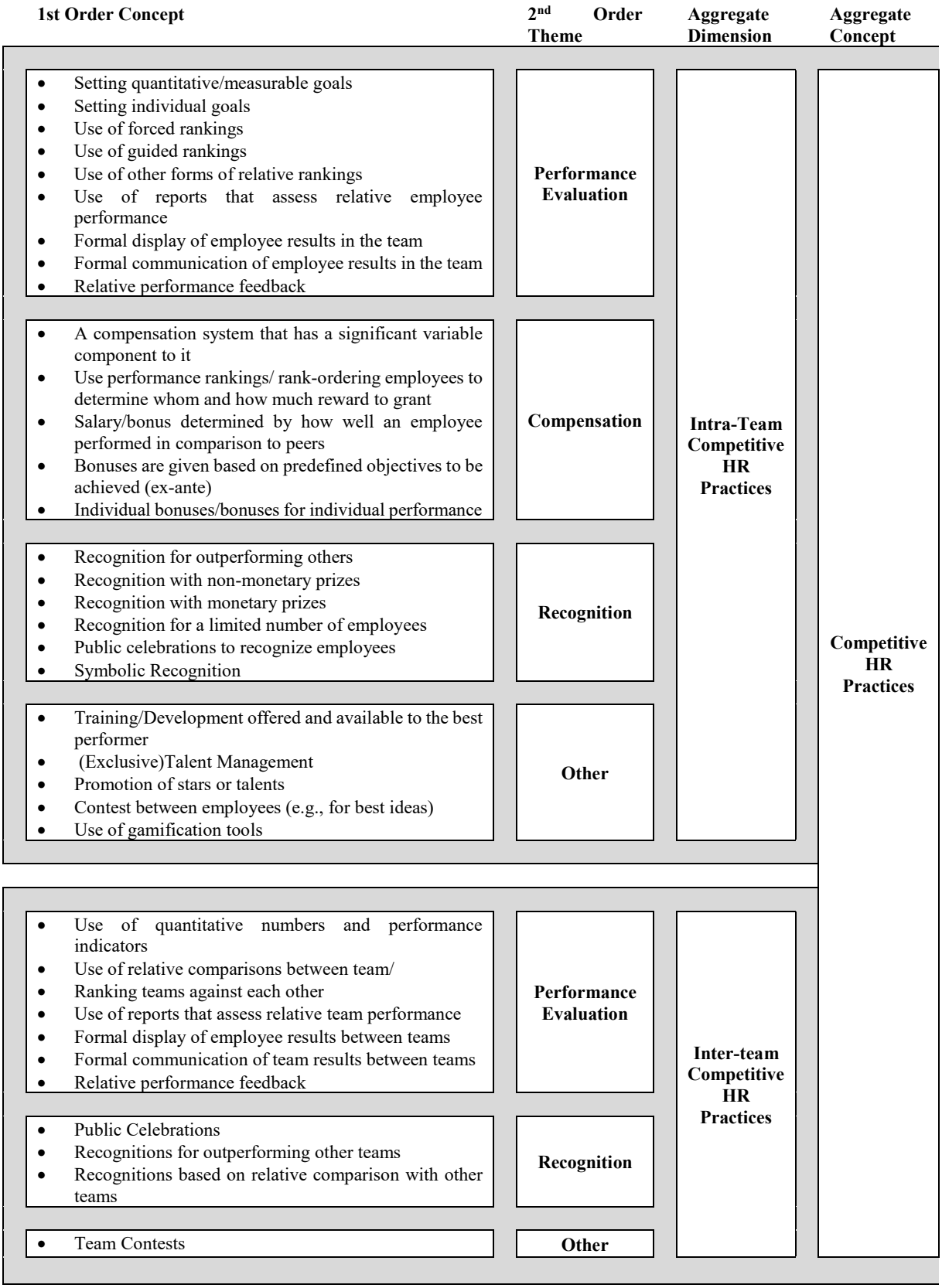

Figure 3. Overview of Competitive HR Practices Collected from Interviews

Results

Intra-Team Competitive HR Practices. Overall, our analysis identified four second-order themes within the bundle of intra-team competitive HR practices: (1) performance evaluation,[7] (2) compensation, (3) recognition, and (4) others. Each of the second-order categories was formed based on at least one data-driven, first-order concept reflecting single HR practices that emerged from the interview analysis. Table 19 to Table 22 (Appendix B) provide a detailed depiction of the aggregate dimensions, the second-order themes, and the first-order concepts with corresponding exemplary statements of intra-team competitive HR practices.

(1) Performance Evaluation. Among the second-order categories, performance evaluation seems to have attracted the most attention, with a total of nine single HR practices identified in the interviews with HR professionals. Our interviewees pointed to multiple instruments in the area of performance evaluation that are expected to encourage competition within teams. Related to goal-setting, the HR practices of setting quantitative and individual goals were suggested as inducing competition:

> *If you have a performance appraisal process, where employee achievement and employee compensation are strongly defined by certain comparative numbers, such as KPIs (key performance indicator, individual revenues, or number of acquired customers […], then naturally, you enforce competition (IP_5).*

Furthermore, various forms of relative rankings were identified as fostering intra-team competition. Among them is the notorious forced ranking, a practice associated with an extreme, Darwinian form of competition by one of our interview partners:

> *One facet of my former employer was that they used a really forced ranking, so you have to have 10% "bad," 60% in the stable middle, 20% "good," and 10%*

[7] Performance evaluation and performance management were often used interchangeably. However, in this dissertation the term performance evaluation was chosen as better fitting. The reason for this lies in the controversial definitions of what performance management is and what it is not. Broadly speaking performance management also refers to aspects such as compensation or rewards as a means to manage employees' performance (for an overview also consult Schleicher et al., 2018). However, in the field of HRM research, compensation and rewards is often considered a separate category within the overall HR system (e.g., Posthuma et al., 2013). Performance evaluation does not include compensation. To prevent any ambiguity related to this, we stick with the term performance evaluation instead of performance management.

"top," and that was slavishly enforced. It is a bit of a Darwinian competitive culture that one would promote (IP_5).

However, the forced ranking was not the only ranking device to join the intra-team competitive HR practices. Other forms of relative ranking also emerged from the interviews. A compelling case is the so-called 'guided' distribution, assumed to contribute to competition within teams through comparison processes and feelings that one has been treated unfairly. The interviewees have described this form of guided ranking as a system where supervisors are advised but not forced to distinguish their employees into groups of high, middle, and low performers. What is also interesting, as illustrated in the quote below, is that the role of forced ranking has been perceived differently across the interviews. As indicated above, one interviewee perceived forced ranking as an extreme way to induce competition—a Darwinistic way. By contrast, others found that guided distributions are more problematic, being perceived as seemingly unfair:

(In a guided distribution) employees compare themselves; they feel that they have been treated unfairly. The argument that such things like difficult project situations and so on [emerges]. I do not perceive such a system to be advantageous or motivating for the organization. Thus, I could well imagine a forced distribution, really forced (IP_6).

Various respondents also highlighted that rankings are a multifaceted tool and that there might be different forms of ranking used in organizations, not only forced or guided ones, indicating that ranking employees against each other, by itself, already promotes competition.

The child has different names—human capital, human competence, people's portfolio—but it's always the same. […] depending on how many criteria you use, you have performance A, B, C. Potential 1, 2, 3. B2 is so the middle, that is the employee who performs, who has good potential. Then there are the stars, [with] above-average potential and above-average performance. Then there is the 1A, where you think about what happens to those who do not [reach such a ranking]" *(IP_14).*

Furthermore, the use of reports that assess the relative performance of employees and the communication of the employee results to others in the team were mentioned as two additional procedures that introduce competition, as indicated by the following quote:

> *For me, it's quite clear. I think you can really exert influence when you compare, yes, via production figures, via, yes, a corresponding output, via certain key performance indicators. That communication is also clear and open, really forms groups, for example, levels among each other to create competition. I can use such procedures to generate competition (IP_15).*

Related to this, some of our interview partners also mentioned a specific form to make employee results visible, for example, by transparent records or other types of formal display, such as boards, as mentioned in the following quote:

> *In the past, we had it [employee results] even somewhere on some board, where their names were displayed. But we have refrained from that again (IP_17).*

Finally, relative feedback emerged from our interviews as a competitive instrument from a more general perspective, indicating that delivering relative feedback might also function as a means of fostering competition, as illustrated by the following quote:

> *There is really this competition, where groups or an individual, who presents something, who is evaluated there and who then also sees how his colleagues perform and is then also involved in the whole feedback, that is partly a tough thing (IP_14).*

(2) Compensation. Similar to performance evaluation, various HR practices related to the way compensation and rewards are structured in the organization were highlighted as potentially contributing to competition in teams. Among them are incentives characterized by a pronounced share of variable pay, as well as individual bonuses based on individual performance, as illustrated in the quote from one HR professional:

> *Now, perhaps quite an extreme form of competition [is] that we're suddenly introducing forced rankings or that we're suddenly introducing huge bonuses or that we're now virtually leading the subject of performance in an extreme form (IP_24).*

> *We have never paid a bonus here of a magnitude that is two, three, or four times the fixed pay component. We do have a magnitude of 30% for sales, but in general, the variable component is between 5% and 10% of the fixed pay (IP_24).*

Furthermore, related to rankings from the performance evaluation category is the use of such rankings to also guide the decisions about the distribution of bonuses in teams. Rankings used to determine how much bonus one gets, as well as to compare employees with each other to decide who gets the highest bonus, are the two instruments mentioned in our interviews:

> *Yes, well, I think simply by the performance management system, of course. The more the employee receives a rating from his superior at the end of the year, A, B, C, D, E, from "very good" to "insufficient" to "meets expectations," this performance rating of course also has an influence on the annual salary round; that's clear. The higher or better they perform, the higher the salary, which creates competition, for example. This is one of the traditional instruments (IP_14).*

Some of our interviewees mentioned that they use rankings to evaluate their employees, but that this evaluation has no impact on employees' compensation because they receive a fixed salary, indicating that rankings can, but do not have to, be connected to rewards. To make sure to consider this nuance, we decided to include the use of rankings to determine the level of pay as a separate instrument in the compensation category for HR scholars to decide upon in the next stage.

Finally, our interviewees also highlighted that promising bonuses in advance for a specific employee output might as well be responsible for bringing in competition into the team. It seems that letting employees know in advance how much bonus they might get if they achieve a specific outcome is a potential HR practice worthwhile to be put to a content validity test with HR scholars.

> *The awarding of bonuses is such an example [of competition]. So whenever [someone] somehow holds out the prospect of monetary things, I am not sure if it is a competition alone, but it is not motivating. Yes, especially when I promise premiums in advance for certain specific projects, expectations arise (IP_15).*

(3) Recognition. A variety of awards, prizes, and other options for recognizing employees emerged after various rounds of coding. The different modes of recognition mentioned in the interviews seem to vary in relation to the value of the recognition received, as well as to who will receive recognition, an award, or a prize. Related to the value of recognition, we distinguished the way organizations recognize employees into those forms of recognition that have a direct monetary value attached to them (e.g., financial rewards):

> *So the employees should also be proud, they should also receive recognition if they were particularly good; therefore, we have spontaneous bonuses, success bonuses as an additional financial instrument (IP_14);*

as opposed to those that were not directly monetary (such as an exclusive trip):

> *...also get a bonus—on the one hand, for themselves; on the other hand, for their agency, to strengthen the sense of unity a little bit. And thirdly, they all get to take part in an exclusive trip that is made for them (IP_17);*

or largely symbolic forms of recognition not accompanied by a paycheck:

> *Let me go first, it just occurred to me now that I just signed ten certificates earlier. For example, we also reward those who are most committed to volunteering. They will then also be published. That means they get a certificate. They will then be published on the intranet (IP_13).*

> *It is important that successes are recognized throughout the company. And they do not necessarily have to be rewarded with bonuses, but at least that is presented internally or externally (IP_13).*

Related to the aspect of who receives recognition, two types of recipients seem to emerge from our interview analysis—those who outperform others and those who belong to a small group of high-performing employees as illustrated in the following quote:

> *And in sales, there's the so-called top-five event. That's 5% of the best salespeople, not the five best salespeople, but 5% of the entire workforce that are awarded (IP_17).*

Finally, our interview partners referred multiple times to the type of recognition that focuses on honoring particularly successful individuals in a public celebration, as illustrated by expressions such as:

> *I am almost tempted to say, it is "Hollywood-like;" this is us in another world; there's celebrating; there's an official speech, and now in the room so and so much with so and so many points Mr. XY or Mrs. YZ… (IP_17).*

> *Once a year, there is the "Oscar Night," where the ten best are awarded for the year. And that generates a lot of buy-ins, and it also generates competition, so people want to win those awards (IP_25).*

(4) Others. In the category others, we included HR practices that, in contrast to previous categories, emerged as stand-alone first-order concepts. Here, a total of five stand-alone (yet also somehow closely connected) instruments were mentioned in the interviews as stimulating competition. Among them is training and development offered and made available to the best performing employees, as well as exclusive talent management. Particularly, exclusive talent management has been increasingly proposed to enhance competition (Bolander, 2017; Son, Park, Bae, & Ok, 2018); it is referred to in the literature as being "directed at a small, elitist percentage of the workforce only – the A players, high potentials, high performers, or strategically important employees"(Meyers & van Woerkom, 2014, p. 194).

> *Or as part of employee development, you may give the employee additional training because he is really good; you invest in him. He may be able to travel to another country to gain experience there. For example, we have an exchange program where employees can go anywhere for eight to twelve weeks. So now, I also have an HR employee who was then three months in America (IP_14).*

> *It may be a little banal, and this is a part where we then try to specifically target talents who, due to their profile and background, have the chance to develop across divisions, who also work through so-called quasi-talent markets, and to push development planning there also from HR (IP_5).*

Closely related to this are promotions given explicitly to talented people as another means to support the advancement of "the best" and the "most talented ones."

Of course, this also includes talent management, people who engage in the desired behavior and show openly, of course, this is also reflected in promotion; this is reflected in talent management (P_18).

Furthermore, two additional HR practices, namely, contests between employees and the use of gamification tools—tools that introduce game features at work to improve worker performance and motivation (Cardador, Northcraft, & Whicker, 2017)—were mentioned in this category, as illustrated in the quotes below. Gamification represents a newer type of instrument used in organizations to enhance employee motivation and performance. It has been proposed as being less prone to the crowding-out of intrinsic motivation (Pereira, Oliveira, Vieira, Lima, & Paes, 2018) as opposed to bonuses, which have been highly disputed in research for their crowding-out effect on intrinsic motivation (Frey & Oberholzer-Gee, 1997). However, as pointed out by (Cardador et al., 2017) "the fact that workers can earn points and badges, top the leaderboard, and display their achievements on their character sheet means that worker performance information is not only more visible to workers themselves, but also visible to other workers" (p. 356). This feature makes gamification a tool that can also be used by companies to compare employees based on these points or badges and in turn, also is prone to initiate social comparison in teams. Our insights point to the same direction. They indicate that, while assumed to enhance employee motivation, gamification might do so at the cost of relative comparison that lights up the drive to compete for the highest score or another star as a result of such a rating:

And that is why competition between ideas is needed, where one has to say which idea is actually the best. But once you've decided that, partnering is needed again. And this balance, that one can say, I was a competitor before, I had another idea, now we have decided, now we have to work together to implement this idea, this ability is central (IP_1).

We have an internal tool; there, the answers are evaluated: employees who receive good ratings, get the questions, or get more questions. So the knowledge is shared and gets rated. And the knowledge becomes more and more valuable. So that is why it's called "XY" (IP_12).

Inter-Team Competitive HR practices. In contrast to the intra-team competitive HR practices, our interview analysis revealed comparatively fewer HR practices used to nurture competition among teams. Overall, three second-order themes were identified as a result of this analysis: (1) performance evaluation, (2) recognition, and (3) others. Again, analogous to the bundle of intra-team HR practices, the second-order categories were built based on at least one first-order, emerging concept. For an overview of the aggregate dimensions, second-order themes, and first-order concepts, see Table 23 (Appendix B).

(1) Performance Evaluation. Similar to intra-team HR practices, the category performance evaluation has been addressed by various HR practices. Some of them showed close correspondence with the ones identified and generated in the intra-team competitive HR practice bundle. An example is the use of quantitative numbers and measurable performance indicators, visible in quotes such as:

> *So for me, it's quite clear, I believe that where you can really influence this is when you either compare teams or units, yes, via production figures, via KPIs. Also, to communicate them clearly and openly, I really can create competition through such measures (I_15).*
>
> *Competition in teams or between teams is driven with certain key figures, with comparability, with constant benchmarks, mutually, and so on (I_26).*

Similarly, ranking and comparing the results of teams in the organization has been mentioned as driving competition between teams or units. To support this process, companies also seem to rely on reports that assess the degree of the relative performance of teams, communicate and display team results in some form or other that might lead to competition at the inter-team level, as illustrated in the quotes below.

> *So, what we do is when we look at all the quarterly figures of the teams together, for example, we deliberately include the figures of the other teams and we also tell the team how they compare to the others (I_8).*
>
> *I think that transparent recording and presentation of performance, whether of individual employees or of teams, can be a competitive factor (IP_13).*

As indicated below, relative feedback is something that companies seem to provide to employees to initiate competition not only within teams but also at the inter-team level.

> *There is really this competition, where groups or an individual, who present something, are[/is] evaluated and also see[(s)] how colleagues perform and [are/]is then also involved in the whole feedback, that is, partly a tough thing (IP_14).*

(2) Recognition. Concerning the category recognition, one interviewee mentioned that his/her organization uses public celebrations to recognize the teams, as illustrated in the quote below. What this quote also highlights is that while being public, these celebrations were also directed meant to honor the best teams, which implies that there must be some kind of ranking or relative comparison underlying the recognition process to identify the best team.

> *And the best [mentioned in connection to teams] will then be honored on a stage with an evening event and appreciation. I think that's the main part of it. They get awards (IP_12).*

(3) Others. In the others category are those associated with HR practices for which only one first-order concept could be identified as having emerged, for instance, team contests, where teams compete against each other, for example, in project contests:

> *The same project is transferred to two or three groups. And the groups present it to the group management after half a year. And the group management then decides what project group performed best (I_14).*

Summing up, we have identified from the interview material a wide range of HR practices that are used in organizations to inspire competition within and between teams. We identified a total of 24 HR practices used to stimulate intra-team competition. By contrast, HR practices at the level of inter-team competition were less revealing in the sense that only ten single HR practices emerged for this analysis.

Supplementary Deductive Extension

Given the inductive nature of our analysis, we consulted research and discussed our insights with our colleagues. Next, we provide an overview of these steps. For the sake

of transparency, we provide this overview as a short depiction of the broad steps that evolved to arrive at our final list of HR practices. The specific HR practices and corresponding items are available from the author of the dissertation upon request. We give an overview of each of these steps below.

Associated with the research-related extension, as delineated in our conceptual framework, no measurement instrument to assess bundles of competitive HR practices so far exist in research. Yet, in the course of our follow-up literature search, we were able to identify some studies in the area of competition research, pay transparency and i-deals, which contributed to the subsequent extension of our list of HR practices to a different extent. We drew on the competitive work environment scale by Fletcher and Nusbaum (2010), which provided some valuable items that tap closely into our construct. The overall scale is a measure of the competitive work climate. It thus includes items that address perceptions rather than formal procedures. Nevertheless, some of the items, in our view, also reflect the way formal procedures, such as promotions, recognition, or training and development, are addressed in organizations and thus has been used as the starting point for various items to extend our list. Furthermore, we extended our list of HR practices to include i-deals and pay transparency. This decision was triggered by recent studies on the topic indicating that i-deals, as well as pay transparency, might lead employees to compare themselves with others in the organization and experience envy when witnessing others who receive such i-deals (e.g., Bamberger & Belogolovsky, 2017; Ng, 2017).

We also presented for feedback the pool of HR practices generated in the previous step to our colleagues who have expertise in HR research. In this process, the pool of HR practices was modified and complemented. Concerning the intra-team competitive HR practices, we extended the compensation category to include pay raise, as our colleagues perceived that not only bonuses but also pay raises might be given based on how well employees perform in comparison to their team members. Another modification based on feedback from our faculty was to include the aspect of relative rankings, not only in the performance evaluation and compensation category, but also as relating to the distribution of forms of recognition, promotions, and training and development, as well

as exclusive talent management. Also, a noteworthy suggestion was to include new HR practices of internal crowd-working, where employees have to compete with each other for tasks or assignments in a contest-, tender-like fashion and hence might contribute to higher competition in teams. Finally, several suggestions have been made to extend our pool of inter-team HR practices. Based on feedback from some of our peers, we included team pay-for-performance and team variable pay, paralleling the same logic as the individual and variable pay from the intra-team HR practices. The argument here was that while these HR practices might increase collaboration in the team, they might as well encourage the silos mentality between teams. Given that all of these suggestions will be subject to a content validity test with HR scholars in the next step, we decided to leave it to HR scholars to determine whether these items should be part of our construct.

Study 2: Content-Validation of Competitive HR Practices

The primary goal of this step is to extend our collection of qualitatively identified HR practices and to establish their content validity, that is, a close theoretical connection between the single HR practices identified in the previous phase and the conceptual definition of our construct. An assessment of content validity is vital when developing a new measure (e.g., Aguinis & Edwards, 2014; DeVellis, 2016; Podsakoff, MacKenzie, & Podsakoff, 2016). To establish the content validity of the intra-team and inter-team competitive HR practices, we relied on a standard procedure, namely, an expert rating survey (e.g., DeVellis, 2016; Worthington & Whittaker, 2006). Our final choice of intra-team and inter-team competitive HR practices reflects the following steps: (1) we excluded HR practices that did not achieve the appropriate level of content validity, (2) we reviewed and modified specific HR practices that were suggested for improvement by HR scholars, and (3) we extended the survey to include additional HR practices based on expert advice where appropriate.

Data Collection

Before conducting the survey with HR scholars, we aimed to ensure that the HR practices to be included in the survey are formulated in a clear, concise, and distinct manner (Worthington & Whittaker, 2006). Pilot tests of survey questions are a common approach in measurement literature to achieve this (e.g., DeVellis, 2016; Onwuegbuzie et al., 2010). The identified list of HR practices was distributed for a review and pilot test to a team of researchers from our department (N=7). We asked our pilot testers to look through our list for feedback on whether each HR practice is appropriately addressed (e.g., verbal clarity) as well as to highlight any other issues they perceived as needing further improvement. Due to this feedback, the list of HR practices was slightly modified in wording and enriched by examples for some HR practices (e.g., recognition practices).

After these modifications, we surveyed a sample of 14 international HR scholars to establish the content validity of our construct through a multi-rater agreement analysis. The level of multi-rater agreement guided our decision of what HR practices to include

in the specific bundle of intra- and inter-team competitive HR practices. In this survey, the HR scholars judged the extent to which each of these single HR practices, in their view, is sufficiently relevant to be included in the competitive HR practice bundles. HR scholars could differentiate their answers on a 4-point Likert scale that ranged from 1= "not relevant" to 4= "highly relevant," a range commonly used in many expert rating studies (e.g., DeVellis, 2016; Polit, Beck, & Owen, 2007).

Our survey comprised three blocks. The first block included HR practices related to intra-team competition. The second block addressed HR practices that induce inter-team competition, while the final, third block concluded with questions that address the extent to which these scholars engaged in different activities related to HRM research (e.g., publish and review scientific articles or teach topics related to HR). In line with recommendations from measurement development literature (DeVellis, 2016), we defined competitive HR practices at the top of every survey page to make cross-checks between the definition of the construct and the single indicators more convenient. At the end of each page, we provided extra open-ended entry fields for scholars to provide feedback and to supplement our list of HR practices with additional practices not covered in our list, but in their view, relevant to be included in the intra- and inter-team competitive HR practice bundles.

We received responses from HR scholars (N=14) with extensive expertise in the field. The majority of the HR scholars in our sample hold a full professor position (78.6%); conduct, publish, and review HRM-specific research (78.6%); and teach HRM-specific classes (57.1%) at least on a frequent basis. For a detailed depiction of the sample characteristics, see Table 4.

Table 4. Academic Characteristics of the HR Scholars Panel

		Frequency	Percent
Current Position	Associate Professor	3	21.4
	Full Professor	11	78.6
Teaching HRM specific classes	very rarely	1	7.1
	occasionally	1	7.1
	frequently	4	28.6
	very frequently	8	57.1
Conducting HRM specific research	frequently	3	21.4
	very frequently	11	78.6
Publishing HRM specific research (e.g., in peer-reviewed journals)	frequently	3	21.4
	very frequently	11	78.6
Reviewing HRM specific research (e.g., peer-reviewed journals)	frequently	3	21.4
	very frequently	11	78.6
Total		14	100

Data Analysis

Various metrics are available to approach the content validity of measurement instruments (DeVellis, 2016). Our approach focused on procedures recommended by Polit and colleagues (Polit & Beck, 2006; Polit et al., 2007). Polit and colleagues (2006) distinguish between two types of content validity indices: the item-level (I-CVI) and the scale-level content validity scores (S-CVI). I-CVI scores reflect the proportion of agreement among experts that an item, which in this case is a single HR practice, is relevant to be included as part of the construct. I-CVI is calculated as the number of experts that rated an item as relevant, divided by the overall number of experts. An I-CVI of at least 0.78 is required when the total number of participants exceeds five experts. Concerning the scale-level content validity, the scores of the S-CVI reflect the proportion of items that were deemed as highly relevant by all experts. The values equal to and above 0.80 indicate a high level of content validity (S-CVI/Ave $\geq$ 0.80) at the sub-scale level. As recommended by Polit and Beck (2006), among the three available calculations of sub-scale validity, we base our analysis and interpretation on S-CVI/Ave, which is calculated by averaging the values of I-CVI for the sub-dimensions. S-

CVI/Ave is a more advisable approach as it embodies information about the performance of each item in the scale through averaging (Polit & Beck, 2006).

Although I-CVI and S-CVI are viewed as sufficient indicators of content validity, they do not account for the probability of chance agreement among the respondents. To ensure that the list of HR practices possesses content validity beyond the chance agreement, we, therefore, calculated the modified Kappa statistics that reflect the degree of agreement among the respondents adjusted by the probability of chance agreement (Polit et al., 2007)[8]. The values of the modified Kappa are excellent if above 0.74, good if between 0.60 and 0.74, and fair if between 0.40 and 0.59 (Polit & Beck, 2006; Polit et al., 2007).

Results

Intra-team competitive HR practices. We calculated I-CVI, S-CVI/Ave, and Kappa, which together speak to the level of the multi-rater agreement to establish the overall content validity of our proposed pool of intra-team competitive HR practices. Table 24 Appendix C reports the results of the multi-rater agreement for intra-team competitive HR practices.

Item-Level Content Validity. We first start with the examination of intra-team HR practices content validity, particularly the item-level content validity (i.e., I-CVI). Intra-team competitive HR practices proposed in this bundle exhibited I-CVI coefficients that ranged from 0.29 to 1.00. In the category performance evaluation, one HR practice showed low content validity, that is, employee goals defined and measured quantitatively (PerfEval_1; I-CVI = 0.57). In the category employee compensation, low levels of content validity (<0.70) were observed in the case of two HR practices, namely, bonuses that were given based on predefined objectives and pay transparency (Comp_9,

[8] In line with Polit and colleagues' suggestions (2007), we used the following formula to calculate the modified Kappa coefficient K*: K* = (I-CVI - Pc) / (1 - Pc). In this formula, Pc stands for the probability of chance agreement for relevance. It is computed according to the formula $Pc = 0.5^N$, where N stands for the number of experts in a panel that selected the respective HR practices at least as relevant.

I-CVI = 0.36; Comp_10, I-CVI = 0.57). A similar pattern emerged in the recognition sub-dimension, in which two HR practices did not show the required level of multi-rater agreement. More specifically, this was the case for recognition that is given based on pre-determined performance criteria and an ex-post recognition given as a surprise to honor outstanding performance (Recogn_8; I-CVI = 0.36; Recogn_9, I-CVI = 0.29). In the category "others" that included increasingly popular HR practices such as gamification or i-deals, the HR scholars declared a veto against a total of six HR practices; among them were all four forms of i-deals (Others_5, I-CVI = 0.43; Others 6, I-CVI = 0.50; Others_7, I-CVI = 0.50; and Others_8, I-CVI = 0.57). HR scholars also clearly rejected the more recently introduced internal crowd working platforms as part of the intra-team HR practices (Others_1, I-CVI = 0.29). Only two from eight items were retained: the questions addressing gamification (Others 2, I-CVI = 0.71) and perks (Others_3; I-CVI = 0.71), because while reaching only a moderate level of item-level content validity, the modified Kappa coefficient of each item was above the recommended value of 0.70.

Overall, we excluded 11 HR practices because they did not achieve the required degree of validity and agreement. HR practices that showed an excellent level of multi-rater agreement (I-CVI = 0.78) were all included in further analysis, which was the case for 30 single HR practices. Various practices showed I-CVI levels below the 0.78 value with I-CVI = 0.71, yet reached the recommended value for the modified Kappa coefficient above 0.70, and were thus kept as part of the bundle. This was the case for a total of six HR practices from the whole intra-team competitive HR practices list (e.g., PerfEval_2, Comp_6). Consequently, a total of 36 HR practices agreed upon by HR scholars were used as part of the intra-team competitive HR practices construct and were included in the next stage of measurement development.

Scale-Level Content Validity. Regarding the content validity of the subscales (e.g., performance evaluation, compensation, and career development sub-scale), S-CVI/Ave scores took values that ranged from 0.54 to 1.00. The S-CVI values for performance evaluation (S-CVI/Ave = 0.87), compensation (S-CVI/Ave = 0.81), recognition (S-CVI/Ave = 0.71), promotion (S-CV/Ave = 0.90), as well as career development (S-CVI

= 0.88) and talent management (S-CVI/Ave = 0.88) were valid at the subscale level. Except for the category others, all of the sub-scales showed high (S-CVI/Ave ≥ 0.80) to medium sub-scale content validity (S-CVI/Ave ≥ 0.70). Since the majority of HR practices included in the category others were deemed as not relevant for the construct of intra-team competitive HR practices, it is not surprising that the content validity of the sub-scale others did not reach a level of scale-level validity. Thus, we excluded this category due to the given values of the S-CVI. We, however, still retained the questions addressing gamification (Others 2, I-CVI = 0.71) and perks (Others_3; I-CVI = 0.71) in our analysis. As delineated above, the two HR practices showed an appropriate level of item-level validity. Due to the exclusion of the category others, we had to reassign the two HR practices to other categories for our subsequent analysis. After a closer examination, we decided to assign the gamification item to the performance evaluation category, and the perks item to the recognition category, as they seem to fit best in these categories, compared to all the other categories available.

From the six sub-dimensions, five sub-dimensions (excluding sub-dimension others) were then used to calculate S-CVI/Ave for the overall construct of intra-team competitive HR practices. The overall content validity of the intra-team competitive HR practices bundle as the sum of the S-SVI/Ave of its sub-dimensions amounted to a construct-level content validity of 0.83. This result suggests that the proposed construct of intra-team HR practices is content-valid at a high level (S-CVI/Ave ≥ 0.80).

Inter-team Competitive HR Practices. Guided by the values of I-CVI, S-CVI/Ave, and modified Kappa values, the pool of inter-team competitive HR practices was restricted from 20 to 15 single HR practices as part of the bundle. Table 25 (Appendix C) depicts the multi-rater agreement for inter-team competitive HR practices.

Item-Level Content Validity. The level of item content validity (i.e., I-CVI) ranged from 0.79 to 1.00 for the majority of HR practices (Table 25). In the category performance evaluation, six out of seven items showed very high levels of the multi-rater agreement at the item level. Paralleling the results in the intra-team competitive HR practices bundle, researchers agreed that measuring employee outcomes with quantitative performance indicators such as team revenues or the number of sales in the team is in

itself not enough to nurture competition. It is instead the relative comparisons with other teams that seem to be decisive for the inter-team competition to emerge. The performance evaluation practice related to team goals measured with quantitative numbers was the only case where the majority of HR scholars did not agree. A similar pattern emerged with compensation practices used to foster inter-team competition. From the seven HR practices addressed, two HR practices emerged as not relevant, as indicated by low levels of the scholarly agreement at the item level. This was the case for the question that addressed compensation systems with a significant variable bonus at the team level and compensation systems based on team pay-for-performance (i.e., Comp_1 and Comp_2; I-CVI = 0.43).). In the recognition category, one HR practice was excluded, that is, the recognition given for outperforming other teams because it showed low I-CVI (Rec_3, I-CVI = 0.64).

From the 15 HR practices to be included in the next stage of measurement development, 13 practices achieved high content validity at the level of single HR practices (i.e., I-CVI ≥ 0.78). The remaining two HR practices showed a modest level of content validity (i.e., I-CVI = 0.71). However, since the modified Kappa values of these HR practices were high, analogous to the approach chosen in analyzing the intra-team HR practices, we kept these HR practices in our list and marked them for potential modification and revision if so recommended by the HR scholars in their feedback section.

Scale-Level Content Validity. The scale-level validity for the sub-dimensions of performance evaluation, compensation, recognition, and others amounted to S-CVI/Ave values of 0.84, 0.75, 0.74, and 0.71, respectively. All of the sub-dimensions, therefore, showed high to medium levels of scale-related content validity. Here again, to determine the level of overall content validity of the inter-team competitive HR practices scale, the S-CVI/Ave values of the four sub-dimensions were then combined to inform the S-CVI/Ave of the inter-team competitive HR practices content validity.[9] The resulting

[9] Since the gamification item was the only item that remained after the item-level content validity analysis without being part of a specific sub-dimension, and to provide a coherent set of HR practices at the conceptual level (analogous to intra-team HR practices approach), we decided to include the gamification HR practice as part of

values of S-CVI of 0.76 indicated that the construct of inter-team competitive HR practices is well represented by the provided list of single HR practices.

Finalizing the Pool of Competitive HR Practices. We reviewed, modified, and introduced new items based on scholarly suggestions. These suggestions were discussed with another Ph.D. candidate knowledgable in HRM research and with the first supervisor of this dissertation. In the following, we focus exclusively on the experts' suggestions included in the next version of our pool of competitive HR practices. The suggestions for improvement circled mainly around the extension of the HR practices and the modification of the existing items. Various items were added to our list or modified in wording to include additional aspects with the most significant changes highlighted below.

First, we had to exclude all types of i-deals as well as the newer form of HR practices, which is the internal crowdsourcing. Regarding the low content validity of the i-deals items, multiple HR scholars provided valuable explanations as to why i-deals should be excluded from intra-team competitive HR practices bundle. Various experts highlighted that i-deals often arise from legal accommodations, especially for employees with disabilities, and thus not purposely used to induce competition (Expert 4). HR scholars also clearly rejected the more recently introduced internal crowdsourcing platforms as part of the intra-team HR practices. One potential explanation might be that these HR practices have not yet grasped scholarly attention due to their very recent emergence (Ellmer & Reichel, 2018; Zuchowski, Posegga, Schlagwein, & Fischbach, 2016).

Moreover, various experts highlighted that it might be worthwhile to reflect the idea of limited availability for promotions, recognitions, or career development opportunities in the items. For example, they advised us to provide items that reflect the percentage of the people when addressing the aspect of limited availability of certain practices. In our view, however, such a proportion would be highly unjustified. In the literature on HR differentiation (e.g., pay differentiation and variation), where such proportions (in

performance evaluation. It perceived it to fit this category best compared to other categories within the inter-team competitive HR practices bundle.

theory) are proposed to play a significant role, studies are careful not to provide specific percentage guidelines (except the rough distinction into high and low differentiation). One of the reasons is the versatility of the topic and the individual preferences of employees towards how much differentiation is perceived as justified (e.g., Fulmer & Shaw, 2018; Gupta, Conroy, & Delery, 2012; Rofcanin et al., 2019). We, therefore, added multiple items that addressed the issue of availability to a limited number of employees raised by experts in a more general way. We incorporated several items that asked whether bonuses, training, or recognition are available only to a limited number of employees.

With the addition of these items, we also provided a closer connection to the idea of negative interdependence inherent in our conceptual definition. Specifically, if the chance to receive a bonus or pay raise is highly limited to a small proportion of employees within the same team, it becomes more likely that many will (by default) go empty-handed, which is also known as a situation of negative interdependence, where the success of one substantially impairs the chances of winning for the other (Deutsch, 1949).

Furthermore, one expert provided a valuable point by highlighting that she/he sees training as competitive, "when elite, expensive, exotic; MBA of 100.000 euros only for best people" (Expert 10). The aspect of exclusiveness is a topic that has also been visible in some of the quotes related to recognition (e.g., 'Hollywood-like' festivities or 'Oscar nights'). Consequently, we extended our career development HR practices by an additional HR practice, which closely resembled the formulation and the example provided by this expert.

Concerning modifications, various HR scholars mentioned that the aspect of publicity—the extent to which HR practices are made publicly available to be seen or judged by other team members—might be a relevant attribute of such practices to be perceived as competitive by employees. For instance, one expert highlighted that "whether co-workers are informed through, for example, announcing to employees how much promotion space there is (proportionally), that is, you can only become a professor when someone dies or retires; only 1% of our PhDs become professors here (public

announcements in career workshops by HR of university)" could be a relevant attribute. As a result, several items were modified to include explicit references to whether some HR practices were publicly unveiled in a team or between teams; for instance, employees are publicly informed that the probability of receiving formal recognition is highly rare among members of the same team (i.e., Rec_2).

An additional HR practice has also been proposed to extend the collection of inter-team competitive HR practices bundle. More specifically, an expert suggested to include a question on whether high performing teams could select replacements when vacancies arise. Given the increasing popularity and emphasis on both high-performing and self-managing teams in research and in practice (Magpili & Pazos, 2018; O'Neill & Salas, 2018), we included this HR practice into our list.

After having established our pool of HR practices, we finally formulated items for the measure of our two bundles of intra- and inter-team competitive HR practices. When translating single HR practices into specific items, we strived to ensure that the wording in the items is characterized by high adaptability to different key informants and respondents in the organization, in line with our motivation to provide a measure that could be applied equally to assess the utilized, implemented, and perceived HR practices. We paid particular attention to ensure a consistent item format. All items were, therefore, formulated in a way that fits what Beijer et al. (2019) dub as the low evaluative spectrum, that is, "items that involve fairly factual answers that nevertheless involve a certain degree of subjective interpretation" (p.8). This approach seemed to be in line with our goal to come up with a measure that should include highly paralleling items appropriate for use at different levels.

We then pilot tested this final collection of HR practices. The primary goal here was to ensure that questions addressing each HR practice were clear, concise, and unambiguous (DeVellis, 2016; Worthington & Whittaker, 2006). We pilot tested the measure with members of our department acquainted with the process of scale development (N=4) and with practitioners (N=2). Members of the department assessed items for readability and length as well as for any other sources of item ambiguity to ensure that the scientific guidelines for item development are met (e.g., DeVellis, 2016; Hardy & Ford, 2014).

Practitioners, on the other hand, helped us to ensure that our items were free from academic jargon and were easy to understand.

Specific Discussion

Scholars advocating for the distinction between different forms of latent constructs emphasize that the specification of the indicators of a formative latent construct has to be well-founded (e.g., Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003; Podsakoff et al., 2006). The identified indicators established at this research stage of measurement development provide such a foundation. More precisely, we generated a comprehensive list of competitive HR practices using a multi-method approach. We identified single HR practices that organizations deploy to fuel competition among employees, both inductively and deductively. We content validated the identified HR practices with HR scholars to establish a close connection between the concept of competitive HR practices and its manifestations.

The combination of single HR practices forming a specific bundle is a topic rarely addressed in HRM research. Bundles of HR practices often include the same choice of HR practices, without clearly addressing the questions of why and on what conceptual logic these practices were chosen over the other HR practices. Thus, various scholars in HRM called for a more conceptually grounded approach to choosing which among the many single HR practices could be combined into a coherent system (Boon et al., 2019; K. Jiang & Jake Messersmith, 2017; Lepak et al., 2006). Our study's contribution to this long-persisting issue is two-fold. First, we developed a set of HR practices and put them to a conceptual test with HR scholars to achieve a better conceptual connection between our own and other experts' definitions of HR practices to determine which practices to include in the competitive HR practices construct. Second, we identified, and content validated an extensive list of HR practices with HR scholars to provide a concise and clear connection between our concept and the respective pool of HR practices.

Our insights enhance scholarly understanding of the use of competitive HR practices in organizations. The results of our analysis reveal that organizations use a variety of HR practices to induce competition at work. This is particularly true for the intra-team

competitive HR practices bundle. More precisely, our results show that organizations do not only rely on forced ranking, up-or-out contracts, or exclusive talent management to nurture internal competition. Many more additional HR practices, such as relative feedback, public display of employee results, and exclusive recognition, to name a few, have also been proposed here.

The identification of inter-team competitive HR practices has been less fruitful. A comparatively few inter-team competitive HR practices emerged from our analysis. One potential explanation for this discrepancy might be that organizations focus more on fueling competition within teams and less so between teams to prevent silos mentality between the different teams and units in the organization. Another potential explanation is that HR professionals do not have such HR practices on their radar. The design and implementation of inter-team competitive HR practices might be addressed at a higher strategic level; for example, at the level of top-management or is even a CEO issue, and might partially be attributed to the limited strategic involvement of the HR profession at the strategic decision making (Boada-Cuerva, Trullen, & Valverde, 2019; Chadwick, Super, & Kwon, 2015). Thus, whether and how HR practitioners are involved in the formulation and the design of HR practices to inspire competition across units seems to be a promising topic worth examining in future research.

CHAPTER 6: PSYCHOMETRIC ASSESSMENT OF A MEASUREMENT INSTRUMENT OF COMPETITIVE HR PRACTICES BUNDLES

The insights from our previous empirical study seem to support our theoretical presumption that HR practices bundles, in general, and the competitive HR practices bundle, in particular, follow a formative-formative epistemic logic with two identified competitive HR practices systems: the intra-team and inter-team competitive HR practices bundles. Whether a higher-order construct is conceptualized as reflective or formative, has a bearing on how it is to be assessed and validated empirically. Formative measures require a different statistical approach from reflective constructs; we use the Partial Least Squares Structural Equation Modeling (PLS-SEM), which is recommended for formative structured measures (e.g., Hair et al., 2016; Hair, Hult, Ringle, Sarstedt, & Thiele, 2017; Hair, Sarstedt, et al., 2017). To psychometrically substantiate whether intra-team competitive and inter-team competitive HR practices are indeed formative higher-order constructs, we rely on previous guidelines from the formative-reflective measurement literature (Hair, Sarstedt, et al., 2017; Ringle, Sarstedt, Mitchell, & Gudergan, 2020; Sarstedt, Hair, Cheah, Becker, & Ringle, 2019). We use PLS-SEM since it is increasingly acknowledged as a method particularly appropriate for the assessment of formative types of measures (Hair et al., 2016; Hair, Hult, et al., 2017; Hair et al., 2011). For a detailed discussion about the advantages of PLS-SEM over the covariance-based SEM for formative constructs, consult (Hair et al., 2016; Hair et al., 2011; Sarstedt et al., 2019). To conduct the PLS-SEM analysis, we rely on the SmartPLS 3.0 software.

We conduct two consecutive psychometric studies to determine the proposed higher-order structure of our newly introduced bundles of intra- and inter-team competitive HR practices. Both studies rely on large-N surveys with fulltime workers from various countries acquired via the Prolific Academics panel data pool (Palan & Schitter, 2018). Before testing the predictive validity of our measure on a different data sample (Study 4), we first establish the measurement model of intra- and inter-team competitive HR practices (Study 3). For this study, we assess and focus on the employee-centered version of our measurement. We do so because of the amplifying evidence that demonstrates a gap between the utilized HR practices and employee outcomes. This

evidence suggests that employee perceptions of HR practices are a more immediate, and thus are a better predictor of employee attitudes and behaviors at work (e.g., Boon, Den Hartog, Boselie, & Paauwe, 2011; Jensen et al., 2013).

In this chapter, we finally address the psychometrical properties of the bundle of competitive HR practices and empirically test their impact on employee outcomes.

Study 3: Convergent Validation of The Intra- and Inter-Team Competitive HR Practices Measure

In contrast to measurement criteria used for reflective measures, the higher-order constructs with formative indicators require a different approach to validation (Hair et al., 2016; Sarstedt et al., 2019). Metrics such as Cronbach's alpha or exploratory factor analytic procedures are less suited for formative constructs (Hair et al., 2016; Sarstedt et al., 2019). Instead, related mainly to formative higher-order constructs, researchers recommend proceeding as follows: starting psychometric assessment at the lowest level of the construct (Hair, Sarstedt, et al., 2017; Ringle et al., 2020; Sarstedt et al., 2019). The psychometric assessment examines (1) the convergent validity of the lower-order components with a global item that summarizes its meaning, (2) the degree of collinearity between the indicators of each respective lower-order component, and (3) relevance and significance of the indicators using the bootstrapping procedure (Hair, Sarstedt, et al., 2017; Sarstedt et al., 2019). After that, we apply the same procedure to the higher-level analysis, that is, to the pattern of relationships concerning the higher-order construct under investigation and its lower-order components (Hair, Sarstedt, et al., 2017; Sarstedt et al., 2019). A short overview of the method is detailed below.

The first step in the formative measurement assessment is to establish the convergent validity of the lower-order components. Convergent validity has a slightly different meaning for formative constructs than for the reflective, scale-based constructs. In a formative paradigm, convergent validity reflects the extent to which a formative measure correlates with an alternative and reflective measure of the same phenomenon (e.g., Diamantopoulos & Winklhofer, 2001; Hair, Sarstedt, et al., 2017). For the assessment of convergent validity, the literature on formative measurement recommends

using a global item[10] that "summarizes" the essence of the lower-order component (Cheah et al., 2018; Diamantopoulos & Winklhofer, 2001; Sarstedt et al., 2019). Convergent validity is established if the lower-order components of the higher-order construct showed a significant and strong correlation with this global item. Path coefficients above 0.7 and the values of explained variance R^2 above 0.5 (for more complex models of the adj $R^2 \geq 0.5$) are the recommended cut-off criteria, which indicate the convergent validity of the formative low-order component under consideration (e.g., Hair et al., 2016; Sarstedt et al., 2019).

The second step in the process is to examine the collinearity between the indicators of a given lower-order component by calculating the indicator's variance inflation factor (VIF) (Coltman et al., 2008; Hair et al., 2016; Jarvis et al., 2003; Ringle et al., 2020). The value of VIF should not exceed the critical threshold of 5.0, while the values below 3.3 indicate a very low of collinearity between the indicators of the lower-order component (Diamantopoulos & Siguaw, 2006; Hair et al., 2016; Hair et al., 2011).

The third step is to examine the indicator weights and loadings for their relevance and significance via bootstrapping following the recommended number of bootstraps of N=5000 samples (Hair et al., 2016). The bootstrapping technique allows establishing the significance of weights and loadings based on bias-corrected and accelerated confidence intervals (BCas), which adjust potential skewness in the data (Aguirre-Urreta & Rönkkö, 2018; Hair et al., 2016). The significant indicator weights show that the indicators possess relative importance for the measurement of the construct. In situations where indicator weights are not significant, they, however, "should not automatically be interpreted as indicative of poor measurement model quality" Hair et al. (2016, p. 147). Instead, the researcher should proceed with the examination of the indicator loadings, which reflect the total contribution of an indicator to the lower-order component. If the indicator loadings of a low-order component are both high (i.e., ≥ 0.5) and significant

[10] While highly problematic when used as stand-alone measures of a construct, single-items were shown to be appropriate for convergent validity assessment of formative constructs (Cheah, Sarstedt, Ringle, Ramayah, & Ting, 2018).

($p \geq 0.05$), the indicators should definitely be retained in the measurement instrument (Hair et al., 2016; Sarstedt et al., 2019). Furthermore, the formative measurement theory advises against excluding formative indicators based on statistical data alone. Formative indicators should be excluded from further analysis only if such indicators do not add or not change the overall conceptual domain of the construct. Even if faced with low indicator weights, the decision to eliminate formative indicators should always be guided by theoretical reasoning (Diamantopoulos & Winklhofer, 2001; Hair et al., 2016; Jarvis et al., 2003).

After having established the quality criteria of the lower-level components, the steps described above are repeated at the level of the higher-order construct and its relationship with the lower-components (Hair, Sarstedt, et al., 2017; Ringle et al., 2020; Sarstedt et al., 2019).

Data Collection

Both intra- as well as inter-team competitive HR practices were assessed using a response format that ranged from 1 (not at all) to 6 (to a very large extent). We also included the "do not know" response category because employees are not always aware of the existence and use of specific HR practices in their organizations (e.g., Arthur & Boyles, 2007; Den Hartog et al., 2013; Liao et al., 2009). In this way, participants were able to indicate that they were not aware of the use of the specific practice in their organization. Excluding the "do not know" category might undermine the validity and might, therefore, lead to biased conclusions. For example, an HR practice is used only to a small extent, which (in reality) is not the case. All items were formulated in a positive direction, that is, no negative or reversed expressions were used in the indicators of competitive HR practices to prevent any ambiguity in wording through the introduction of negatives (e.g., Weijters, Geuens, & Schillewaert, 2009).

To be able to assess the convergent validity of our measures, we needed to include multiple global items both at the lower-order components as well as at the higher-order construct. Such global items should summarize the nature of the construct they address (Cheah et al., 2018; Diamantopoulos & Winklhofer, 2001; Sarstedt et al., 2019). In line

with the methodological requirements (Hair, Risher, Sarstedt, & Ringle, 2018; Sarstedt et al., 2019), we formulated one global item for each of the low-order components and an overall global item to assess the higher-order construct. We used identical expressions when formulating global items to ensure coherence and to combat potential biases due to semantic differences between the items. Concerning the intra-team competitive HR practices bundle, six global items addressed its sub-dimensions, and one global item addressed the overall higher-order construct. For example, the global item for the performance evaluation sub-dimension read, "All in all, performance evaluation practices used in my organization lead employees to view fellow team members as competitors." The higher-order construct of the intra-team competitive HR practices bundle was assessed by the global item that goes as follows: "Overall, the work practices used to manage employees in my organization lead employees to view fellow team members as competitors." For inter-team competitive HR practices bundle, three global items, each reflecting a specific sub-dimension, were used (i.e., performance evaluation, compensation, and recognition). A sample global item for the sub-dimension performance evaluation at the inter-team level is: "All in all, performance evaluation practices used in my organization lead teams to view other teams as competitors". The global item for the higher-order construct of inter-team competitive HR practices bundle was addressed with the following item: "Overall, the work practices used to manage teams in my organization lead teams to view other teams as competitors.".

Our final questionnaire included items for HR practices, the respective global items required to establish convergent validity of formative-formative higher-order constructs (Ringle et al., 2020; Sarstedt et al., 2019). We also included some socio-demographic questions to gather more information on the composition of our sample (tenure, organizational size, gender, or educational level). As mentioned above, Cronbach's alpha metrics do not apply to formative constructs (Hair et al., 2016), and are thus not reported here.

Sample. To test the convergent validity of our measure, we relied on surveys with full-time workers from western countries, which are acquired via the Prolific Academics panel data pool (Palan & Schitter, 2018). Prolific Academics is a participant pool

developed to run scientific tailored studies (Palan & Schitter, 2018). Panel data pools, such as Prolific Academics, are often used in measurement validation studies (Porter, Outlaw, Gale, & Cho, 2019). However, to generate high-quality responses, the selection of participants needs careful handling. We follow current methodological recommendations to ensure this in our data collection (Buhrmester, Talaifar, & Gosling, 2018; Cheung, Burns, Sinclair, & Sliter, 2017; Porter et al., 2019). Accordingly, we restricted our participants to full-time, high-reputation employees (i.e., approvement rate above 90%) who speak English as a native language or at a high proficiency level and come from Western countries (e.g., Canada, US, UK, Switzerland, the Netherlands). Another requirement was that participants were part of a team; otherwise, they would not be able to provide meaningful/reliable responses to our study questions. Furthermore, we ensured that the use of bots, that is, programs artificially generating survey responses (Dupuis, Meier, & Cuneo, 2019), does not jeopardize the collected data by conducting attention checks. Participants that did not pass the attention checks (N=3) were excluded from our analysis (DeSimone, Harms, & DeSimone, 2015; Edwards, 2019; Meade & Craig, 2012).

Quality Checks. After completing the data collection phase, we needed to examine the data for potential problems with the quality of responses. Before proceeding with statistic data mining, we first needed to conduct respondents' quality checks (DeSimone et al., 2015; Edwards, 2019; Meade & Craig, 2012). Two of the participants had to be excluded as a result of this assessment. We then assessed whether the missing data posed a problem by calculating the Little MCAR test. The Little's MCAR test results were not significant, indicating that the missing values were missing at random (Chi-Square = 26.686, DF = 85, Sig. = 1.000). Furthermore, we visually examined the response patterns of the "do not know" category to examine whether some of the respondents misused this category to provide careless responses (e.g., rushing through the survey). Our visual examination revealed no cases in which the "do not know" category was used systematically to give careless answers to our measure.

After this step, we turned our attention to the distributional characteristics of our variables. We checked whether the values of the indicators followed a normal

distribution for the sake of completeness by conducting the Kolmogorov-Smirnov Test. The test showed that all of our indicators were non-normally distributed. Non-normality is, however, not a concern in PLS-SEM based analysis. PLS-SEM is a non-parametric and bootstrapping based approach that does not require data to be normally distributed (Hair et al., 2016).

We checked for the presence of influential outliers in the data by following the recommendations by Aguinis, Gottfredson, and Joo (2013). We calculated Cooks D, centered leverage, and studentized deletion residuals (SDR)[11] in line with the recommendation to rely on various criteria conjointly (Aguinis et al., 2013). No respondents were identified as an outlier concerning all three criteria. Respondents that were identified as an outlier by either of the approaches (N=35) were, nevertheless, examined in detail to check for potential response biases (e.g., acquiescence) or response behaviors that were implausible in reality via visual case examination. A detailed examination showed no particular unusual responses, so we retained the 35 participants for the proceeding analysis. Our final data set consisted of N=383 respondents.

Sample Characteristics. In this study, we surveyed a sample of 383 full-time workers recruited via the Prolific Academics data panel[12]. Out of the 383 employees, 210 (54.8%) were female, 172 (44.9%) were male. On average, respondents were 32.91 years old (SD = 8.80) and worked for 5.38 (SD = 5.23) years for the organization. The majority had a relatively high level of education: 3.1% of the participants with a doctoral degree, 18.3% with a master's degree, 43.3% with a bachelor's degree, 20.9% were high school graduates. 11.5% of respondents were in an apprenticeship or vocational training, 2.9% of respondents have received compulsory schooling. Employees came from organizations of various sizes. The majority of respondents (N=196, 51.2%) worked in

[11] For our sample (N=383, k=76) the cut-off value of Cooks D was 4/383=0.01, for centered leverage it was (2 * 76)/383 = 0.39; and for the cutoff values of SDR according to the t-statistics value of α= 0.01, SDR $\geq$ 2.576 indicated potential outliers.

[12] Before collecting the data, we conducted a power analysis using the G*Power software to establish the minimum sample size appropriate for statistical analysis in order to maximize the chances to reject the null hypothesis correctly. Given the number of indicators (N =87) included in our analysis, we needed to have a sample size of at least N= 193 participants.

organizations that comprised at least 250 employees, 84 (21.9%) respondents worked for organizations with between 10 and 49 employees. A total of 73 employees (19.1%) worked in medium-sized organizations that have a population of between 50 to 249 employees, and the rest (7.8%) worked in small organizations with a maximum of 49 employees.

Data Analysis and Results

Our analysis follows the recommendations for the measurement assessment of formative higher-order constructs highlighted at the method section (Hair, Sarstedt, et al., 2017; Ringle et al., 2020; Sarstedt et al., 2019). We do this for both the intra-team and inter-team competitive HR practices. The next section describes the results of the assessment of the measurement model for intra-team and inter-team competitive HR practices.

Intra-team competitive HR Practices. We first assessed the convergent validity of the lower-order components of intra-team competitive HR practice with the global item (Table 5). The result showed that the path coefficients and the value of variance explained by lower-order components in the respective global items were highly significant for all, except for one lower-order component, i.e., the promotion component ($R^2 \geq 0.5$ and $\beta \geq 0.7$, $p < 0.001$). The components performance evaluation ($R^2 = 0.58$; $\beta = 0.76$, $p < 0.001$), compensation ($R^2 = 0.60$; $\beta = 0.78$), recognition ($R^2 = 0.60$; $\beta = 0.74$, $p < 0.001$), career development ($R^2 = 0.58$; $\beta = 0.76$, $p < 0.001$), as well as talent management ($R^2 = 0.595$; $\beta = 0.77$, $p < 0.001$) each respectively explained more than 50 percent of the variance as required. In contrast, promotion amounted to a β-value of 0.70 and R^2-value of 0.49 ($p < 0.001$). The path coefficient of promotion was highly significant, the explained variance of the promotion component was just slightly below the recommended value of $R^2 = 0.50$. We kept the promotion component as part of our measure. We did so because promotion emerged as an important theoretical aspect in our previous analysis of content validity with HR scholars and the literature on formative constructs advises against the elimination of parts of the construct based on statistical coefficients if established as important conceptually (e.g., Diamantopoulos &

Winklhofer, 2001; Hair et al., 2016), as it was the case with HR scholarly assessment in the previous chapter.

The test for multicollinearity revealed that multicollinearity was not present in the data. Most indicators of the intra-team competitive HR practices construct showed values that ranged from 1.209 to 2.900 (Table 6) and thus were clearly below the conservative VIF value of 3.3 (Hair et al., 2018; Ringle et al., 2020). This was the case for all, but one single indicator in the low component of talent management, which showed a VIF value of 3.569. While slightly above the more rigorous cut-off value of 3.3, it did not exceed the critical value of 5.0 (e.g., Hair et al., 2016; Hair et al., 2011). We, therefore, kept this item as part of the talent management lower-order component.

Table 5. Results of the Item-level Convergent Validity Analysis of Intra-team Competitive HR Practices

	Path Coefficients	**R Square**	**R Square Adjusted**	**BCas**	
				2.5%	**97.5%**
LOC_PerfEv -> PerfEv_Global Item	**0.760*** **	0.578	0.577	0.693	0.801
LOC_Comp -> Comp_Global Item	**0.778*** **	0.606	0.605	0.705	0.820
LOC_Recogn -> Recogn_Global Item	**0.774*** **	0.599	0.597	0.685	0.818
LOC_Promotion -> Promotion_Global Item	**0.699*** **	0.488	0.487	0.617	0.756
LOC_CarDev -> CarDev_Global Item	**0.764*** **	0.583	0.582	0.670	0.826
LOC_ TalMan -> TalMan_Global Item	**0.771*** **	0.595	0.594	0.685	0.824

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: LOC = lower-order component, PerfEv=Performance Evaluation, Comp = Compensation, Recogn = Recognition, Prom = Promotion, CarDev = Career Development, TalMan = Talent Management, BCas = bias-corrected and accelerated confidence intervals.

We assessed the significance and relevance of the indicator weights and loadings through bootstrapping (N=5000 samples). The results showed the variation in the degrees of indicator weights, loadings, and the respective significance levels for each lower-order component. In each of the lower-order components, various items showed non-significant indicators weights. For example, in the performance evaluation component, seven out of ten items did not show the required level of relative importance judged by the value of the indicator weights and their significance. Similar patterns were present for all other low-order components. Hence, we examined the respective indicator loadings and their significance.

In contrast to the indicator weights, all indicator loadings are significant, being above the recommended cut-off metric (i.e., indicator loadings ≥ 0.5; $p \leq 0.05$). Therefore, each of the indicators still contributed to the respective lower-order construct in absolute terms. We, therefore, retained them as part of the measurement instrument of intra-team competitive HR practices. For brevity reasons, we refrain from reporting the results of every single item here. A detailed depiction of the results of each indicator's value can be found in Table 6.

Table 6. Collinearity, Significance & Relevance Analysis of the Indicators of the Intra-team Competitive HR Practices

Indicator -> LOC Component	VIF	Weights	BCas 2.5%	97.5%	Loadings	BCas 2.5%	97.5%
PerfEv_1 -> LOC_PerfEv	1.209	0.038	-0.048	0.123	0.365***	0.254	0.470
PerfEv_2 -> LOC_PerfEv	1.630	0.048	-0.084	0.174	0.562***	0.445	0.676
PerfEv_3 -> LOC_PerfEv	1.426	0.106	-0.005	0.238	0.522***	0.388	0.655
PerfEv_4 -> LOC_PerfEv	1.152	-0.082	-0.172	0.009	0.278***	0.153	0.400
PerfEv_5 -> LOC_PerfEv	1.665	0.052	-0.071	0.171	0.610***	0.506	0.704
PerfEv_6 -> LOC_PerfEv	1.462	0.059	-0.051	0.183	0.536***	0.426	0.653
PerfEv_7 -> LOC_PerfEv	2.137	0.268**	0.108	0.448	0.822***	0.747	0.896
PerfEv_8 -> LOC_PerfEv	1.985	0.058	-0.073	0.199	0.689***	0.603	0.780
PerfEv_9 -> LOC_PerfEv	2.097	0.264***	0.121	0.420	0.764***	0.685	0.845
PerfEv_10 -> LOC_PerfEv	2.023	0.455***	0.271	0.627	0.882***	0.816	0.938
Comp_1 -> LOC_Comp	2.127	0.022	-0.091	0.134	0.578***	0.458	0.682
Comp_2 -> LOC_ Comp	2.563	0.027	-0.102	0.164	0.641***	0.522	0.736
Comp_3 -> LOC_ Comp	2.667	0.373***	0.218	0.554	0.862***	0.773	0.915
Comp_4 -> LOC_ Comp	2.305	0.138	-0.032	0.292	0.669***	0.553	0.755
Comp_5 -> LOC_ Comp	2.306	0.114	-0.080	0.353	0.714***	0.572	0.820
Comp_6 -> LOC_ Comp	2.146	0.161**	0.046	0.288	0.729***	0.631	0.801
Comp_7 -> LOC_ Comp	2.900	0.337***	0.140	0.547	0.854***	0.755	0.914
Comp_8 -> LOC_ Comp	2.231	-0.146	-0.300	0.013	0.567***	0.438	0.673
Comp_9 -> LOC_ Comp	1.895	0.215**	0.058	0.382	0.711***	0.578	0.808
Recogn_1 -> LOC_Recogn	2.427	0.437***	0.265	0.629	0.878***	0.827	0.938
Recogn_2 -> LOC_Recogn	1.717	0.003	-0.107	0.114	0.566***	0.453	0.675

(continues)

Indicator -> LOC Component	VIF	Weights	BCas		Loadings	BCas	
			2.5%	97.5%		2.5%	97.5%
Recogn_3 -> LOC_Recogn	2.159	0.159	-0.010	0.333	0.773***	0.673	0.869
Recogn_4 -> LOC_Recogn	2.099	0.025	-0.127	0.185	0.698***	0.586	0.806
Recogn_5 -> LOC_Recogn	1.816	-0.063	-0.192	0.060	0.549***	0.424	0.676
Recogn_6 -> LOC_Recogn	1.943	0.002	-0.156	0.166	0.641***	0.527	0.755
Recogn_7 -> LOC_Recogn	2.208	0.199**	0.049	0.352	0.784***	0.700	0.862
Recogn_8 -> LOC_Recogn	1.986	0.287***	0.136	0.451	0.789***	0.689	0.880
Recogn_9 -> LOC_Recogn	1.759	0.177*	0.030	0.337	0.709***	0.595	0.814
Prom_1 -> LOC_Prom	1.223	0.050	-0.072	0.175	0.447***	0.303	0.592
Prom_2 -> LOC_ Prom	2.376	0.443***	0.277	0.609	0.900***	0.841	0.947
Prom_3 -> LOC_ Prom	2.190	0.342***	0.193	0.500	0.837***	0.765	0.902
Prom_4 -> LOC_ Prom	1.766	0.083	-0.073	0.241	0.695***	0.588	0.796
Prom_5 -> LOC_ Prom	1.531	0.328***	0.181	0.489	0.717***	0.598	0.825
CarDev_1 -> LOC_CarDev	2.459	0.299**	0.122	0.507	0.858***	0.791	0.924
CarDev_2 -> LOC_ CarDev	2.505	0.320***	0.156	0.501	0.873***	0.798	0.936
CarDev_3 -> LOC_ CarDev	1.754	0.248**	0.088	0.417	0.780***	0.674	0.869
CarDev_4 -> LOC_ CarDev	1.879	0.092	-0.039	0.214	0.718***	0.617	0.805
CarDev_5 -> LOC_ CarDev	1.854	0.264***	0.117	0.421	0.774***	0.664	0.869
TalMan_1 -> LOC_TalMan	2.081	0.022	-0.138	0.183	0.707***	0.605	0.801
TalMan_2 -> LOC_ TalMan	2.855	0.343***	0.153	0.553	0.875***	0.807	0.931
TalMan_3 -> LOC_TalMan	2.689	0.342***	0.175	0.519	0.898***	0.841	0.946
TalMan_4 -> LOC_TalMan	3.569	0.154	-0.129	0.407	0.881***	0.803	0.944
TalMan_5 -> LOC_TalMan	2.466	0.288*	0.061	0.543	0.835***	0.732	0.916

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: Bootstrapping N=5000, VIF = variance inflation factor, LOC = lower-order component, PerfEv=Performance Evaluation, Comp=Compensation, Recogn = Recognition, Prom= Promotion, CarDev = Career Development, TalMan= Talent Management, BCas = 95% bias-corrected and accelerated confidence intervals.

We then turned our attention to the assessment of the intra-team competitive HR practices measure at the level of the higher-order construct. The results of the convergent validity assessment in Table 7 show that the higher-order construct intra-team competitive HR practices has a significant and high association with the respective global item ($\beta = 0.808$, $p < 0.001$) and explains 65% of the variance in this item ($R^2 = 0.652$), with both metrics in line with the guideline of $R^2 \geq 0.5$ and $\beta \geq 0.7$. Multicollinearity between the low-order components of the intra-team competitive HR practices was not an issue (Table 8). The VIF values ranged between 2.075 to 2.798 and were clearly below the conservative cut-off value of 3.3 (e.g., Ringle et al., 2020).

Table 7. Results of the Higher-Order Construct Convergent Validity Analysis for Intra-team Competitive HR Practices

	Path Coefficients	**BCas**	
		2.5%	**97.5%**
Intra-Team HOC--> Intra-Team_Global Item	0.808***	0.753	0.821
R^2	0.652***	0.567	0.674
Adj R^2	0.651***	0.566	0.673

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.
Note: Bootstrapping N=5000, HOC = higher-order component, BCas = 95% bias-corrected and accelerated confidence intervals.

The estimation of relevance and significance of weights and loadings between the lower-order components and the higher-order construct with bootstrapping yields a more nuanced picture (Table 8). Performance evaluation ($\beta = 0.368$ $p \leq 0.001$), recognition ($\beta = 0.322$, $p \leq 0.01$), and promotion lower-order components ($\beta = 0.225$, $p \leq 0.01$) were significant. However, the weights for compensation, career development, and talent management lower-order components were non-significant. They thus required an additional/subsequent examination of the loadings (i.e., bivariate correlations between the higher-order construct and the lower-order components) to judge whether these

components should still be retained as part of the higher-order construct (Sarstedt et al., 2019). The loadings of compensation (r = 0.803, p≤0.001), career development (r = 0.783; p≤0.001), and talent management (r = 0.774, p≤ 0.001) with the higher-order construct of intra-team competitive HR practices were all significant at the one-percent level and above the recommended guideline of r > 0.5. Thus, they were retained as lower-order components of intra-team competitive HR practices (Hair et al., 2016; Sarstedt et al., 2019). Overall, these statistical evidence supports our theoretical argument that intra-team competitive HR practices indeed represent a formative higher-order construct.

Table 8. Collinearity, Significance & Relevance Analysis of the Higher-Order Construct of Intra-team Competitive HR Practices

	VIF	**Weights**	**BCas**		**Loadings**	**BCas**	
			2.5%	**97.5%**		**2.5%**	**97.5%**
LOC_ CarDev -> HOC_Intra-Comp	2.075	0.065	-0.066	0.202	0.730***	0.633	0.818
LOC__Prom -> HOC_Intra-Comp	2.029	0.225**	0.099	0.398	0.789***	0.700	0.867
LOC_ TalMan -> HOC_Intra-Comp	2.225	0.111	-0.042	0.272	0.774***	0.693	0.855
LOC_Comp -> HOC_Intra-Comp	2.581	0.084	-0.064	0.229	0.803***	0.718	0.871
LOC_PerfEv -> HOC_Intra-Comp	2.186	0.368***	0.234	0.525	0.871***	0.811	0.922
LOC_Recogn -> HOC_Intra-Comp	2.798	0.322**	0.165	0.502	0.883***	0.824	0.933

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: LOC = lower-order component, PerfEv=Performance Evaluation, Comp = Compensation, Recogn = Recognition, Prom = Promotion, CarDev = Career Development, TalMan = Talent Management, BCas = 95% bias-corrected and accelerated confidence intervals.

Inter-team competitive HR Practices. Our convergent validity test for the lower-order components of the higher-order construct of inter-team competitive HR practices proceeded analogously to the steps highlighted concerning intra-team competitive HR practices. It is, however, important to note that we excluded two indicators (i.e.,

indicators contests and vacancies) from our measurement assessment procedure due to theoretical and empirical reasons. Theoretically, the inclusion of one of the other lower-components was not an option since these indicators did not have another lower-order component to fit in. From an empirical point of view, such inclusion would also contradict and potentially even bias the relationships of other indicators in the respective lower-order components.

The assessment of convergent validity at the level of the lower-order components showed that above 64% of the variation in the global item was explained by the respective lower-order components (Table 9). This was the case for all three lower-order components, that is, for performance evaluation ($R^2 \geq 0.69$ and $\beta \geq 0.83$, $p < 0.001$), for compensation ($R^2 \geq 0.70$ and $\beta \geq 0.84$, $p < 0.001$), and for recognition ($R^2 \geq 0.65$ and $\beta \geq 0.81$, $p < 0.001$). Accordingly, they all achieved the required level of convergent validity since they are clearly above the recommended guideline (i.e., $R^2 \geq 0.5$ and $\beta \geq 0.7$, $p < 0.001$).

Table 9. Results of the Item-level Convergent Validity Analysis of Inter-Team Competitive HR Practices

	Path Coefficients	**R Square**	**R Square Adjusted**	**BCas**	
				2.5%	**97.5%**
LOC_PerfEv -> PerfEv_Global Item	0.833***	0.694	0.693	0.782	0.873
LOC_Comp -> Comp_Global Item	0.835***	0.697	0.697	0.763	0.885
LOC_Recogn -> Recogn_Global Item	0.805***	0.648	0.648	0.738	0.852

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: LOC = lower-order component, PerfEv=Performance Evaluation, Comp = Compensation, Recogn = Recognition, BCas = 95% bias-corrected and accelerated confidence intervals.

Proceeding with the multicollinearity analysis of the indicators, the values of the VIF ranged from 2.377 to 4.291 for the indicators of the performance evaluation, from 2.001 to 4.174 for the indicators of the compensation, and from 2.132 to 3.101 for the

indicators of the recognition low-order component (Table 10). Again, we did not identify any values of the variance inflation factor that exceeded the critical guideline of 5.0, and thus would deem multicollinearity a substantial problem. All indicators were kept as part of the construct for being below the maximum accepted value of VIF of 5.0. (Hair et al., 2018; Ringle et al., 2020).

The assessment of the significance and relevance of indicator weights and loadings with bootstrapping (N=5000 samples) also provided support for the formative nature of the indicators. The indicator weights of all indicators were significant, as indicated by p-values < 0.001 (Table 10) and, therefore, were all retained as part of the lower-order components. Since the indicator weights showed the required level of significance, there was no further need to examine the indicator loadings (Hair et al., 2016).

In the next step, we investigated the psychometric quality of inter-team competitive HR practices as a higher-order construct. We addressed the measurement structure of the inter-team competitive HR practices by exploring its relationship with its lower-order components (Hair, Sarstedt, et al., 2017; Sarstedt et al., 2019). As delineated above, in our lower-order assessment, the items of contest and vacancy were excluded, as they did not have a theoretically fitting lower-order component and a respective global item. While this was appropriate in the collinearity assessment, they were included in this psychometric assessment of the entire construct to see if they contribute to the higher construct level. This was done by building an "artificial", not theoretically derived lower-order component named other. This component was also part of the overall assessment of the inter-team competitive HR practices for multicollinearity and examination of weights and loadings via bootstrapping (e.g., Hair, Sarstedt, et al., 2017; Sarstedt et al., 2019).

Our examination of convergent validity of the inter-team competitive HR practices as a higher-order construct showed a strong and significant association with the global item ($\beta = 0.84$, $p < 0.001$), and explained 70% of the variance in the global item ($R^2 = 0.70$ $p < 0.001$). Table 11 depicts the assessment of convergent validity at the level of the higher-order construct.

Table 10. Collinearity, Significance & Relevance Analysis of the Indicators of the Inter-team Competitive HR Practices

Indicator -> LOC Component	VIF	Weights	BCas	
			2.5%	97.5%
PerfEv_1 -> LOC_PerfEv	2.848	0.177***	0.164	0.192
PerfEv_2 -> LOC_PerfEv	2.541	0.152***	0.138	0.166
PerfEv_3 -> LOC_PerfEv	3.211	0.161***	0.149	0.173
PerfEv_4 -> LOC_PerfEv	3.273	0.174***	0.162	0.187
PerfEv_5 -> LOC_PerfEv	4.291	0.170***	0.159	0.181
PerfEv_6 -> LOC_PerfEv	4.233	0.173***	0.163	0.185
PerfEv_7 -> LOC_PerfEv	2.377	0.163***	0.150	0.177
Comp_1 -> LOC_Comp	3.423	0.295***	0.274	0.318
Comp_2 -> LOC_ Comp	4.174	0.316***	0.296	0.340
Comp_3 -> LOC_ Comp	2.264	0.271***	0.250	0.295
Comp_4 -> LOC_ Comp	2.001	0.257***	0.233	0.278
Recogn_1 -> LOC_Recogn	3.055	0.162***	0.150	0.176
Recogn_2 -> LOC_Recogn	2.806	0.142***	0.128	0.156
Recogn_3 -> LOC_Recogn	2.502	0.167***	0.149	0.188
Recogn_4 -> LOC_Recogn	2.132	0.140***	0.121	0.159
Recogn_5 -> LOC_Recogn	2.862	0.153***	0.140	0.168
Recogn_6 -> LOC_Recogn	2.268	0.136***	0.119	0.154
Recogn_7 -> LOC_Recogn	3.101	0.172***	0.157	0.190
Recogn_8 -> LOC_Recogn	2.493	0.159***	0.142	0.177

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: Bootstrapping N=5000, VIF = variance inflation factor, LOC = lower-order component, PerfEv = Performance Evaluation, Comp = Compensation, Recogn = Recognition, BCas = 95% bias-corrected and accelerated confidence intervals.

Table 11. Results of the Higher-Order Construct Convergent Validity Analysis for Inter-team Competitive HR Practices

	Path Coefficients	BCas	
		2.5%	97.5%
Inter-Team HOC--> Inter-Team_Global Item	0.837***	0.784	0.874
R^2	0.700***	0.615	0.764
Adj R^2	0.699***	0.621	0.768

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: Bootstrapping N=5000, HOC = higher-order component, BCas = 95% bias-corrected and accelerated confidence intervals.

The multicollinearity assessment between the lower-order components revealed that the collinearity was not a concern. All lower-order components, that is, compensation (i.e., VIF = 2.77), performance evaluation (i.e., VIF = 2.19), recognition (i.e., VIF = 4.53), as well as the others (i.e., VIF = 2.89) were below the critical threshold of VIF = 5.0 (Hair et al., 2016). Finally, bootstrapping (N=5000 samples) provided additional evidence that the construct of inter-team competitive HR practices is indeed formative at the higher-level as well. Specifically, the weights (i.e., path coefficients going from the respective lower-order component towards the higher-order construct) were significant for all lower-order components. Performance evaluation ($\beta = 0.38$; $p < 0.001$) and recognition practices ($\beta = 0.42$; $p < 0.001$) emerged as relatively important contributors to the inter-team competitive HR practices construct, followed by the compensation ($\beta = 0.21$; $p < 0.001$) and the category other ($\beta = 0.10$; $p < 0.001$). All weights showed the required level of significance; there was thus no need to examine the respective loadings (e.g., Hair et al., 2016). Table 12 provides a detailed overview of both the VIF-values and the weights significance test.

Overall, in our theoretical argument, we proposed that the construct of competitive HR practices is characterized by a formative-formative relationship among the higher-order construct, its lower-order components, and the indicators. The results of this study now also provide statistical evidence that the bundle of competitive HR practice is based on a formative-formative higher-order logic.

Table 12. Collinearity, Significance & Relevance Analysis of the Higher-Order Construct of Inter-team Competitive HR Practices

	VIF	**Weights**	**BCas**	
			2.5%	**97.5%**
Inter_Compensation -> HOC Inter-Competitive HR	2.761	0.213***	0.197	0.229
Inter_PerfEvaluation -> HOC Inter-Competitive HR	2.191	0.384***	0.360	0.411
Inter_Recognition -> HOC Inter-Competitive HR	4.538	0.419***	0.398	0.440
Inter_Other -> HOC Inter-Competitive HR	2.894	0.100***	0.090	0.110

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: LOC = lower-order component, PerfEv=Performance Evaluation, Comp = Compensation, Recogn = Recognition, BCas = 95% bias-corrected and accelerated confidence intervals.

Study 4: Examination of Predictive Validity of Intra-Team Competitive HR Practices Bundle

In our previous study, we established the psychometric qualities of measures for both intra- and inter-team competitive HR practices. Therefore, we can now examine the ability of our measure of intra-team competitive HR practices to predict employee outcomes in organizations. We focus on intra-team competitive HR practices, malicious envy, benign envy, and inspiration as potential predictors of knowledge hiding in organizations. Intra-team competitive HR practices are chosen because they operate at the individual level, as does our conceptual model (Chapter 3). They evoke social comparison processes and emotions that influence how individuals behave toward their peers when there is an internal competition at the individual level in a team. However, they do not address how inter-team competitive HR practices might impact outcomes at the group level. The introduction of cognitive and affective processes at the group level requires a different theoretical approach from the one based on social comparisons; for example, the emergence of intergroup emotions through emotion contagion (Kozlowski & Chao, 2012; Mackie & Smith, 2015, 2018).

On the outcome side, we focus on knowledge hiding, as a specific form of counterproductive work behavior that aims at concealing information from other team members (C. Connelly, Zweig, Webster, & Trougakos, 2012). Our rationale for focusing on knowledge hiding is twofold. First, it is a construct that might lead to pronounced detrimental consequences for organizations. Concealing knowledge from one's team members harms not only individual performance (e.g., Wang, Han, Xiang, & Hampson, 2019), but has also far-reaching consequences on the team and the organization by harming the employee creativity (Černe, Nerstad, Dysvik, & Škerlavaj, 2014) and innovative capacity (Černe, Hernaus, Dysvik, & Škerlavaj, 2017). Depending on whether playing dumb or evasive hiding guide the hider's behaviors, they seriously undermine the long-term relationship dynamics in teams by sparking a downward spiral of withdrawal or even retaliation (C. Connelly & Zweig, 2015; Škerlavaj, Connelly, Cerne, & Dysvik, 2018). Second, previous studies on knowledge hiding examined the impact of trait competitiveness (Hernaus, Cerne, Connelly, Poloski Vokic, & Škerlavaj, 2019) and the role of performance climate, that is, "a motivational climate characterized

by social comparison and intra-team competition" (Černe et al., 2014, p. 173). However, to the best of our knowledge, no study has so far explored the impact of structural competition on knowledge hiding.

Furthermore, no study has so far investigated the role of social comparison emotions as an antecedent, rather than an outcome of knowledge hiding (for a study on how knowledge hiding elicits emotions of guilt and shame in those who hide knowledge see Burmeister, Fasbender, & Gerpott, 2019). Thus, for this psychometric study, we focus on the relationship between intra-team competitive HR practices and knowledge hiding. We include malicious envy, benign envy, and inspiration as intervening variables. Additionally, we control for a series of variables proposed to associate with the emotions and knowledge hiding in previous research. After describing our hypotheses in the next section, we examine the results of our analysis.

Theory & Hypotheses Development

Knowledge Hiding and Intra-Team Competitive HR Practices. Knowledge hiding is "an intentional attempt by an individual to withhold or conceal knowledge that has been requested by another person" (C. Connelly et al., 2012, p. 65). Three types of knowledge hiding are distinguished in the literature: evasive knowledge hiding, playing dumb, and rationalized knowledge hiding (C. Connelly et al., 2012). Employees who engage in evasive hiding provide false or incorrect information to the person that requests knowledge on purpose. Playing dumb means that employees engage in false promises to share the requested information with their peers or colleagues, without ever intending to do so. Although evasive knowledge hiding and playing dumb are both assumed to be the most deceptive forms of hiding, a critical difference is that playing dumb "does not involve equivocation as does evasive hiding, which merely involves concealment of knowledge" (C. Connelly & Zweig, 2015, p. 484). Employees who engage in rationalized hiding justify their hiding to the requester. They provide the requester with a compelling rationale that they are not allowed to share the requested knowledge or information because it is confidential or private (C. Connelly et al., 2012). In contrast to evasive hiding and playing dumb, which are characterized by bad

intentions, rationalized hiding is a strategy that is the least deceitful (C. Connelly & Zweig, 2015).

Employees in companies that apply intra-team competitive HR practices find themselves in a situation where they are under pressure to outperform their peers, as they are put under constant comparisons that are inherent in such practices. For instance, when companies use relative rankings or distribute rewards or bonuses in a team, the comparison with other fellow team members (by design) turns the employee's attention toward the performance of others. Thus, the relative position of others and outperforming them becomes a salient issue. How other team members are doing in comparison with oneself determines an employee's success and career advancement within the organization. What counts at the end of the day (or at the end of the year) is how they performed or progressed in comparison with their peers, and whether they made it to the higher ranks. Employees have thus to be careful whether and on what terms to engage with other employees from their team in providing others with knowledge as this might undermine their progress.

Moreover, intra-team competitive HR practices establish negative interdependence. HR practices such as forced distribution rankings yield a small proportion of star performers in the team, provide them with better resources, promotions, or exclusive training opportunities, while (by design) excluding many other team members (Moon et al., 2016). With such a constellation of negative interdependence, where the success of some implies considerably fewer chances, such as receiving a star ranking by others (e.g., forced rankings), collaborating with others thus represents a risky investment. For example, by sharing information that could enable other team members to complete their tasks or projects, employees put their prospects and success in the organization at risk, and thus, at a disadvantage. Employees will thus be more inclined to pursue their personal agendas and engage in less cooperative behaviors. Under pressure to outperform one's peers, employees might even cease to show purposefully dishonest or unethical behaviors that aim at harming other team members. Therefore, we expect that employees in HR systems that focus on intra-team competition are inclined to hide their knowledge from others willingly. Thus, we propose the following hypothesis.

Hypothesis 1: Intra-team competitive HR practices are positively related to (all types of) knowledge hiding.

Social Comparison Emotions and Knowledge Hiding. Emotional experiences evoked by upward social comparisons are highly complex, as social comparison emotions do not happen in isolation. Instead, they might entice a whole range of different feelings that go beyond the three emotions (Smith, 2000). Employees might (simultaneously) experience a variety of other emotions that arise from a comparison with a person that received an advantage that the employees themself wished for but did not get. Based on this argument, we do not expect the emotions of malicious envy, benign envy, and inspiration to be the only driving engines behind the impact of intra-team competitive HR practices on knowledge hiding. Instead, we expect a partial mediation by these emotions.

Malicious Envy and Knowledge Hiding. As the conceptual model shows (Chapter 3), competitive HR practices that induce competition within individuals in a team lead to upward contrastive comparison processes. Such contrastive comparisons evoke feelings of envy. However, feelings of envy are not always toxic or detrimental. Envy might take two different forms: malicious envy and benign envy (Smith, 2000; Van de Ven et al., 2009). Malicious envy is a painful emotion that is characterized by feelings of frustration, hostility, and ill will toward the better-off peers (Lange, Weidman, & Crusius, 2018; Van de Ven et al., 2009, 2012). Malicious envy evokes behaviors and action tendencies that aim at actively undermining and harming the fortunate others. Studies show that malicious envy fuels behaviors such as harming others and acts of sabotage directed toward better-off peers (Cohen-Charash, 2009; Duffy & Shaw, 2000; Moran & Schweitzer, 2008). We argue that the mechanics behind knowledge hiding, particularly behind its deceitful forms, are similar to the acts of sabotage towards other peers. Accordingly, malicious envy will strengthen the employees' motivation to hold others from achieving better outcomes by concealing information from one’s peers, premeditatively disguising, or withholding task-relevant information from them, even if actively asked to provide such information. This strong motivation to harm the better-off peers inherent in malicious envy will ignite evasive hiding and playing dumb.

We expect different effects of malicious envy with the three forms of knowledge hiding. More concretely, we expect malicious envy to fuel the two 'backstabbing-like' types of knowledge hiding, that is, faced with this painful and toxic emotion, employees will actively try to engage in deceptive forms of hiding, that is, evasive hiding and playing dumb (C. Connelly & Zweig, 2015). Driven by the hostility toward the better-off peers, employees will try to harm their team members, as they will deceitfully keep others from obtaining information that could put them in a more favorable position. However, it is less likely that employees troubled with such a strong toxic and hostile emotion (i.e., malicious envy) will engage in rationalized knowledge hiding. Rationalized knowledge hiding, as a more modest and less harm-oriented form of knowledge hiding, is assumed to reside in a motivation distinctive from the two deceitful fellows. Rationalized hiding is not used because of 'evil' motives to hurt better-off peers, but due to a sense of obligation to preserve confidential information (Zhao, Liu, Li, & Yu, 2019); thus, it is not perceived as an act of dishonest behavior by the hiders themselves. On the contrary, Connelly and Zweig highlight that persons "who engage in rationalized hiding will view their behavior as honest and indicative of competence" (C. Connelly & Zweig, 2015, p. 482). Rationalized knowledge hiding lacks the intention to deliberately harm or be dishonest with others, which are the driving force behind malicious envy (Lange et al., 2018; Van de Ven et al., 2009). Thus, we conclude that employees who experience malicious envy as a result of intra-team competitive HR practices will tend to engage more in deceitful forms of knowledge hiding, that is, evasive hiding and playing dumb; and not in rationalized hiding. Malicious envy will, therefore, partially mediate the relationship between competitive HR practices and evasive knowledge hiding and playing dumb. However, it will not lead to rationalized hiding. Accordingly, we put forward the following hypotheses.

> **Hypothesis 2a:** Malicious envy will partially mediate the positive relationship between intra-team competitive HR practices and evasive knowledge hiding.
>
> **Hypothesis 2b:** Malicious envy will partially mediate the positive relationship between intra-team competitive HR practices and playing-dumb knowledge hiding.

Hypothesis 2c: Malicious envy will not mediate the relationship between intra-team competitive HR practices and rationalized knowledge hiding.

Benign Envy and Knowledge Hiding. In contrast, benign envy lacks the hostility toward better-off peers despite being painful (Lange et al., 2018; Van de Ven et al., 2012). Since benign envy is characterized by action tendencies and motivation to achieve a similar outcome, it fuels the employees' attention to pursue similar results in the future instead of damaging the better-off peer. Thus, the focus on the object of envy and the lack of hostility in benign envy will prevent employees from hiding task-related information from their team members (Lange et al., 2018; Van de Ven, 2016). Additionally, experiences of benign envy lack the inferior motives to damage or harm the better-off team members. However, although non-toxic, benign envy is still a painful and threatening emotion that signals to employees that their status and reputation is in danger and needs to be restored (Smith & Kim, 2007; Tai et al., 2012). Therefore, employees who experience benign envy as a result of being exposed to intra-team competitive HR practices will still hide knowledge to restore the threat triggered by the upward comparison inherent in benign envy. However, they will do it in a way that will make them look better while still concealing information to secure their own image and advantages. They will explain their hiding behavior to themselves and to their targets with the motivation to safeguard the confidentiality and third party interests, which is a form of hiding that the hiders generally believe to be an honest and morally justified act (C. Connelly & Zweig, 2015; C. Connelly et al., 2012).

Consequently, employees who experience benign envy as a result of intra-team competitive HR practices will engage less in those types of knowledge hiding that are characterized by the desire to harm the better-off peers as in evasive hiding and playing dumb (C. Connelly et al., 2012). However, employees might still engage in rationalized hiding as this behavior is perceived as honest and appropriate by those who hide knowledge (C. Connelly & Zweig, 2015). While lacking inferior motives to harm others, employees conceal information and provide a reason for why they do so. If motivated by the successes of better-off peers to achieve the same outcome, that is, experiencing benign envy, they will lack wicked intentions to harm the person. We, therefore, argue

that employees who experience benign envy will not engage in deceptive knowledge hiding (i.e., evasive hiding and playing dumb); however, they will still show a rationalized knowledge hiding behavior. Thus, we put forward the following hypotheses.

> **Hypothesis 3a:** Benign envy will not mediate the (positive) relationship between intra-team competitive HR practices and evasive knowledge hiding.
>
> **Hypothesis 3b:** Benign envy will not mediate the (positive) relationship between intra-team competitive HR practices and playing-dumb knowledge hiding.
>
> **Hypothesis 3c**: Benign envy will partially mediate the (positive) relationship between intra-team competitive HR practices and rationalized knowledge hiding

Inspiration and Knowledge Hiding. While benign envy is still a threatening emotion that arises if an individual lacks something that she/he wants to possess (Lange et al., 2018; Van de Ven et al., 2012), inspiration is a solely positive emotion induced by upward assimilative social comparison processes (Smith, 2000; Thrash & Elliot, 2003, 2004). Assimilative upward comparisons focus on the similarities that an employee has with his/her better-off team members (Mussweiler et al., 2004). They trigger the perception that the achievements of the better-off peers are in reach and might be attainable in the future. Since inspiration arises from assimilative upward social comparisons (Smith, 2000), it does not pose any threat to employees' self-concept as do the contrastive upward comparison emotions of malicious and benign envy (Crusius, Gonzalez, Lange, & Cohen-Charash, 2019; Lange et al., 2018). On the contrary, inspiration ignites a positive assessment of one's qualities, and thus brushes up the employees' self-image and self-perceptions (e.g., Mussweiler et al., 2004). Surpassed by team members on the way to a higher bonus or an exclusive promotion, employees will experience no hostility or overt desire to harm the better-off team member, since inspiration lacks any negative feelings or inferior motives toward others (Thrash & Elliot, 2003, 2004).

Consequently, employees will be less likely to engage in any form of overtly deceitful types of knowledge hiding (i.e., evasive hiding and playing dumb), as feelings of inspiration lack the ill will toward the better-off peers. Employees who experience

inspiration will also not engage in rationalized knowledge hiding, since (and in contrast to benign envy) inspiration does not have any threatening sub-layers. Owing to the assimilative upward comparisons with the better-off team members, employees will obtain a positive picture of their skills and abilities. Confident about their ability to achieve a similar result as their peers, employees will see no need in restoring or repairing their "attacked" self-image in a way that puts them in a better light (Crusius et al., 2019). We, therefore, argue that employees who experience inspiration under intra-team competitive HR systems will have no reason to engage in any form of knowledge hiding. Hence, we propose the following hypotheses.

Hypothesis 4a: Inspiration will not mediate the (positive) relationship between intra-team competitive HR practices and evasive knowledge hiding.

Hypothesis 4b: Inspiration will not mediate the (positive) relationship between intra-team competitive HR practices and playing-dumb knowledge hiding.

Hypothesis 4c: Inspiration will not mediate the (positive) relationship between intra-team competitive HR practices and rationalized knowledge hiding.

Methods

Sample and Data Collection After completing the data collection phase, we examined the data quality. Our data mining procedure was conducted in a way analogous to the approach followed in Study 3. After checking the quality of the participants' responses, we examined the presence of missing data, the distributional characteristics in our data, and performed outlier analyses. We checked for missing data by conducting the Little MCAR test, which showed that the missing data were randomly distributed, indicating that the missing values were missing at random (Chi-Square = 340.926, DF = 622, Sig. = 1.000). A visual examination of the "do not know" responses revealed that they were neither used extensively nor resulted in implausible responses. For completeness reasons, we also conducted the Kolmogorov-Smirnov test to check whether the data are normally distributed. It showed that our reflective constructs are non-normally

distributed (Table 26, Appendix D), which is, however, not a concern because of the non-parametric nature of PLS-SEM. To control for potential outliers, we calculated the Cook's D, centered leverage, and studentized deletion residuals (Aguinis et al., 2013). Two cases were excluded from the analysis, leading to a final sample size of N=535.

In this predictive validation study, we surveyed full-time workers recruited via the Prolific Academics data panel[13]. In this study, we used the same criteria and procedures for selecting participants as in Study 3 (e.g., participants with high reputation, fluency in English, from Western countries). Our final sample consisted of 535 employees. Among them, 294 (55%) of the 535 employees were male, 235 (43.9%) were female, 4 (0.7%) were other, and two respondents provided no information about their gender. Respondents were, on average, 33 years old (SD = 8.66) and worked on average 5.7 (SD = 5.38) years for their respective organizations. The majority had a relatively high level of education, with 49.2% of the participants holding a bachelor's degree, 24.8% being high school graduates, and 15.2% having a master's degree. The employees came from organizations of various sizes. Most participants (62.3%) worked for organizations that have at least 250 employees, 123 respondents (23%) worked for organizations with between 50 and 249 employees, and the rest (14.7%) worked for organizations with a maximum of 49 employees.

Measures

In this study, the intra-team competitive HR practices' bundle was assessed using the same instrument and response format as in Study 3 to ensure the comparability between the results of the two studies. All other variables in the model were assessed with a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree)—unless indicated otherwise. We relied on scales that have been extensively used and validated in previous research. All scales showed Cronbach's alpha values ranging from

[13] To ensure that we base our data collection on a sample size that extends the minimum sample size requirements, we calculated the power analysis with G*power before conducting our last study. This step was necessary due to the large number of indicators for intra-team competitive HR practices and other variables in our model. The calculations of power showed a minimum sample size of N = 222.

fairly (α = .76) to highly reliable (α = .96). Furthermore, Bonett and Wright (2015) argue that "Cronbach's alpha contains a sampling error of unknown direction and unknown magnitude" (p.4), and thus, strongly recommend to provide a confidence interval (CI) for the population value together with the sample value. In line with this suggestion, in addition to values of Cronbach's alpha, we also report the values of CIs in square parentheses[14].

Main Variables

Intra-team competitive HR Practices. We measured intra-team competitive HR practices with the measure validated in our previous study. In our validation study, the intra-team competitive HR practices emerged as a formative construct deeming Cronbach's alpha as meaningless in such a case. It does not apply to formative measures because formative indicators are not highly interchangeable (Diamantopoulos & Winklhofer, 2001; Hair et al., 2016). We thus refrain from calculating or reporting the value of Cronbach's alpha for intra-team competitive HR practices construct.

Malicious and Benign Envy. To assess both envy types, we relied on a scale that was recently developed and psychometrically validated by Lange et al. (2018). Malicious envy was measured using four items. A sample item for malicious envy was "I secretly wished that the person would lose his/her advantage." The Cronbach's alpha for malicious envy was α = 0 .88 [.0862; 0.895]. Benign envy was measured using three items. A sample item was "I wanted to work harder to get a similar advantage." We had to exclude one item, that is, the item "I feel deep longing to achieve the same," as this item loaded strongly on malicious envy, but not on benign envy (see Preliminary Analysis, coming next). The Cronbach's alpha of the three-item version of the scale was α = .80; [.772; .828]

[14] No option is so far available in SPSS to calculate the confidence intervals for Cronbach's alpha. However, the Cronbach's alpha reliability was shown to correspond with the intraclass-correlation coefficients for continuous measures, which applies to our reflective constructs (Bravo & Potvin, 1991). We, therefore, calculated the CI for Cronbach's alpha by establishing the CI of the intraclass correlations coefficients using a two-way and 95% CI option in SPSS.

Inspiration. To measure inspiration, we relied on a four-item scale developed by Thrash and Elliot (2003). In the original scale, each item was supplemented by questions that addressed the frequency and intensity at which individuals felt inspiration. In this study, we were not interested in how often feelings of inspiration were felt, but in the extent to which our respondents experienced this feeling. Consequently, we refrained from asking supplemental questions addressing the frequency and intensity. The items were also slightly modified to include the add-ons providing a clear reference to the situation addressed in the survey instructions. Concrete, respondents were asked to imagine a situation where a fellow team member received a better outcome, which the respondent lacked but wished to possess (e.g., a promotion or a bonus), and then to assess to what extent this situation would lead to inspiration. Examples of items were "I experienced inspiration in this situation" or "the other person's achievements inspired me." The scale showed high internal consistency with Cronbach's alpha values of $\alpha = 0.94$ [0.936; 0.951]

Knowledge Hiding. We opted to treat knowledge hiding as a multifaceted construct and measured each of the dimensions separately (e.g., C. Connelly, Černe, Dysvik, & Škerlavaj, 2019). To measure knowledge-hiding behaviors, we used the scale developed and validated by C. Connelly et al. (2012). Each knowledge-hiding dimension was assessed using four items. A sample item for evasive knowledge hiding was "I told the team member that I would help him/her out later, but stalled as much as possible." A sample item for playing dumb was "I said that I was not very knowledgeable about the topic." A sample item for rationalized hiding was "I explained that the information is confidential and only available to people working on a particular project." The Cronbach's alpha values for the three scales were as follows: $\alpha = 0.87$ [0.85;0.89] for evasive hiding; $\alpha = 0.96$ [0.95;0.96] for playing dumb; $\alpha = 0.92$ [0.91;0.93] for rationalized hiding.

Controls

Following recommendations by Bernerth and Aguinis (2016), our choice of the control variables was guided by theory and previous empirical research. We controlled for dispositional envy, social comparison orientation, competitive orientation, task

interdependence, gender, tenure, and the level of education. We delineate the choice and the measures used to assess the control variables in the next section.

Dispositional Envy. Dispositional envy is a stable personality trait that refers to a general tendency of people to feel envious and hostile when experiencing the fortune or success of others (e.g., Cohen-Charash, 2009; Smith, Parrott, Diener, Hoyle, & Kim, 1999). Individuals who tend to envy others as a dispositional trait tend to engage more often in contrastive comparison processes and thus experience envy more often than inspiration (Smith et al., 1999). Numerous studies show that dispositional envy undermines helping behaviors and the sharing of high-quality information (e.g., Fischer, Kastenmüller, Frey, & Peus, 2009; S. Kim, O'Neill, & Cho, 2010). Moreover, dispositional envy has an amplifying effect on social undermining, interpersonal deviance, and sabotage (e.g., Duffy, Scott, Shaw, Tepper, & Aquino, 2012; Khan, Quratulain, & Bell, 2014; S. Kim et al., 2013). Since knowledge hiding reflects a form of interpersonal "sabotage" toward peers, we expect dispositional envy to show similar relationships with knowledge hiding as with other forms of interpersonal counterproductivity. We thus control for dispositional envy. The eight-item dispositional envy scale developed by Smith (1999) was used to measure dispositional envy. This scale is the most often used and extensively validated measure for dispositional envy (Lange & Crusius, 2015). A sample item was "feelings of envy constantly torment me." The internal consistency of the scale was high with $\alpha = 0.92$ [0.907;0.928].

Social Comparison Orientation. Social comparison orientation reflects a general dispositional tendency to compare oneself to others (Gibbons & Buunk, 1999). We included social comparison orientation as a control variable because of its association with experiences of negative affect (e.g., Brenninkmeyer, Van Yperen, & Buunk, 2001; Gibbons & Buunk, 1999), and benign and malicious envy. Recent research on benign and malicious envy supports this view. It indicates that social comparison orientation correlates with both benign and malicious envy to a different degree (Lange et al., 2018). Social comparison orientation was measured with a six-item version of the Iowa-Netherlands Comparison Orientation Measure (INCOM) by Gibbons and Buunk (1999). The scale was validated in various national contexts and is widely used in social

comparison research. A sample item was: “I often compare how I am doing socially with other people (e.g., social skills, popularity)” The social comparison orientation scale showed acceptable values of Cronbach’s Alpha (α = 0.76). A close examination of the respective CI-values was also above the critical level of α = 0.70 with CI=0.726; 0.789 (Bonett & Wright, 2015).

Competitive Orientation. We also controlled for competitive orientation (i.e., trait competitiveness) as another personality attribute. Since competitive individuals might be more inclined to pursue their own goals in their respective organizations for the sake of the thrill that the competition generates, they might show less concern for others and engage more in knowledge hiding. A recent study on the relationship between competitiveness and evasive knowledge hiding among academics indicates a strong association between them (Hernaus et al., 2019). We measured competitive orientation using the global competitiveness scale from Newby and Klein (2014). Considering that general competitiveness was used only for control reasons, this scale was a useful alternative in contrast to measures that conceptualize competitiveness as a multidimensional construct (Franken & Brown, 1995). Some sample items for general competitiveness were “I love the thrill of competition” or “I enjoy pursuing goals by competing with others.” The Cronbach's alpha value of the competitive orientation scale was high, with α = 0.96 [0.957;0.967].

Task Interdependence. Task interdependence might also impact the tendency of employees to hide knowledge from their team members. Employees who work together with others in a team and whose results partially depend on how well the others complete their tasks will be less inclined to engage in knowledge hiding, as they know that their success depends on the success of their peers. Therefore, employees in teams with high task interdependence will avoid hiding knowledge from their colleagues. A recent study by Fong, Men, Luo, and Jia (2018) supports this view. It indicates that employees operating in teams characterized by high task interdependence tended to show less knowledge-hiding behaviors. We measured task interdependence with the scale provided by Campion, Medsker, and Higgs (1993). The values of Cronbach’s alpha were within the acceptable range (α = 0.74). A close reexamination of the corresponding CIs

(0.704; 0.779) showed that it was slightly above the critical level of $\alpha = 0.70$ and was thus retained in our study (Bonett & Wright, 2015).

Gender. Previous research on the role of gender and competition highlights that women are generally less competitive, get less enjoyment from competing with others (e.g., Niederle & Vesterlund, 2007; Niederle & Vesterlund, 2011), and generally show more concern for others than men (e.g., Gerbasi & Prentice, 2013). Moreover, women are less inclined to engage in unethical or counterproductive behaviors (e.g., Samnani, Salamon, & Singh, 2014; Welbourne & Sariol, 2017). Given that knowledge hiding reflects a specific form of counterproductivity (C. Connelly et al., 2012), we controlled for gender as a potential predictor for the association between intra-team competitive HR practices and knowledge hiding.

Tenure. Previous research has shown that the employees' tenure in an organization might have a distinct impact on their tendencies to engage in knowledge hiding. Studies that assessed knowledge hiding as one construct and not through its three sub-dimensions seem to provide no evidence for an association between tenure and knowledge hiding (e.g., Peng, 2013). However, other studies that distinguished between various types of knowledge hiding seem to uncover a distinct relationship between tenure and the dimensions of knowledge hiding: They found a significant association between tenure and rationalized knowledge hiding; while evasive hiding and playing dumb did not show any significant association (e.g., Zhao et al., 2019). Given that we are interested in investigating the impact of intra-team competitive HR practices on knowledge hiding in terms of three distinct dimensions, we decided to include tenure as a control variable in our study.

Education. We included education as a control variable because employees with different education levels might also differ in their tendencies to experience upward comparisons as threatening, as well as to vary in the degree by which they might engage in knowledge-hiding behaviors. Employees who have a high educational level are more likely to have a strong sense of competence acquired through a higher degree. Thus, they are also more likely to possess the confidence that better outcomes are within their reach in the future, as they perceive them self to have the abilities and the skills to

achieve the same results. Furthermore, even if they do not possess the skills, they might still believe that they can acquire such skills because they have already surmounted various educational hurdles; for example, they managed to complete a university degree or a Ph.D. Hence, the self-image of highly educated employees (as opposed to that of low educated ones) will not be easily shattered by the successes of others, making them less likely to be prone to envy, and consequently, the use of knowledge hiding. Current research on knowledge hiding seems to support this argument (e.g., Bogilović, Černe, & Škerlavaj, 2017). We measured education as an ordinal variable ranging from 1 (no schooling completed) to 7 (doctoral degree).

Next, we describe the methods used to analyze the data and present the results of our hypotheses tests.

Data Analysis

Descriptive Statistics. We started with the examination of the bivariate correlations between the main variables in our study to gather a preliminary assessment of the pattern of association between our main variables. We report the means, standard deviations, and bivariate correlations among our variables in Table 13. Intra-team competitive HR practices showed a significant and positive correlation with malicious envy ($r = 0.22$, $p \leq 0.01$), benign envy ($r = 0.20$, $p \leq 0.01$) and inspiration ($r = 0.18$, $p \leq 0.01$). A similar pattern of relationships was observed between intra-team competitive HR practices and the three types of knowledge hiding. Intra-team competitive HR practices showed a significant, positive correlation to evasive hiding ($r = 0.42$, $p \leq 0.01$), playing dumb ($r = 0.33$, $p \leq 0.01$) and rationalized hiding ($r = 0.53$, $p \leq 0.01$). These significant and positive correlations provide evidence, albeit tentative, that intra-team competitive HR practices might indeed be a double-edged sword as they associate with both harmful (e.g., malicious envy, evasive hiding) as well as less adverse employee reactions (e.g., benign envy, rationalized hiding).

Furthermore, we found a significant and strong bivariate association between evasive hiding and playing dumb ($r=0.75$, $p \leq 0.01$). We perceive it, however, as less alarming, given that evasive hiding and playing dumb both refer to knowledge hiding strategies

that are marked by deceitful intentions and are therefore also conceptionally close (C. Connelly et al., 2012). The relationships between rationalized hiding with playing dumb and with evasive hiding respectively were also positive and considerably strong as well (with playing dumb: $r = 0.64$, $p \leq 0.01$; with evasive hiding: $r = 0.67$, $p \leq 0.01$). However, given that all of these forms refer to the same concept and were previously psychometrically validated to represent distinctive forms of knowledge hiding in validation studies, we expected them to correlate with each other (C. Connelly et al., 2012; Zhao et al., 2019).

Concerning the relationships between the two emotions of envy, the bivariate correlations of malicious envy with benign envy showed a negative, yet non-significant association ($r = - 0.07$, ns) between the two envy constructs. This is an interesting insight, given that these emotions were proposed to have the same common denominator of being painful, we expected them to show a stronger association. While inspiration was significantly and negatively related to malicious envy ($r = -0.28$, $p \leq 0.01$) as we expected, benign envy and inspiration showed a significant, positive correlation with each other ($r = 0.70$, $p \leq 0.01$). Unlike knowledge hiding behaviors (C. Connelly et al., 2012), benign envy and inspiration have not yet been clearly separated - neither conceptionally, nor psychometrically. This is a matter to be taken into account in the subsequent analysis.

Regarding the bivariate association between the three types of emotions and the three forms of knowledge hiding, different relationships resulted. Evasive hiding correlated significantly and positively with malicious envy ($r = 0.44$, $p \leq 0.01$), yet not with benign envy ($r = 0.04$, ns) and inspiration ($r = -0.03$, ns). A similar matter emerged for playing dumb. Playing dumb was significantly and positively associated with malicious envy ($r = 0.43$, $p \leq 0.01$), but no significant bivariate correlations for benign envy ($r =-0.02$, ns) as well as inspiration ($r = -0.06$, ns.). This constellation provides a preliminary indication that both evasive hiding and playing dumb seem to be the likely outcome when employees experience malicious envy towards the better-off team member and not when feeling benign envy, which corresponds with our expectations. In contrast, rationalized hiding associated with all three emotions significantly and positively (malicious envy: r

= 0.28; $p \leq 0.01$, benign envy: $r = 0.16$, $p \leq 0.01$; inspiration: $r = 0.16$, $p \leq 0.01$). While preliminary and subject to later analysis, particularly the association between rationalized hiding and malicious envy, is something that we did not expect.

Table 13. Means, Standard Deviations, Cronbach's Alpha Values, and Correlations

		Mean	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Envy (Disposition)	2.86	1.40	0.92	1												
2	Social Comparison Orientation	4.67	1.02	0.76	-.212**	1											
3	Competitive Orientation	4.16	1.56	0.96	-.002	.033	1										
4	Task Interdependence	5.02	1.36	0.74	-.068	.176**	.100*	1									
5	Gender	1.57	0.51	n.a.	-.051	-.017	.162**	-.035	1								
6	Tenure	5.75	5.38	n.a.	.007	-.033	-.067	.105*	.027	1							
7	Education Level	4.81	.96	n.a.	-.090*	-.011	-.027	-.036	.024	-.119**	1						
8	Intra-Team Competitive HR	n.a.	1.00	n.a.	.249**	-.061	.256**	-.033	.145**	-.041	-.028	1					
9	Malicious Envy	2.86	1.62	0.88	.377**	-.101*	.061	.007	.035	-.010	-.039	.218**	1				
10	Benign Envy	4.18	1.58	0.80	.052	.037	.277**	.068	.043	-.123**	.037	.202**	-.067	1			
11	Inspiration	3.75	1.71	0.94	-.032	.041	.280**	-.030	.017	-.140**	-.005	.175**	-.277**	.695**	1		
12	Evasive Hiding	2.35	1.40	0.87	.359**	-.167**	.096*	-.074	.091*	-.062	.040	.420**	.441**	.037	-.031	1	
13	Playing Dumb	2.41	1.63	0.96	.288**	-.156**	.059	-.082	.083	-.064	.011	.331**	.425**	-.016	-.061	.749**	1
14	Rationalized Hiding	1.86	1.30	0.92	.354**	-.204**	.162**	-.132**	.096*	-.096*	-.024	.532**	.272**	.163**	.161**	.670**	.639**

* $p < 0.05$ (2-tailed), **$p < 0.01$ (2-tailed).

Note: N=535, α = Cronbach's Alpha, n.a. = not applicable.

Preliminary Analysis. Research on knowledge hiding indicates that evasive hiding, playing dumb, and rationalized hiding represent three distinctive knowledge-hiding constructs (C. Connelly et al., 2012), with evasive hiding and playing dumb being considerably correlated in most studies, which is not surprising since both have overt deception as a common theme. Therefore, we did not conduct any analysis of the distinction between the three types of knowledge hiding. Additionally, previous research on the distinction between benign and malicious envy indicates that benign and malicious envy represent two distinct types of envy. However, the conceptual distinction between benign envy and inspiration is a blind spot in emotion research, both from the theoretical and empirical point of departure. No studies have so far investigated whether the two types (i.e., benign envy and inspiration) are sufficiently distinct from each other.

Moreover, Table 13 shows that the bivariate correlations between benign envy and inspiration indicate high collinearity between the constructs (Table descriptive statistics). Due to the lack of research on the distinction between inspiration and benign envy, we thus needed to establish whether the two constructs are indeed sufficiently distinct from each other first. Accordingly, we had to carefully examine the factorial structure of malicious envy, benign envy, and inspiration before analyzing our hypotheses to ensure that our hypotheses were not affected by and potential construct multi-collinearity. Given the lack of research on the distinction between benign envy and inspiration, we first conducted an exploratory factor analysis (EFA), followed by confirmatory factor analysis (CFA) in line with recommendations (e.g., T. A. Brown, 2006; DeVellis, 2016; Fabrigar & Wegener, 2011; Worthington & Whittaker, 2006). As methods literature advises against running EFA and CFA on the same sample, we divided our original sample into two separate samples through randomization. The first sample (N=277) was used to carry out the EFA, while the second sample (N=260) was used for the CFA.

Exploratory Factor Analysis. Through EFA, we investigated the sources of potential overlap between these constructs, that is, whether there is a shared variance between the measure of inspiration with the measures of benign and malicious envy (e.g., DeVellis, 2016). However, to guide the hypothesis testing stage and prevent that the correlation

between the two constructs would bias the further calculations, as high intercorrelations might have detrimental effects on the follow-up test of our hypothesis and bias the results, we chose the oblique rotation method as recommended for constructs that are assumed to be correlated (Fabrigar & Wegener, 2011; Worthington & Whittaker, 2006).

First, we needed to check if the data are suitable for conducting the EFA. We assessed the sampling adequacy of our data by calculating Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Table 27, Appendix D). The results of both tests showed whether the correlations between the constructs are significantly higher than zero. The Bartlett's test of sphericity resulted in a significant value, thus verifying that the data structure allows for conducting EFA ($\chi 2 = 2461.939$, $df = 66$, $p < 0.00$); the KMO measure of sampling adequacy was used as an additional criterion because of the susceptibility of Bartlett's test to large sample sizes (Worthington & Whittaker, 2006). The KMO measure of sampling adequacy amounted to a KMO value of .864, indicating good suitability of the data for EFA. KMO values between .70–.79, .80–.89, and >.90 are considered fair, good, and very good, respectively (Fabrigar & Wegener, 2011; Worthington & Whittaker, 2006).

Two factoring options are commonly used for conducting EFA: the principal axis and the maximum likelihood factoring approach (Fabrigar & Wegener, 2011; Worthington & Whittaker, 2006). The principal axis factoring does not require the data to follow a normal distribution, while the maximum likelihood factoring imposes such requirement (Fabrigar & Wegener, 2011). Given the non-normal distribution of the data, the maximum likelihood approach has been discarded as not appropriate, and principal axis factoring was chosen as the appropriate factoring solution (Fabrigar & Wegener, 2011). We chose the oblique rotation when conducting EFA because the oblique rotation method allows the factors to correlate, which is the case with benign envy and inspiration (Farbrigar & Wegener, 2011).

To identify the number of factors underlying the constructs of interest and to judge whether each of the two types of envy and inspiration represents a distinct factor, the Kaiser-Guttman rule (i.e., eigenvalues-greater-than-one-rule), the scree test, and parallel analysis were used. Notably, some scholars advise against the use of the Kaiser-Guttman

rule (Fabrigar & Wegener, 2011). Although highly contested, the Kaiser-Guttman rule is still widely used in EFA (Fabrigar & Wegener, 2011; Worthington & Whittaker, 2006). Therefore, we included this criterion but supplemented it with additional criteria – the scree plot and the parallel analysis procedure recommended in the EFA literature for a more comprehensive assessment (Fabrigar & Wegener, 2011). As shown in Table 28, the Kaiser-Guttman rule resulted in a two-factor solution with the "eigenvalues" of factor 1 (5.183) and factor 2 (3.119) exceeding the standard threshold of eigenvalues above 1.

The examination of the scree plot provided a different result for the number of underlying factors. The scree plot showed a significant drop in the plot after the third factor (Figure 4, Appendix D), suggesting a three-factor structure. However, this finding stands in contrast with the factor matrix that suggests that the factor structure follows a two-factor solution. Following Fabrigar and Wegener (2011), we then conducted a parallel analysis assessment. The parallel analysis "attempts to provide a more objective criterion than the scree plot and a less arbitrary criterion than the eigenvalues-greater-than-one rule for whether a particular factor constitutes more than noise in the data" (Fabrigar & Wegener, 2011, p. 58).

A parallel analysis test was conducted using a macro for SPSS developed by O'connor (2000). We relied on the mean and the 95th percentile criterion to judge the number of factors underlying the EFA of inspiration, benign envy, and malicious envy (for a detailed illustration of the parallel analysis implications, consult Fabrigar & Wegener, 2011). For the parallel analysis, the raw data values are compared with the values of the simulated eigenvalues. Thereby, a situation where the simulative eigenvalues are higher than the raw eigenvalue marks the point from which a conclusion can be made regarding the number of factors to be extracted in the factor analysis (Fabrigar & Wegener, 2011). In our case, the fourth factor marked the point where the mean random value in the simulative data was higher than the eigenvalues of the raw data. The eigenvalue of the fourth factor was 0.099527 and 0.126271 in the raw and simulative data, respectively. Accordingly, the parallel analysis provides a tentative indication for the three-factor solution with malicious envy, benign envy, and inspiration as separate constructs.

Notably, the exploratory factor analysis deemed the item of benign envy that reads: “I felt deep longing to achieve the same” to be problematic. This item showed a comparatively high loading on the factor that reflects malicious envy in the EFA. (Table 29, Appendix D). One potential reason for the low loading on benign envy in our study might be the ambiguous meaning of deep longing. Longing is a secondary emotion that might vary from benign to malign longing (cf. Holm, 1999; p. 626). Depending on whether longing is grounded in positive or negative feelings, similar to envy, it might take a benign or a malicious form. The ambiguous meaning of longing (especially of deep longing) might, in turn, be responsible for the fact that in our analysis, the deep longing item represents more malicious rather than benign envy. Given the poor performance of the deep longing item that should reflect the desire to achieve the same, we excluded this item from the proceeding analysis.

In the next step, we opted for a further examination of the relationship between malicious envy, benign envy, and inspiration by conducting the CFA.

Confirmatory Factor Analysis. We conducted CFA on the second part of our randomized sample (N=260). Our goal was to juxtapose various measurement models to identify the measurement model that fits the data best. CFA was conducted in AMOS. Since our data were non-normally distributed, the use of the maximum likelihood function commonly used in CFA was not appropriate for our analysis (T. A. Brown, 2006). Instead, we used bootstrapping to counterbalance the non-normal distribution with the Bollen-Stine bootstrapping solution available in AMOS (Bollen & Stine, 1992; H. Kim & Millsap, 2014). We bootstrapped our CFA sample 5000 times. Overall, we relied on the recommended procedures and reporting standards for CFA related to the examination at the model level. To evaluate the goodness of fit, we relied on the indices recommended in the CFA literature such as $\chi 2$, RMSEA, and CFI (T. A. Brown, 2006; Schermelleh-Engel, Moosbrugger, & Müller, 2003).

Two different model specifications were tested: the three-factor (Model 1) and the two-factor specification (Model 2). We did not test the model with malicious envy, benign envy, and inspiration combined under one-factor since there was no theoretical rationale to do so. While benign envy and inspiration might have a common ground, the

relationship between malicious envy and inspiration clearly lacks such connection as these emotions are entirely different to be put under one factor as suggested by the negative bivariate correlations between them ($r = -0.277$, $p \leq 0.01$). In the three-factor model, the items of each construct were structured according to their operationalization in the literature; for example, the items of benign envy were assigned to the construct benign envy. In the two-factor model, two emotions of benign envy and inspiration were combined under one composite measure, with malicious envy representing a separate construct.

We conducted two CFA analyses, one with residuals uncorrelated and one with residuals allowed to correlate. Table 31 (Appendix E) gives an overview of both rounds of CFA, with the uncorrelated residuals as well as with residuals allowed to correlate. We started our analysis by conducting the CFA with residuals uncorrelated. Under the uncorrelated condition, the goodness-of-fit indices showed no acceptable fit to the data for both models. Model 1, the three-factor model yielded $\chi 2 = 192{,}784$, $df = 41$, $\chi^2/df = 4.702$, $CFI = 0.931$, and $RMSEA = 0.12$, which do not suffice the recommended guidelines, with the cross-loadings between benign envy and inspiration ($CL = 0.77$) indicating a strong association between the two emotions. The two-factor model showed a poor fit to the data ($\chi 2 = 298{,}218$, $df = 43$, $\chi^2/df = 6.935$, $CFI = 0.884$, and $RMSEA = 0.151$).

We examined the CFA output to see if the poor model fit is due to the presence of the correlated error terms (T. A. Brown, 2006). In our dataset, in both models, correlated error terms existed. A closer examination of the results indicated that error terms of benign envy construct correlate with each other and with items of inspiration. Based on these results, we decided to restrain the model and to introduce the error terms between the items of the constructs; this is a methodological step commonly applied for items of the same construct (Bollen & Stine, 1992).

After the stepwise introduction of correlated error terms in the model, the goodness of fit indices improved considerably, and all other correlations among the error terms disappeared. Model 1, the three-factor model with malicious envy, benign envy, and inspiration as distinct constructs, did not provide a good fit to the data despite allowing the error terms between the constructs to correlate. The goodness of fit estimates did not

suffice the guidelines recommended in CFA and SEM ($\chi 2$ = 159.016, df = 40, χ^2/df = 3.975, CFI = 0.946, RMSEA = 0.107, and pclose=0.000). The same procedural logic was applied in Model 2, the model with two factors; one factor comprised of malicious envy and the other factor comprised of benign envy and inspiration. The two-factor model with some of the error terms being allowed to correlate fitted the data well ($\chi 2$ = 104.856, df = 38, χ^2/df = 2.759, CFI = .970, RMSEA = .082, and pclose=.003) compared to the three-factor model. Overall, the results of the measurement model assessment (both during EFA and CFA) provide a first tentative indication that benign envy and inspiration are too closely related favoring the two-factor model (consisting of malicious envy as one factor and benign envy with inspiration as another factor).

Main Analysis. To test our hypotheses, we conduct the structural assessment of higher-order formative constructs (Hair, Sarstedt, et al., 2017; Sarstedt et al., 2019). Analogous to the approach in the measurement model, the higher-order construct of intra-team competitive HR practices is built using the repeated indicators approach in PLS-SEM.[15] We tested our mediation hypotheses via the bootstrapping method in SmartPLS, a recommended method for this analysis. SmartPLS allows examining direct, (specific) indirect, and total effects of the predictors in the data. Mainly, the specific indirect effects are relevant to assess mediation (Hayes, 2013; Preacher & Hayes, 2008). SmartPLS also provides bias-corrected bootstrapped confidence intervals to assess the significance of these effects.

We test the impact of each mediator separately because method wise, high correlations between the mediators in multiple mediation analyses, which are the case with benign envy and inspiration in our data, might deflate actual mediator effects. High associations between the constructs might considerably impair the conclusions if included as parallel (multiple mediators) in the analysis (e.g., Hayes, 2013; Preacher & Hayes, 2008). Our

[15] In line with Sarstedt et al. (2019), the relationship between the lower-order components and higher-order construct are not further interpreted when analyzing the predictive validity in the structural model. Instead, the analysis focuses on the relationship between the main constructs. Thereby, the path coefficients in PLS-SEM are interpreted as standardized regression coefficients.

decision also adheres to the theoretical assumptions of our conceptual model (Chapter 3). Accordingly, it is highly unlikely that employees will experience feelings of benign envy, malicious envy, and inspiration at the same time as these feelings emerge from different comparison foci (contrastive vs. assimilative comparison).

Therefore, instead of conducting multiple mediations in one path analysis, the hypothesized relationships are tested in separate models (for each mediating effect, separate path analysis is performed). In the first model specification (Model 1), we addressed Hypothesis 1, that is, the effect of intra-team competitive HR practices on the three types of knowledge hiding together with control variables. This model represents the baseline model in our analysis. Subsequently, we test Hypotheses 2a to 2c by examining the partial mediation of malicious envy in the relationships between intra-team competitive HR practices and the three forms of knowledge hiding (Model 2). We proceeded with the test of Hypotheses 3a to 3c by conducting path analysis of benign envy as a partial mediator between intra-team competitive HR practices and knowledge hiding. We then test Hypotheses 4a to 4c on inspiration as a partial mediator between intra-team competitive HR practices and knowledge hiding (Model 4). Noteworthy, we controlled for inspiration when establishing the effect of benign envy in Model 3 and for benign envy when establishing the effect of inspiration in Model 4, because, in contrast to Model 2, we needed to counterbalance for high collinearity levels between benign envy and inspiration in both path analyses. In doing so, the goal was to ensure that the collinearity between two emotions does not affect the pattern of relationships in our study. Our analysis concludes with the comparison of the three mediation models to identify the model that best predicts our data. We calculate in-sample predictive power metrics (e.g., R^2, $adjR^2$, and BIC) recommended for the structural model assessment with formative-formative higher-order constructs (Hair et al., 2018; Henseler & Sarstedt, 2013).

Results

Hypothesis 1 predicted that intra-team competitive HR practices would positively impact all three knowledge hiding behaviors. Intra-team competitive HR practices and

knowledge hiding are positively and significantly associated with evasive hiding (β = 0.357, p ≤ 0.001), playing dumb (β = 0.271, p ≤ 0.001), and rationalized hiding (β = 0.448, p ≤ 0.001) according to our calculations in Model 1 as depicted in Table 14. Hence, Hypothesis 1 was supported. For a detailed depiction of results with corresponding confidence intervals, consult Table 32 (Appendix F).

Table 14. Results of the PLS-SEM for the Baseline Model (Model 1)

	Evasive Hiding	**Playing Dumb**	**Rationalized Hiding**
	β	**β**	**β**
CV			
Envy (Disposition)	0.256***	0.205***	0.213***
Social Comparison Orientation	-0.087	-0.090	-0.123
Competitive Orientation	0.007	-0.011	0.056
Task Interdependence	-0.024	-0.033	-0.077*
Gender	0.054	0.055	0.032
Tenure	-0.048	-0.055	-0.078*
Education Level	0.068*	0.029	-0.002
IV			
Intra-team Competitive HR Practices	0.357***	0.271***	0.448***
$adj\ R^2$	**0.265*** **	**0.162*** **	**0.360*** **

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.
Note: β = standardized beta coefficient, CV = control variable, IV = independent variable.

In Model 2, Hypotheses 2a and 2b argued that employees exposed to intra-team competitive HR practices will experience feelings of malicious envy toward better-off peers. Due to this toxic emotion, they will be more inclined to engage in evasive hiding and playing dumb. The path analysis with malicious envy as a partial mediator in Model 2 (Table 15) yielded significant specific indirect effects of malicious envy for the relationship between intra-team competitive HR practices and evasive knowledge

hiding (i.e., specific indirect effect = 0.070; CI = [0.038; 0.101], $p \leq 0.001$), as well as for playing dumb (i.e., specific indirect effect = 0.077; CI = [0.040; 0.108], $p \leq 0.001$). In contrast, Hypothesis 2c argued that feeling malicious envy does not lead to rationalized hiding and that there will be no mediation by malicious envy between the intra-team competitive HR practices and rationalized hiding. Results of the path model provided support for this hypothesis, that is, the partial mediation between malicious envy and rationalized hiding showed no significant indirect effect (i.e., specific indirect effect = 0.02, [0.002; 0.046], p = 0.068). Hence, Hypotheses 2a, 2b, and 2 c were supported. For a detailed depiction of the results with respective confidence intervals consult Table 33 (Appendix F).

In Model 3, Hypotheses 3a and 3b postulated that benign envy does not mediate the impact of intra-team competitive HR practices on evasive hiding and playing dumb. Hypothesis 3c postulated that intra-team competitive HR practices will show a positive connection with rationalized hiding and that benign envy will partially facilitate this relationship. The rationale here was that employees who experience benign envy will not engage in deceitful forms of knowledge hiding because benign envy lacks hostility towards better-off peers present in malicious envy. However, employees might still hide knowledge through rationalized hiding, as this form of hiding lacks bad motives on the part of the knowledge hiders. The path analysis testing partial mediation by benign envy (Table 16) revealed that benign envy did not mediate the relationship between intra-team competitive HR practices and evasive hiding (specific indirect effect = 0.005; p = 0.677) as well as between intra-team competitive HR practices and playing dumb (specific indirect effect = -0.003, p = 0.800), providing support for Hypotheses 3a and 3b. However, in contrast to this prediction, partial mediation by benign envy was deemed non-significant (specific indirect effect = 0.003, p = 0.787). Hypothesis 3c was, therefore, not supported by our data. A more detailed depiction that also shows the respective confidence intervals consult Table 34 (Appendix F).

Table 15. Results of the PLS-SEM for Partial Mediation by Malicious Envy (Model 2)

	Evasive Hiding	**Playing Dumb**	**Rationalized Hiding**
	β	**β**	**β**
CV			
Envy (Disposition)	0.154***	0.089	0.181***
Social Comparison Orientation	-0.077	-0.080	-0.117
Competitive Orientation	0.002	-0.018	0.056
Task Interdependence	-0.034	-0.047	-0.082*
Gender	0.043	0.045	0.032
Tenure	-0.042	-0.050	-0.076*
Education Level	0.067*	0.029	-0.004
IV			
Intra-team Competitive HR Practices	0.309***	0.230***	0.434***
Mediator			
Malicious Envy	0.304***	0.331***	0.087*
Specific Indirect Effects	**0.070*** **	**0.077*** **	**0.020**
$adj\ R^2$	**0.336*** **	**0.254*** **	**0.361*** **
$\Delta\ adj\ R^2$ (compared to Model 1)	**0.071**	**0.092**	**0.001**

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: β = standardized beta coefficient, CV = control variable, IV = independent variable.

Table 16. Results of the PLS-SEM for Partial Mediation by Benign Envy (Model 3)

	Evasive Hiding	**Playing Dumb**	**Rationalized Hiding**
	β	**β**	**β**
CV			
Envy (Disposition)	0.253***	0.201***	0.218***
Social Comparison Orientation	-0.085	-0.087	-0.125
Competitive Orientation	0.027	0.017	0.031
Task Interdependence	-0.031	-0.038	-0.075*
Gender	0.049	0.050	0.033
Tenure	-0.056	-0.067	-0.066
Education Level	0.065*	0.028	-0.002
Inspiration	-0.108*	-0.102	0.071
IV			
Intra-team Competitive HR Practices	0.358***	0.281***	0.439***
Mediator			
Benign Envy	0.026	-0.017	0.014
Specific Indirect Effects	**0.005**	**-0.003**	**0.003**
$adj\ R^2$	**0.264*****	**0.168*****	**0.363*****
$\Delta\ adj\ R^2$ (compared with Model 1)	**-0.001**	**0.006**	**0.003**

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: β = standardized beta coefficient, CV = control variable, IV = independent variable.

In Model 4, we elaborated on whether inspiration mediated the relationship between the intra-team competitive HR practices and the three knowledge hiding behaviors Table 17. Hypotheses 4a, 4b, and 4c postulated that the positive association for the three forms of intra-team competitive HR practices is not mediated by inspiration. The specific indirect effects of inspiration on the relationship of the intra-team competitive HR practices and the three forms of knowledge hiding were, indeed, non-significant: for

evasive hiding (specific indirect effect = -0.019, p = 0.111), playing dumb (specific indirect effect = -0.017; p = 0.152), and rationalized hiding (specific indirect effect = 0.011; p = 0.213). Therefore, Hypotheses 4a, 4b, and 4c were supported. For a detailed overview, with confidence intervals also depicted, consult Table 35(Appendix F).

Table 17. Results of the PLS-SEM for Partial Mediation by Inspiration (Model 4)

	Evasive Hiding	**Playing Dumb**	**Rationalized Hiding**
	β	**β**	**β**
CV			
Envy (Disposition)	0.251***	0.201***	0.217***
Social Comparison Orientation	-0.084	-0.087	-0.124
Competitive Orientation	0.026	0.017	0.031
Task Interdependence	-0.031	-0.038	-0.074*
Gender	0.049	0.050	0.034
Tenure	-0.056	-0.068	-0.066
Education Level	0.064*	0.028	-0.002
Benign Envy	0.034	-0.012	0.024
IV			
Intra-team Competitive HR Practices	0.362***	0.283***	0.440***
Mediator			
Inspiration	-0.114*	-0.105	0.064
Specific Indirect Effects	**-0.019**	**-0.017**	**0.01**
$adj\ R^2$	**0.268*****	**0.171*****	**0.366*****
$\Delta\ adj\ R^2$ (compared to Model 1)	**0.003**	**0.009**	**0.006**

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: β = standardized beta coefficient, CV = control variable, IV = independent variable.

Model Comparison. As highlighted above, the assessment of the structural model with formative constructs differs from the assessment with models where all variables are reflective (Hair et al., 2018; Henseler & Sarstedt, 2013). Hence, we relied on in-sample

predictive power metrics recommended for the structural model assessment with formative constructs (R^2, $adjR^2$, and BIC), to judge which model explains the data best (Hair et al., 2018). The four path models presented above were compared with each other to identify the model that best fits the data in explaining knowledge hiding behaviors initiated through intra-team competitive HR practices. Table 18 provides an overview of the metrics used to assess the model fit in the data.

Table 18. Overview of the Values of the In-sample Predictive Power

Model	R2	adjR2	BIC
Model 1: Baseline Model			
Intra-Team CompHR -->KH (Evasive)	0.276***	0.265***	-117.013
	[0.168; 0.307]	[0.155; 0.296]	
Intra-Team CompHR -->KH (Playing Dumb)	0.174***	0.162***	-47.028
	[0.104; 0.196]	[0.09; 0.184]	
Intra-Team CompHR -->KH (Rationalized)	0.369***	0.360***	-190.999
	[0.215; 0.419]	[0.203; 0.410]	
Model 2: Partial Mediation Model for Malicious Envy			
Intra-Team CompHR-->KH (Evasive)	**0.347*** **	**0.336*** **	**-166.327**
	[0.243; 0.391]	**[0.230; 0.381]**	
Intra-Team CompHR-->KH (Playing Dumb)	**0.267*** **	**0.254*** **	**-104.186**
	[0.181; 0.304]	**[0.167; 0.292]**	
Intra-Team CompHR-->KH (Rationalized)	**0.372*** **	**0.361*** **	**-187.271**
	[0.209; 0.422]	**[0.196; 0.412]**	
Model 3: Partial Mediation Model for Benign Envy			
Intra-Team CompHR-->KH (Evasive)	0.278***	0.264***	-106.022
	[0.248; 0.401]	[0.233; 0.390]	
Intra-Team CompHR-->KH (Playing Dumb)	0.184***	0.168***	-40.427
	[0.164; 0.303]	[0.148; 0.290]	
Intra-Team CompHR-->KH (Rationalized)	0.375***	0.363***	-183.282
	[0.323; 0.502]	[0.310; 0.493]	
Model 4: Partial Mediation Model for Inspiration			
Intra-Team CompHR-->KH (Evasive)	0.280***	0.268***	-107.933
	[0.257; 0.407]	[0.242; 0.396]	
Intra-Team CompHR-->KH (Playing Dumb)	0.185***	0.171***	-41.116
	[0.165; 0.299]	[0.150; 0.287]	
Intra-Team CompHR-->KH (Rationalized)	0.376*** [0.330; 0.505]	0.366*** [0.318; 0.496]	-184.610

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.
Note: Values in brackets depict the 95% confidence interval; BIC =Bayesian Information Criteria.

Following recommendations from literature, we examined the in-sample predictive power reflected in values of the variance explained by each of the models and values of the BIC to identify the model that best fits our data. Our first model that addressed the effect of intra-team competitive HR practices on the three types of knowledge hiding together with control variables represents the baseline model against which we compare all other models (Hair et al., 2018). The in-sample predictive power of this model reached $R^2 = 0.276$, $adjR^2 = 0.265$, and BIC = –117.013 for evasive hiding; $R^2 = 0.174$, $adjR^2 = 0.162$, and BIC = –47.028 for playing dumb; and $R^2 = 0.369$, $adjR^2 = 0.360$, and BIC = –190.999 for rationalized hiding. These values of R^2, $adjR^2$, and BIC were chosen as the baseline values to compare the fit of the four competing models and to decide which model best explains the collected data, with lower BIC values indicating a better fit to the data (Hair et al., 2018).

From this model comparison, Model 2 emerged both as parsimonious and as the best fit to the data. It showed the highest values of variance explained in our data for evasive hiding ($R^2 = 0.347$, $adjR^2 = 0.336$, $p \leq 0.001$), playing dumb ($R^2 = 0.267$, $adjR^2 = 0.254$, $p \leq 0.001$), and also for rationalized hiding ($R^2 = 0.372$, $adjR^2 = 0.361$, $p \leq 0.001$). Furthermore, the values of BIC for all three types of knowledge hiding showed the best values among all of the tested models, with lower values of BIC indicating a better fit to the data (Hair et al., 2018): for evasive hiding (BIC = - 166,327), for playing dumb (BIC = - 104.186) and for rationalized hiding (BIC = - 187.271). Based on this comparison, we, therefore, conclude that from the overall fit perspective, Model 2 explained the data best.

Summing up, the model with malicious envy as a partial mediator in the relationships between intra-team competitive HR practices and knowledge hiding showed the best predictive power compared to the ones with benign envy or inspiration.

Specific Discussion

Summary

In this chapter, we have conducted two consecutive validation studies to explicitly address and examine the psychometric properties of our newly introduced construct of competitive HR practices from the perspective of employees. Our first validation study, Study 3, aimed at clarifying the underlying structure of our measurement. To do so, we surveyed full-time employees using the online platform Prolific Academics respondents pool to establish statistically whether the constructs of intra- and inter-team competitive HR practices follow a formative-formative higher-order construct. Our findings show that both intra- and inter-team competitive HR practices are better approached as higher-order formative constructs.

In the follow-up Study 4, we collected data from a new sample of full-time workers using Prolific Academics. The primary goal of this study was to establish the validity of our intra-team competitive HR practices measure in predicting employees' knowledge hiding towards the better-off team members. We examined the role of social comparison emotions of malicious envy, benign envy, and inspiration as potential mediators in the relationship between intra-team competitive HR practices and knowledge hiding. Our results indicate that intra-team competitive HR practices evoke deceitful knowledge hiding (i.e., evasive hiding and playing dumb) and that this effect can be attributed to the partially mediating role of malicious envy.

Next, we address contributions and certain limitations of our two studies as well as provide guidelines for future research on the topic.

Contributions

Foremost, we contribute to research on HR practices with two consecutive studies conducted in this chapter. Few studies have addressed the measurement structure and psychometric quality of the HR practices bundles in previous research. Although the most prominent approach is to operationalize the HR system as an additive set of single HR practices (Bainbridge et al., 2017; Boon et al., 2019; K. Jiang & Jake Messersmith,

2017), more sophisticated latent factor operationalizations are comparatively rare in HRM research. Our study is among the very few to explicitly investigate the latent factor structure of the new bundle of competitive HR practices. We are also the first in the field to do so using a recently introduced PLS-SEM focused approach recommended for the assessment of formative-formative higher-order constructs and to show empirically that bundles of HR practices follow a formative-formative higher-order construct using this novel approach (Ringle et al., 2020; Sarstedt et al., 2019).

Furthermore, our work builds on the theory of social comparisons and emotions that arise from such comparisons. Social comparison emotions represent a theoretical lens that has received limited attention in the field of HRM. Although it has been proposed to impact various HR practices in recent conceptual work (Marescaux, De Winne, & Rofcanin, 2019; Sapegina & Weibel, 2017), empirical research on the validity of this theoretical lens in explaining the controversial impact of HR practices in organizations is largely missing. Our studies in this chapter fill this void by providing such an empirical test. They hypothesize and show empirically how, particularly, intra-team competitive HR practices shape the behavior of employees in organizations through 'emotional strings' attached to such practices. Our insights point out that competitive HR practices might be prone to induce detrimental impact in organizations by means of unfavorable, upward contrastive comparisons, and emotions of malicious envy they evoke.

Our work also contributes to the research on knowledge hiding. Hitherto, structural competition infused through intra-team competitive HR practices and the emotions of malicious envy, benign envy, and inspiration have not been investigated as levers of knowledge hiding in organizations. We show that (particularly destructive) knowledge hiding tendencies, such as evasive hiding and playing dumb, amplify when employees are put under structural competition. Our study is the first to demonstrate that intra-team competitive HR practices entice feelings of malicious envy, which in turn, light up employee's tendencies to disfavor the achievements and the successes of the better-off team members. Malicious envy fuels employees' tendency to stall fellow team members with empty promises to provide them with information (i.e., evasive hiding) and to

intentionally hoodwink them as if one did not know the information the team member requested (i.e., playing dumb).

Limitations and Avenues for Future Research

Our studies psychometrically validated a measure of intra- and inter-team competitive HR practices and tested the measure of intra-team competitive HR practices for its ability to predict employee's behavior outcomes. This was based on the data collected from full-time employees using the online platform, Prolific Academics. Another constraint of our study might present the issue of common method bias argued to lead to over- or underestimation of relationships between the constructs of interest (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Due to the single-sourced design of our studies, this was something that cannot be ruled out entirely. Our studies were based on the self-assessment of one group of survey participants, that is, the employees. The use of self-assessment was, however, decisive for our study. Employee perceptions of HR practices, their emotions, and knowledge-hiding behavior represent constructs that rely heavily on the subjective experiences of employees. They are thus challenging to gather from other informants rather than employees them self. Related, due to the nature of our variables, socially desirable responding might be another concern in both studies. Due to the sensitive nature of our variables, employees might have answered questions in a manner that was not entirely sincere, which might be the case for malicious envy and deceitful forms of knowledge hiding, in particular. We did not collect data directly in companies, but via Prolific Academics data pool, which might have increased the respondents' willingness to respond genuinely. We also paid attention to explicitly and multiply highlight that participant's responses were anonymous, that there was nothing right or wrong about specific behaviors, and asked them to respond to our questions spontaneously and honestly. However, even with these measures taken, socially desirable responding might still present a problem.

Another limitation of our studies relates to its cross-sectional design. Although being a standard in measurement development studies (DeVellis, 2016; Worthington & Whittaker, 2006), cross-sectional designs do not allow for testing causal relationships

between the phenomena of interest. With this limitation in mind, we strongly advise future research on competitive HR practices to test both our hypotheses using research designs that rely on measures at different time points, such as time-lagged or longitudinal designs. An assessment of competitive HR practices, social comparison emotions, and knowledge hiding at different points in time seems like a valuable next step in assessing the causal chain of relationships underlying our hypotheses.

Our measurement analysis in Study 3 applies a novel approach to establish the convergent validity of formative constructs not yet applied in the field of HRM. Because the focus of our study was on measurement development, we did not examine the specific configurational interplay of competitive HR practices with each other. PLS-SEM analysis allows for examining the weights of single HR practices in a step-wise manner. Such weights signal relationships and the contribution of specific HR practices to the specific dimension. Future research avenues might entail examining how different single HR practices interplay with each other to impact employee outcomes using PLS-SEM. For example, scholars might impute each HR practice step-wise and examine how the introduction of each additional HR practice changes the relationships between other HR practices to impact the employee or organizational outcomes (Hauff, 2019). Moreover, as part of the PLS algorithm, SmartPLS software provides correlations between the indicators of a specific bundle. Examining such relationships might provide some additional evidence of how the indicators of competitive HR practices work together and trough their interplay (e.g., complementary or synergetic) impact employees and organizational outcomes.

Our hypotheses testing in Study 4 focused on the impact of intra-team competitive HR practices as these practices provided a better theoretical link to social comparison processes. We did not elaborate further on the predictive validity of the inter-team competitive HR practices measure in our studies. As highlighted before, an examination of the predictive validity of inter-team competitive HR practices would demand different, much more sophisticated theoretical approaches, which require cross-level theorizing beyond the individual toward the between-group processes not addressed in our model (e.g., emotional contagion). Future research might take the measure of inter-

team competitive HR practices as a starting point to conduct studies that address the theoretical mechanisms and uncover the dynamics and impact of inter-team competitive HR practices at the higher level between groups (Kozlowski & Chao, 2012; Kozlowski & Klein, 2000). Future research could focus on more elaborate research designs and methods. One possible avenue would be to conduct multi-level research designs that allow for an in-depth examination of teams based on a multi-level approach and notably, nested data that accounts for the emergence of group processes to appropriately assess the predictive validity of the scale and its explanatory power at a higher analysis level. This could include, for example, the way inter-team competitive HR practices affect employee attitudes and behavior towards the out-group the employees from a team are competing against.

Furthermore, we proposed and tested social comparison emotions of malicious envy, benign envy, and inspiration as intermediary mechanisms between intra-team competitive HR practices and employee knowledge hiding behaviors. However, as Cohen-Charash (2009) puts it, "loss in the competition will not always elicit envy" (p. 2136) but also contingent on other contextual factors and processes, other emotions such as jealousy, resentment, or anger might arise instead (e.g., Smith, 2000). For example, current research on relative LMX indicates that, if an employee has a good relationship with the supervisor and perceives such relationships in danger due to another rival taking the stage, feelings of jealousy rather than envy emerge (e.g., Andiappan & Dufour, 2020; Matta & Dyne, 2020). Furthermore, employees might find themselves under considerable pressure to perform and excel others, especially in environments where intra-team competition is highly pronounced. Such pressure to perform has been shown to evoke feelings of anger and motivate self-regarding behaviors (e.g., Mitchell, Baer, Ambrose, Folger, & Palmer, 2018; Mitchell, Greenbaum, Vogel, Mawritz, & Keating, 2019), which might lead to knowledge hiding. Our result that malicious envy was only a partial mediator in the interplay between intra-team competitive HR practices and knowledge hiding seems to indicate that there is more to competitive HR practices than feeling malicious envy. Therefore, future research might benefit from looking into alternative explanations such as the one highlighted above to elaborate on other potential

mechanisms in the relationships between competitive HR practices and knowledge hiding.

Finally, due to a high correlation between benign envy and inspiration in our data, we conducted exploratory and confirmatory factor analyses to examine whether these two are distinct enough from each other to be better positioned to choose the right method for our hypotheses test. Our analysis provides a first, albeit tentative indication that benign envy and inspiration largely overlap. Given this, we would like to encourage future research on emotions to clarify whether benign envy and inspiration are merely siblings or rather twins. One potential future trajectory in this regard would be to conduct qualitative research, for instance, by conducting interviews with employees. Such an approach would allow exploring employee experiences of benign envy or inspiration and how these (in their view) differ from each other to establish distinctive features as well as commonalities between these two emotions.

CHAPTER 7: OVERALL DISCUSSION

Summary

In 2000, Pfeffer and Sutton included in their practitioners' book a chapter on "when the internal competition turns friends into enemies" and quoted employees (some also from Microsoft) who complained fiercely about forced curves as a lever for employees to act uncooperatively (Pfeffer & Sutton, 2000). More than a decade later, Microsoft abandoned its forced rankings as these practices resulted in "capricious rankings, power struggles among managers, and unhealthy competition among colleagues" (Ovide & Feintzeig, 2013). The experiences of Microsoft might not be unique. Many others have recently reviewed and updated, or are currently evaluating their performance management systems if we are to believe the recent HR global human capital trend report from Deloitte (Barry et al., 2014). Hence, awareness about the potential dysfunctional effects of internal competition is increasing among practitioners; however, other companies such as Yahoo and Amazon still seem to hold to such competitive HR practices as forced rankings.

In this dissertation, we argued that it is worthwhile to pay more attention to such competitive HR practices both in research and practice. Competitive HR practices combined in a system might have a detrimental impact on employees in organizations. Based on social comparison theory and emotions of envy and inspiration that arise from upward social comparison, we first proposed a conceptual model on how competitive HR practices might unfold their impact on employees' attitudes and behaviors. Subsequently, we provided a measurement instrument to assess competitive HR practices, distinguished HR practices that provoke competition within and between teams. We derive a set of intra- and inter-team competitive HR practices from the field and extend them through a scholarly assessment to compose a list of practices to be combined into a measurement instrument. Next, we conducted a series of psychometric studies intending to establish the measurement structure of competitive HR practices and to test our newly developed measure. Our assessment provided psychometric evidence that both measures of intra- and inter-team competitive HR practices bundle follow a formative-formative measurement structure.

Furthermore, our insights demonstrate that intra-team competitive HR practices lead to knowledge hiding. Intra-team competitive HR practices evoke malicious envy, a toxic emotion that encouraged employees to engage in the most deceitful kind of knowledge hiding, the evasive knowledge hiding, and in playing dumb. We could not identify any potential positive effects of intra-team competitive HR practices and knowledge hiding that we hypothesized to emerge when, instead of malicious envy, intra-team competitive HR practices lead to benign envy or inspiration.

Next, we highlight several broader contributions of this dissertation, point out limitations, and discuss avenues to build upon in feature research.

Overall Contributions

Previous research on HRM has been criticized for being atheoretical when it comes to the ways in which single HR practices were combined to represent a system (Chadwick, 2010; Lepak et al., 2006). Most studies in the field of HRM research combine single HR practices into a specific bundle of HR practices without explicitly justifying their choices. Very few studies in the field present theoretical justifications combined with empirical and psychometric evidence why these and not other HR practices were included as part of a specific bundle (Boon et al., 2019; Boselie et al., 2005; Lepak et al., 2006). In contrast, this dissertation is among the first studies in the field of HRM research to provide a bundle of HR practices that are both phenomenon-driven as well as grounded in a comprehensive theoretical and methodological approach.

In this dissertation, we not only provided a conceptual definition of our construct but also derived assumptions on the epistemic nature of HR practices combined into bundles (i.e., as a formative-formative higher-order construct). We generated a comprehensive list of HR practices and validated a measurement instrument to assess the intra- and inter-team competitive HR practices bundles identified empirically. In so doing, we apply an overlooked yet promising methodology to psychometric validity based on the logic of PLS-SEM. PLS-SEM has been increasingly recommended for studying higher-order constructs, particularly ones with formative logic (e.g., Hair et al., 2016; Hair, Hult, et al., 2017; Hair et al., 2018). To the best of our knowledge, there are no studies

that use PLS-SEM method for measurement validation purposes in the field of HRM in general, nor in research on HR bundles in particular. Thus, this dissertation is the first to demonstrate psychometrically that the identified bundles of intra- and inter-team competitive HR practices follow a formative-formative higher-order logic using the PLS-SEM approach.

Furthermore, we build on the theory of social comparison and the upward comparison emotions of envy and inspiration to explain how the impact of competitive HR practices might unfold in organizations. According to our hypothesized model, depending on which emotions result from upward social comparison, different impacts on employees' attitudes (i.e., job satisfaction and well-being) and employee behaviors (i.e., task and contextual performance, knowledge hiding) are to be expected. In so doing, we blend a new theoretical lens into HRM research, which has so far received only marginal attention in HRM and just recently started to gain popularity in the field, for example, in research on i-deals (Marescaux et al., 2019).

The overall results of this dissertation are a cautionary note for both scholars and practitioners alike. Although competition has been generally assumed to be a double-edged sword because it might lead to either envy or inspiration, and thus impact employees differently, the empirical findings of this dissertation paint a different picture. We could not find any evidence that intra-team competitive HR practices have a good, or at least a 'not so bad' side proposed in our conceptual model when, instead of malicious envy, intra-team competitive HR practices lead to benign envy or inspiration (Chapter 3). Our findings indicate that competitive HR practices used to inspire competition within teams are not a double-edged sword, but are like the sword of Damocles: Intra-team competitive HR practices unveil an ugly side by provoking malicious envy and, through it, lead to particularly deceitful forms of knowledge hiding – the evasive hiding and playing dumb.

Limitations and Avenues for Future Research

Based on social comparison and competition research, we defined competitive HR practices as practices that induce relative comparisons and negative interdependence among employees. Hitherto, we have not elaborated on whether some of the competitive HR practices might contribute to a 'healthier' developmental form of competition. In contrast, others might be a contributor to more 'unhealthy' competition, similar to how hyper-competition is proposed to have a detrimental impact (He et al., 2014). This might be an exciting path for future research. It could conduct additional studies using our measure to examine if and to what extent the HR practices identified in this dissertation relate to the two types of competition, for example, using the validated measure of the developmental and hyper-competition provided by He and colleagues (2014) and to connect them to the employee and organizational outcomes.

According to the configurational view, different patterns of relationships might emerge based on how HR practices are combined with HR practices that follow a distinct logic. HR systems in practice are also often combined and thus interact with HR practices that root in a different logic (Combs et al., 2006b; Delery, 1998; Kepes & Delery, 2007). This interaction can lead to positive synergies. It could, however, also result in negative synergies, that is, 'deadly combinations' where the positive effects of one HR instrument are canceled out by the concurrent application of another one (B. Becker, Huselid, Pickus, & Spratt, 1997). It is thus not only the presence of competitive HR practices but also their interaction with other HR practices, informed by other HR logics, that needs to be addressed in future research. Intra-team competitive HR practices such as forced rankings or exclusive talent management might be combined with HR practices that aim to increase team spirit and collaboration, for instance, group-based incentives (Donate & Guadamillas, 2015), or rewards based on the amount of knowledge employees share with their team members (Chuang, Jackson, & Jiang, 2016). In this combination, competitive HR practices might quite likely act as the 'villain' that undermines the attempted collaboration (e.g., Beersma et al., 2009; Beersma et al., 2003; M. Johnson et al., 2006). Even though the overall procedure of this dissertation did not target explicitly examining the configurational interplay of competitive HR practices with HR practices

from other bundles, the introduction of the new bundle of competitive HR practices invites itself for future research on the interplay between competitive HR practices and other bundles of HR practices.

Related, research on configurations assumes that HR practices which are internally aligned with each other and thus characterized by a high degree of horizontal fit act as a significant contributor to positive organizational outcomes (Delery, 1998, 2016; Delery & Shaw, 2001). The insights from this dissertation challenge this view. Our theoretical framework and, even more so, our empirical analysis highlights the role of competitive HR practices as a contributor to several undesired employee outcomes (e.g., knowledge hiding or deteriorated well-being). It is highly questionable if organizations with a highly pronounced bundle of competitive HR practices will achieve organizational effectiveness assumed to result from highly consistent use of HR bundles present in configurational theorizing (Delery, 1998). Competitive HR practices might lead to a climate of cutthroat competition that, in the end, might seriously impair organizational survival as it happened in the infamous case of Enron. Enron seemed to rely heavily on competitive HR practices such as forced rankings and exorbitant incentives for a highly exclusive group of superstars. In the long run, these practices, combined with a pronounced culture of greed, contributed significantly to Enron's demise (Sims & Brinkmann, 2003). Future research might, therefore, benefit from studying the bundles of competitive HR practices in organizations with an eye on the effects of particularly highly consistent competitive HR systems on organizational outcomes such as organizational performance and effectiveness.

In this dissertation, we developed a measure of competitive HR practices that is easily adaptable to address the perspective of different informants in the organization (e.g., utilized, implemented, and perceived). In our psychometric validation procedure, we focused solely on the assessment of competitive HR practices by employees because they have been argued to be the most immediate trigger of employee attitudes and behaviors (e.g., Beijer et al., 2019; L. Nishii et al., 2008). Previous research, however, indicates that the perceptions of employees might not necessarily align with ones held by HR professionals or line managers (e.g., Den Hartog et al., 2013; Op de Beeck et al.,

2016). Future research would thus benefit from extending our insights by studying the impact of competitive HR practice from various perspectives using the measurement instruments provided in this dissertation. The implementation of multi-level, and most importantly, nested research designs that match employees to their line managers and also to units seems a particularly promising venue (Peccei & Van de Voorde, 2019). It would enable scholars to uncover whether there is a potential misalignment between how competitive HR practices were perceived, implemented, and utilized as well as the consequences of such a misalignment for employee and organizational outcomes.

This dissertation relied on the theory of social comparison processes and emotions as the underlying theoretical perspective. Our findings indicate that the social comparison lens is fruitful in explaining the controversial effect of competitive HR practices. Investigating the role of additional factors might further enhance our understanding of the (controversial) effect of competitive HR practices on employee outcomes. The next most logical step would be to conduct empirical research on other factors from our model not included in our predictive validation study (e.g., psychological capital, adaptive, or maladaptive coping strategies), to further test our propositions.

Furthermore, our model concentrated solely on emotions of malicious envy, benign envy, and inspiration as the most likely consequences of intra-team competitive HR practices, we did not assess other emotions that might also arise from being exposed to intra-team competitive HR practices. However, experiences of emotions are complex and consist of multiple emotional layers co-occurring and taking place simultaneously (Dasborough, Hannah, & Zhu, 2020). From research on envy, we know that envy is a complex emotion that is accompanied by various other negative emotions (Cohen-Charash, 2009), for example, feelings of shame, fear, resentment, or anger (Smith, 2000). Depending on the strength and intensity with which employees feel these emotions, feelings of envy or inspiration might recede to the sidelines because they get overshadowed by other emotions, for example, fearing to have to leave the organization or shame for being not able to perform better. Employees might also feel admiration, optimism, or hope instead of envy (Smith, 2000). Future research might, therefore, profit from including a broader set of emotions when studying the role of intra-team

competitive HR practices. The first step would be to conduct, for example, card-sorting studies or factorial surveys, where employees would be able to indicate and choose from various emotions they felt when faced with successes of better-off peers and connect them to their behavioral and attitudinal consequences as a result of such feelings.

Another far-fetched alternative in this regard already gaining momentum in team research would be to conduct studies that use wearable sensors or mobile sensing as data-collection tools (Chaffin et al., 2017; Harari et al., 2016) to track employee feelings (e.g., level of cortisol or adrenalin), and trigger short surveys that address what feelings employees experienced. The use of such sensor technology would enable scholars to track the emotional experiences of employees that did not get a bonus, while their colleagues did, and their behavioral reactions because of such practices. Such studies are, however, not without considerable challenges and raise various practical and ethical issues (Chaffin et al., 2017; Harari et al., 2016). With a high level of standards for ethics and security ensured, such studies might considerably enhance our understanding of the causes and consequences of structural and perceived competition for employees.

Furthermore, our propositions and our hypotheses focused on outcome variables at the individual level of analysis. Given the evidence from our work that competitive HR practices lead mainly to malicious and not benign envy or inspiration, there are few reasons to believe that competitive HR practices might make foes to friends. Research might consider applying these insights to a more collective level, to study the outcomes of such practices for teams and not only individuals. This would enrich our understanding of the potentially detrimental effects of competitive HR practices at the team level because teams might suffer considerably from such practices. Potential areas for future research might include studies that investigate the impact of competitive HR practices on team trust and team psychological safety (e.g., De Jong, Dirks, & Gillespie, 2016; Edmondson & Lei, 2014), teams' ability to learn, to adapt and to innovate, all identified as crucial for team effectiveness and success in previous research (e.g., He et al., 2014).

Future research might also consider other theories to explain the role of competitive HR practices on employee outcomes. Theories such as the conservation of resources theory

or the closely related job demands-resources model seem promising to start with (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Hobfoll, Halbesleben, Neveu, & Westman, 2018; Schaufeli & Bakker, 2004). When faced with structural competition, especially when the use of competitive HR practices is highly pronounced, employees might find themselves under intense pressure to outperform and best others. Consequently, employees might overload themselves with (additional) tasks and work long hours in an attempt to succeed in the so-called 'rat race'. In the long run, such race might deprive their energy and resources and result in a spiral of loss in resources and resource depletion (Bakker et al., 2007). Employees might feel drained and emotionally exhausted, which in consequence might likely impair other important employee outcomes such as employee well-being and performance (Bakker et al., 2007; Bennett, Bakker, & Field, 2018). An exception might be individuals high in trait competitiveness, who in contrast to those low in trait competitiveness (Newby & Klein, 2014), might thrive under competition.

As demonstrated in this dissertation, the PLS-SEM method provides a promising approach to address the measurement structure of formative higher-order constructs. Future research in HRM might use PLS-SEM to investigate and critically examine the nature of other bundles of HR practices such as the high-performance or high-commitment HR practices to test the epistemic and measurement logic underlying these bundles empirically. One potential avenue would be to conduct validation studies of these bundles, as done in this dissertation, to investigate whether the measurement structure of, for instance, the high-commitment HR practices system agrees with the formative-formative logic proposed here.

Additionally, when using SmartPLS, the software based on PLS-SEM logic, scholars can switch the mode of analysis between formative and reflective to model both formative and reflective relationships (Hair et al., 2016). This feature of the PLS-SEM and SmartPLS seems particularly useful in situations where scholars might have conflicting assumptions or are not sure about the nature of the construct at hand (e.g., formative vs. reflective). Scholars are strongly advised to rely on theory when choosing a specific measurement mode (Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003).

If in doubt about the exact nature of the construct, they might compare the different measurement models underlying the bundles of HR practices to identify which pattern and type of higher-order logic best adhere to the empirical data gathered on that bundle (e.g., reflective-formative or formative-formative).

Practical Implications

This dissertation is the very first to provide empirical evidence that single HR practices that induce competition among members of a team combined in a competitive HR practices bundle might do more harm than good. We are fully aware that the results of our work must be tested in different contexts and on additional outcomes to provide additional evidence beyond the impact on knowledge hiding and to explore additional intervening and contingent factors such as those highlighted in the previous discussion on future research.

Nevertheless, our results indicate that managers should not underestimate the impact of competitive HR practices in organizations. We found that intra-team competitive HR practices entice employees to hide knowledge from their fellow team members, a behavior that is partially attributed to feelings of malicious envy towards them. However, we could not find any support for inspiration or benign envy as potential buffers of knowledge hiding.

When designing their HR systems, managers should, therefore, be aware of the detrimental effect of competitive HR practices on knowledge hiding found in this dissertation. Organizations, particularly those that bet heavily on inducing competition through intra-team competitive HR practices, should be careful about what they wish for as such practices might result in considerable negative consequences. In organizations that rely on innovation and creativity to achieve a strategic competitive advantage, competitive HR practices should be applied with much care or (maybe) even abandoned altogether since organizations' innovative potential and employees innovative behavior has been shown to be significantly compromised by knowledge hiding (e.g., Černe et al., 2017; Černe et al., 2014).

Our measure of competitive HR practices gives managers a tool to diagnose the HR systems for the degree of 'competitiveness' present in such an HR system. Having said this, we would like to encourage leaders and managers to use the measurement instrument provided here to conduct their own 'company centered' research. We recommend doing so at different levels and from different perspectives (managers, employees). This approach will better equip them to make more informed decisions in their organizations. It will enable them to identify when and whether the competitive HR practices work in a way that their organization or their managers expect them to work; or whether they are at risk of running havoc – to undermine employees and organizational outcomes.

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APPENDICES

Appendix A: Interview Guideline „Internal competition through HR practices "

Interview opening

Welcoming and thanking for participation

Background and purpose of the interview: From recent discussions in the field of strategic HR management we know that companies rely on different HR practices to boost employees' performance, engagement and creativity: Some use HR practices that inspire competition within and among teams, whereas others prefer practices that strengthen inter- and intra-team collaboration. However, little is known about how and which HR practices companies in Switzerland use to reassure employees and organizational performance. In our interview, we would thus like to gather insights on how these HR practices are used in your company.

Interview procedure

Duration ca. 30 min

Requesting for consent:

- to record the interview

Clarifying the confidentiality issues:

- anonymity will be guaranteed
- the information will be used for scientific research purposes only
- the information will not be disclosed to any other third party
- *Signing the declaration of consent*

Collecting personal and contact data

HR practices that inspire competition

As already mentioned, to achieve success some companies strengthen team spirit and collaboration among their employees and teams/units:

There are also companies that strongly rely on strengthening internal competition in the workplace:

- Based on your previous experience with HR practices, what do you think, which practices inspire internal competition among employees and teams/units?
- To what extent do you consider these things as important for your company?
    - If yes, why are they important? If no, why are they not?

- Looking at concrete HR practices in your company,
    - Which HR practices do you use to inspire competition among employees within teams?
    - Which HR practices do you use to inspire competition among teams/units?

- All in all, looking at internal competition in your company, do you see any potential for improvement?

Healthy competition

- Do you think that companies can encourage both, competition and collaboration at the same time?

Concluding remarks:

- Thanking for participation and time spent on the interview!!!
- Asking for further questions and comments on the topic as well as interview feedback
- Highlighting further project steps and data proceedings, providing contact information

Notification: Based on the interview data we will prepare a list of HR practices. We would like to send this list to you so that you will have the possibility to specify the scope and intensity with which these practices are employed in your company. This questionnaire can be also filled in by somebody from your team. The completion of the questionnaire will take no longer than 5 minutes. Would you permit/allow us to send this list to you?

Appendix B: Qualitative Content Analysis

Table 19. Intra-team Competitive HR Practices - Illustrative Excerpts, First-Order Codes for the Second-Order Theme Performance Evaluation

Illustrative excerpts for first-order concepts	**First-order concept**	**Second-order theme**
Setting quantitative (measurable) & individual goals: If you have a performance appraisal process where employee achievement and employee compensation is strongly defined by certain comparative numbers such as KPIs, individual revenues or number of acquired customers […] than naturally, you enforce competition. (IP_5) For me, it's quite clear. I think you can really exert influence is when you compare, yes, via production figures, via, yes, a corresponding output, via certain key performance indicators. That communication is also clear and open, really forms groups, for example, levels among each other to create competition. I can use such procedures to generate competition. (IP_15) So we have made different pots where we say he has to sell so and so much [anonym.], to get a maximum commission. It's a kind of competition, if you will, totally, you can measure it and it's transparent. So the pressure is enormous. (IP_17) I: Are there also competitive components. Not externally, but between the co-workers? T: Not really, because we do not have that when it comes to the MBO. In trading, for our senior traders, we, of course, have certain clear goals. But these are a combination of individual targets and commission targets. So at the end of the day, the division goal also counts and he's part of the team again." (IP_21) because you also set individual goals and employees want to develop, you promote competition. (IP_6)	• Setting quantitative/ measurable goals • Setting individual goals	Performance Evaluation
Use of forced rankings: So it was a small facet why I decided to change years ago. One facet of my former employer was that they used a really forced ranking, so you have to have 10 percent "bad", 60 percent in the stable middle, 20 percent "good" and 10 percent "top", and that was slavishly enforced. It is a bit of a Darwinian competitive culture that one would promote. (IP_5) Now, we have heard for 20 years or so long that internal competition is harmful. What we're not doing is, then, now perhaps quite an extreme form of competition, that we're suddenly introducing forced rankings (IP_24)	• Use of forced rankings	
Use of "guided" rankings: Now talking about performance management. We have that too. We don't have a forced distribution. We have a guided distribution. I: Okay, interesting, guided? IP: Guided actually works by saying that we don't force anyone to break through this distribution, but we say:	• Use of guided rankings	

Look, you just have to be aware of what kind of distribution we're actually looking for. If you don't, you'll have to account for it and maybe do it better next time. We don't force you to correct your rating just to get distribution. This is what guided means. (IP_12) We expect our managers to clearly address the critical feedback from employees who fail to achieve some of their goals. But we don't dictate: "You have to have 15 out of 100 people in a rating of 2", that's not how we do it. So we don't have forced distribution, but an expectation of differentiation. (IP_25) "(In a guided distribution) employees compare themselves, they feel that they have been treated unfairly. The argument that with such things like difficult project situation, and so on. I do not perceive such a system to be advantageous or motivating for the organization. Thus, I could well imagine a forced distribution, really forced". (IP_6) **Use of (other forms of) relative rankings:** The child has different names[e.g. human capital, human competence, people portfolio], but it's always the same. The next higher level exchanges information about the potential and performance of the individual employees. There are then XY fields, XY fields, depending on how many criteria you use; you have performance A, B, C. Potential 1, 2, 3. B2 is so the middle, that is so the employee who performs, who has good potential. Then there are the stars, above-average potential, and above-average performance. Then there is the 1A, where you think about what happens to those who do not perform (IP_14) We have a simplified ranking there with simple ratings, A, B, C. So then, A would be plus, B would be on the medium and C would be not qualified, accordingly. I: What is the level of autonomy a supervisor has when classifying people into these categories? Is there a rule that he has to rank a certain percentage of employees as high performers, the rest as medium or low performers - in the sense of a forced ranking? IP: No, we do not have forced rankings. Supervisors have the autonomy to decide. Yes. (IP_13) **Reports that compare employee results:** If you have a performance appraisal process where employee achievement and employee compensation is strongly defined by certain comparative numbers such as KPIs, individual revenues or number of acquired customers and use this number for your periodic reports, communicate them across the company or across divisions than, naturally, you enforce competition. (IP_5) I think that transparent recording and presentation of performance, whether of individual employees or of teams, can be a competitive factor (IP_13) **Formal display of employee results to others in a team:** In the past, we had it [employee results] even somewhere on some board, where their names were displayed. But we have refrained from that again. (IP_17) I think that transparent recording and presentation of performance, whether of individual employees or of teams, can be a competitive factor (IP_13)	• Use of other forms of relative rankings • Use of reports that assess relative employee performance • Formal display of employee results in the team (e.g. weekly newsletter or display boards) • Formal communication of	

Formal communication of employee results to others in a team (e.g., in a team meeting): Then of course in team meetings with supervisors, where he tries to motivate team members, their performances are presented to each other, which gives a certain peer pressure. (IP_14) For me, it's quite clear. I think you can really exert influence is when you compare, yes, via production figures, via, yes, a corresponding output, via certain key performance indicators. That communication is also clear and open, really forms groups, for example, levels among each other to create competition. I can use such procedures to generate competition. (IP_15) **Relative performance feedback:** There is really this competition, where groups or an individual, who presents something, who is evaluated there and who then also sees how his colleagues perform and is then also involved in the whole feedback, that is partly a tough thing (IP_14)	employee results in the team • Relative performance feedback	

Table 20. Intra-team Competitive HR Practices - Illustrative Excerpts, First-Order Codes for the Second-Order Theme Compensation

Illustrative excerpts for first-order concepts	First-order concept	Second-order themes
A compensation system that has a significant variable component/bonus in it: We do have a variable pay component within the company. We have never had a forced distribution here, we have never paid a bonus here of a magnitude that is two, three or four times the fixed pay component, We do have a magnitude of 30 percent for sales, but in general, the variable component is between 5 and 10 percent of the fixe pay (IP_24) If you take the use of incentives as inducing competition, then we have that. (IP_6) Now we have heard 20 years or so long that internal competition is harmful. What we're not doing is, then, now perhaps quite an extreme form of competition, that we're suddenly introducing forced rankings or that we're suddenly introducing huge bonuses or that we're now virtually leading the subject of performance in an extreme form.(IP_24) **Use of rankings/ rank order employees to determine whom and how much reward to grant:** I think competition among employees is absolutely there. And it has to be there. I can only give one or two in the, let us say, a very high rating in performance management. I cannot rate them all highly. And so, of course, it has a financial impact. This means that everyone naturally tries to be a bit better than the other so that they can benefit from it afterward." (IP_18) "We have a flexible part, an incentive, which varies slightly depending on the level. That ranges from 20 to 6 percent. And the ranking for the goals actually, for the achievement of the goals also then influences the payment of the incentive. (IP_6) **Salary/Bonus determined by how well an employee performed in comparison to his peers:** Yes, well, I think simply by the performance management system of course. The more the employee receives a rating from his superior at the end of the year, A, B, C, D, E, from "very good" to "insufficient" to "meets expectations", this performance rating of course also has an influence on the annual salary round, that's clear. The higher or better they perform, the higher the salary, which creates competition, for example. This is one of the traditional instruments (IP_14) And it then has a model behind it, like the bonus, the individual factor is calculated. And that means, for a good performer have/that means, the individual factor is 150, the business factor 130, then that is: 1.3 times 1.5 the bonus. For the weak performer, it is 0.5 times the 1.3 and then multiplicatively the bonus is influenced. (IP_1)	• A compensation system that has a significant variable component to it • Use performance rankings/ rank-ordering employees to determine whom and how much reward to grant • Salary/bonus determined by how well an employee performed in comparison to peers	Compensation

Bonuses are given on the basis of predefined objectives to be achieved: So for me personally, I must say, the awarding of bonuses is such an example [of competition]. So whenever somehow holds out the prospect of monetary things, I am not sure if it is a competition alone, but it is not motivating. Yes, especially when I promise premiums in advance for certain specific projects, expectations arise. (IP_15) **Individual bonuses/bonuses for individual performance:** IP: Yes, absolutely. So I don't think you'll find a similar [anonymous] large corporation that/ So if someone says there that that's not the case, then I'll always question that. Because this industry is a highly competitive industry. So you want, you need people who also want to outperform individually. That means we also have our motto for Pay, is Pay for Performance."(IP_25) Performance appraisal has been used as a bonus distribution tool for many years. And in the situation we are in now, that is wrong. We have to bring it back to its proper purpose in order to have the right dialogue about performance and behavior. We are now in our second year of doing this under the new aspect. […] And this will only work if we continue to integrate it in this way. And of course the reward at the end. If we do a promotion or if we pay a bonus for individual performance, but not for those who participate in cooperation, then we get it wrong. (IP_1)	• Bonuses are given on the basis of predefined objectives to be achieved (ex-ante) • Individual bonuses/bonuses for individual performance	

Table 21. Intra-team Competitive HR Practices - Illustrative Excerpts, First-Order Codes for the Second-Order Theme Recognition

Illustrative excerpts for first-order concepts	First-order concept	Second-order theme
Recognitions for outperforming others: I only know about my previous employer, where they awarded various prizes. There you have the best manager, the best idea and so on, you could make different nominations. And so, of course, all functions were nominated. (IP_10) **Recognition with non-monetary prizes:** It's a bit American. Well, there really is, we've been an American company since last year, we belong to an American corporation. Yes, they just play a bit differently, have more awards and so now they've already started. But for us it's more about non-cash prizes and stuff like that, individually, but not about highlighting individual persons in comparison to others. (IP_20) **Recognition with monetary prizes:** I am almost tempted to say, it is "Hollywood-like", this is us in another world, there's celebrating, there's an official speech, and now in the room so and so much with so and so many points Mr. XY or Mrs. YZ. And they also get a bonus, on the one hand for themselves, on the other hand for their agency, to strengthen the sense of unity a little bit. And thirdly, they all get to take part in an exclusive trip that is made for them (IP_17) And there we will celebrate a big innovators' meeting, which is accompanied by media and lasts a whole day, where the innovators can present their innovations in detail, where there are boots and where you can go. And in the evening there are celebrations and recognition, i.e. shaking hands, and also a financial reward behind it. (IP_24) So the employees should also be proud, they should also receive recognition if they were particularly good, therefore we have spontaneous bonuses, success bonuses as an additional financial instrument. (IP_14) **Recognition for a limited number of employees & Public celebrations to recognize the best performers:** And in sales, there's the so-called top-five event. That's the 5 percent of the best salespeople, not the five best salespeople, but the 5 percent of the entire workforce that are awarded. (IP_17) once a year there is the Oscar Night, where the ten best are awarded for the year. And that generates a lot of buy-ins and it also generates competition, so people want to win those awards. (IP_25) I am almost tempted to say, it is "Hollywood-like", this is us in another world, there's celebrating, there's an official speech, and now in the room so and so much with so and so many points Mr. XY or Mrs. YZ. And they also get a bonus, on the one hand for themselves, on	• Recognitions for outperforming others • Recognition with non-monetary prizes • Recognition with monetary prizes • Recognition for a limited number of employees • Public celebrations to recognize employees	Recognition

the other hand for their agency, to strengthen the sense of unity a little bit. And thirdly, they all get to take part in an exclusive trip that is made for them (IP_17) And there we will celebrate a big innovators' meeting, which is accompanied by media and lasts a whole day, where the innovators can present their innovations in detail, where there are boots and where you can go. And in the evening there are celebrations and recognition, i.e. shaking hands, and also a financial reward behind it. (IP_27) There is also, but this is really only in sales, there is a so-called President Club. It's at the descretion of the CEO. Top performers are welcomed there in a big way. (IP_10) **Recognition with a symbolic aspect to it:** It is important that successes are recognized throughout the company. And they do not necessarily have to be rewarded with bonuses, but at least that is presented internally or externally. (IP_13) Let me go first, it just occurred to me now that I just signed ten certificates earlier. For example, we also reward those who are most committed to volunteering. They will then also be published. That means they get a certificate. They will then be published on the intranet. (IP_13) So the employees should also be proud, they should also receive recognition if they were particularly good, therefore we have spontaneous bonuses, success bonuses as an additional financial instrument. (IP_14)	• Symbolic Recognition	

Table 22. Intra-team Competitive HR Practices - Illustrative Excerpts, First-Order Codes for the Second-Order Theme Other Practices

Illustrative excerpts for first-order concepts	First-order concept	Second-order theme
Training and development for high-performer: Or as part of employee development, you may give the employee additional training because he is really good, you invest in him, he may be able to travel to another country to gain experience there. For example, we have an exchange program where employees can go anywhere for eight to twelve weeks. So now I also have an HR employee who was then three months in America. (IP_14) **(Exclusive) Talent Management:** What else have we forgotten? In the environment? All that we may have forgotten, which also a little bit of competitive thinking, is talent management. (IP_18) Of course, this also includes talent management, people who engage in the desired behavior and show openly, of course, this is also reflected in promotion, this is reflected in talent management (P_18) Is maybe a little banal, and this is a part where we then try to specifically target talents who, due to their profile and background, have the chance to develop across divisions, who also work through so-called quasi talent markets, and to push development planning there also from HR (IP_5) We also have young professionals programs, we have middle management programs. We have different things where people with potential and talent / that we also develop (IP_11) **Promotion:** Of course, this also includes talent management, people who engage in the desired behavior and show openly, of course, this is also reflected in promotion, this is reflected in talent management (P_18) **(Idea)Contests between employees:** And that is why competition between ideas is needed, where one has to say which idea is actually the best? But once you've decided that, partnering is needed again. And this balance, that one can say, I was a competitor before, I had another idea, now we have decided, now we have to work together to implement this idea, this ability is central. (IP_1) **Gamification:**	• Training/development offered and available to the best performer • (Exclusive)Talent Management • Promotion of stars or talents • Contest between employees (e.g., for best ideas) • Use of gamification tools	Other Practices

We have an internal tool, there the answers are evaluated, employees who receive good ratings, get the questions or get more questions. So the knowledge is shared, the get rated. And the knowledge becomes more and more valuable. So that is why it's called "XY" (IP_12)		

Table 23. Inter-team Competitive HR Practices - Illustrative Excerpts, First-Order Codes for Second-Order Themes

Illustrative excerpts for first-order codes	First-order concept	Second-order themes
Use of quantitative (measurable) numbers/performance indicators: So for me, it's quite clear, I believe that where you can really influence this is when you either compare teams or units, yes, via production figures, via KPIs. Also, to communicate them clearly and openly, really I can create competition through such measures. (I_15) Competition in teams or between teams is driven with certain key figures, with comparability, with constant benchmarks, mutually, and so on (I_26) **Comparisons of teams with each other & ranking teams against each other:** So, what we do is when we look at all the quarterly figures of the teams together, for example, we deliberately include the figures of the other teams and we also tell the team how they compare to the others. (I_8) then of course with the corresponding league tables, with corresponding quasi-periodic reports, which are then used more widely in the company or in one area, this naturally has a very competitive part in it (I_5) **Reports that compare, communicate or formally display team results to other teams:** then of course with the corresponding league tables, with corresponding quasi-periodic reports, which are then used more widely in the company or in one area, this naturally has a very competitive part in it (I_5) I think that transparent recording and presentation of performance, whether of individual employees or of teams, can be a competitive factor (IP_13) **Relative performance feedback:** There is really this competition, where groups or an individual, who present something, are evaluated and also see how colleagues perform and is then also involved in the whole feedback, that is partly a tough thing (IP_14)	• Use of quantitative numbers and performance indicators • Use of relative comparisons between team/ Ranking teams against each other • Use of reports that assess relative team performance • Formal display of employee results between teams (e.g. weekly newsletter or display boards) • Formal communication of team results between teams • Relative performance feedback	Performance Evaluation
Recognition: And the best [mentioned in connection to teams] will then be honored on a stage with an evening event and appreciation. I think that's the main part of it. They get awards. (IP_12)	• Public Celebrations • Recognitions for outperforming other teams	Recognition

	• Recognitions based on relative comparison with other teams	
Team contests & public celebrations: The same project is transferred to two or three groups. And the groups present it to the group management after half a year. And the group management then decides what project group performed best. (I_14)	• Team Contests	Other Practices

Appendix C: Content Validity Assessment

Table 24. Content Validity Assessment of the Intra-team Competitive HR Practices

	Exp1	Exp2	Exp3	Exp4	Exp5	Exp6	Exp7	Exp8	Exp9	Exp10	Exp11	Exp12	Exp13	Exp14	Agreement (absolute)	I-CVI (≥ 0.78)	S-CVI/Ave (≥ 0.80)	Pc	Kappa*
PerfEval_1	2	3	1	1	3	3	3	2	4	2	2	3	4	4	8	0.57		0.00391	0.56831
PerfEval_2	4	4	1	1	3	4	3	3	4	2	2	4	4	4	10	0.71		0.00098	**0.70972**
PerfEval_3	4	4	3	4	4	3	4	4	4	4	4	4	4	4	14	**1.00**		0.00006	**1.0000**
PerfEval_4	4	4	3	4	4	4	4	4	4	4	4	4	3	4	14	**1.00**		0.00006	**1.0000**
PerfEval_5	4	4	2	3	3	3	4	3	3	1	3	3	3	3	12	**0.86**		0.00024	**0.85997**
PerfEval_6	4	4	3	3	4	4	4	4	4	2	4	4	3	4	13	**0.93**		0.00012	**0.92999**
PerfEval_7	4	3	1	3	2	3	4	4	4	3	2	3	4	4	11	**0.79**		0.00049	**0.78990**
PerfEval_8	4	4	2	3	4	4	4	4	4	3	3	4	4	4	13	**0.93**		0.00012	**0.92999**
PerfEval_9	4	3	3	3	4	3	4	4	3	3	4	4	3	4	14	**1.00**		0.00006	**1.0000**
PerfEval_10	4	3	3	3	4	3	4	4	3	2	4	4	3	4	13	**0.93**		0.00012	**0.92999**
																	0.87		
Comp_1	4	4	3	4	4	4	4	4	4	3	4	4	4	4	14	**1.00**		0.00006	**1.0000**
Comp_2	3	4	3	4	4	4	3	3	4	3	4	3	4	4	14	**1.00**		0.00006	**1.0000**
Comp_3	4	4	4	4	4	4	4	3	4	2	4	4	4	4	13	**0.93**		0.00012	**0.92999**
Comp_4	4	4	4	4	4	4	4	4	3	2	4	4	3	4	13	**0.93**		0.00012	**0.92999**
Comp_5	4	3	1	4	2	3	3	3	4	1	2	3	3	3	10	0.71		0.00098	**0.70972**
Comp_6	4	3	1	2	2	3	3	3	4	1	3	4	3	3	10	0.71		0.00098	**0.70972**
Comp_7	4	4	3	4	4	4	4	4	4	3	3	4	4	4	14	**1.00**		0.00006	**1.0000**
Comp_8	4	4	2	2	4	4	4	3	4	4	3	3	3	4	13	**0.93**		0.00012	**0.92999**
Comp_9	4	1	1	1	2	3	3	2	2	1	2	3	3	1	5	0.36		0.03125	0.33935
Comp_10	4	3	2	1	3	3	4	2	3	2	2	3	4	2	8	0.57		0.00391	0.56831
																	0.81		

Note: N = 14.

I-CVI = item-level content validity, S-CVI (Average) = scale-level content validity, Pc = probability of chance agreement, K* = modified kappa agreement. *(continues)*

	Exp1	Exp2	Exp3	Exp4	Exp5	Exp6	Exp7	Exp8	Exp9	Exp10	Exp11	Exp12	Exp13	Exp14	Agreement (absolute)	I-CVI (≥ 0.78)	S-CVI/Ave (≥ 0.80)	Pc	Kappa*
Rec_1	4	4	2	1	4	4	4	3	4	3	2	3	4	4	11	**0.79**		0.00049	**0.78990**
Rec_2	4	4	1	1	4	4	4	3	3	3	3	3	3	4	12	**0.86**		0.00024	**0.85997**
Rec_3	4	4	3	1	4	3	4	4	3	2	3	4	4	4	12	**0.86**		0.00024	**0.85997**
Rec_4	4	4	3	1	4	4	4	4	4	1	4	3	4	4	12	**0.86**		0.00024	**0.85997**
Rec_5	3	4	3	1	4	4	4	3	2	2	4	3	3	4	11	**0.79**		0.00049	**0.78990**
Rec_6	4	4	3	1	4	3	4	4	2	2	3	2	3	4	11	**0.79**		0.00049	**0.78990**
Rec_7	3	3	1	1	4	3	4	3	2	4	3	2	3	3	11	**0.79**		0.00049	**0.78990**
Rec_8	3	2	1	1	2	3	3	2	2	1	2	3	3	1	5	0.36		0.03125	0.33935
Rec_9	3	2	1	1	2	3	2	2	2	3	2	4	2	2	4	0.29		0.06250	0.24267
																	0.71		
Prom_1	4	3	2	4	1	4	3	2	4	1	4	4	4	3	10	0.71		0.00098	**0.70972**
Prom_2	4	4	3	4	4	4	4	3	4	3	4	4	4	4	14	**1.00**		0.00006	**1.0000**
Prom_3	4	3	3	4	4	4	4	4	4	3	4	4	4	4	14	**1.00**		0.00006	**1.0000**
																	0.90		
CareerDev_1	4	3	2	4	3	3	3	3	3	1	4	3	3	4	12	**0.86**		0.00024	**0.85997**
CareerDev_2	4	3	2	4	4	3	3	4	3	1	4	4	3	4	12	**0.86**		0.00024	**0.85997**
CareerDev_3	4	3	3	4	3	4	3	3	3	1	4	3	3	4	13	**0.93**		0.00012	**0.92999**
																	0.88		
TalentMan_1	4	4	1	4	2	3	3	3	2	4	4	3	3	3	11	**0.79**		0.00049	**0.78990**
TalentMan_2	4	4	3	4	4	4	3	4	3	4	4	4	3	4	14	**1.00**		0.00006	**1.0000**
TalentMan_3	4	4	1	4	4	3	3	3	2	4	4	3	3	3	12	**0.86**		0.00024	**0.85997**
TalentMan_4	4	4	2	4	4	4	3	4	2	3	4	4	3	4	12	**0.86**		0.00024	**0.85997**
																	0.88		

Note: N = 14.

I-CVI = item-level content validity, S-CVI (Average) = scale-level content validity, Pc = probability of chance agreement, K* = modified kappa agreement. *(continues)*

	Exp1	Exp2	Exp3	Exp4	Exp5	Exp6	Exp7	Exp8	Exp9	Exp10	Exp11	Exp12	Exp13	Exp14	Agreement (absolute)	I-CVI (≥ 0.78)	S-CVI/Ave (≥ 0.80)	Pc	Kappa*
Others_1	3	1	1	1	2	2	3	2	3	1	2	2	3	2	4	0.29		0.06250	0.24267
Others_2	4	3	1	4	2	3	4	3	3	1	2	3	3	4	10	0.71		0.00098	**0.70972**
Others_3	4	2	2	4	4	4	4	4	3	4	2	3	2	4	10	0.71		0.00098	**0.70972**
Others_4	4	3	3	4	4	3	4	2	2	3	2	2	2	4	9	0.64		0.00195	0.63930
Others_5	3	2	1	1	4	3	2	2	3	2	3	4	2	2	6	0.43		0.01563	0.42095
Others_6	3	2	1	1	4	3	2	2	3	2	3	3	2	3	7	0.50		0.00781	0.49606
Others_7	3	2	1	1	4	3	3	2	2	2	3	3	2	3	7	0.50		0.00781	0.49606
Others_8	3	2	1	1	4	3	3	2	4	2	3	4	2	4	8	0.57		0.00391	0.56831
																	0.54		
Intra-team Competitive HR Practices (Overall, excl. others)																	**0.83**		

Note: N = 14.

I-CVI = item-level content validity, S-CVI (Average) = scale-level content validity, Pc = probability of chance agreement, K* = modified kappa agreement.

Table 25. Content Validity Assessment of the Inter-team Competitive HR Practices

	Exp1	Exp2	Exp3	Exp4	Exp5	Exp6	Exp7	Exp8	Exp9	Exp10	Exp11	Exp12	Exp13	Exp14	Agreement (absolute)	I-CVI (≥ 0.78)	S-CVI/Ave (≥ 0.80)	Pc	Kappa*
PerfEval_1	4	4	3	3	4	4	4	3	4	2	4	4	4	4	13	**0.93**		0.00012	**0.92999**
PerfEval_2	4	4	3	3	1	3	4	3	4	2	4	4	3	4	12	**0.86**		0.00024	**0.85997**
PerfEval_3	3	2	1	1	1	4	4	2	3	1	2	3	2	2	5	0.36		0.03125	**0.33935**
PerfEval_4	4	4	2	3	2	4	3	3	4	3	3	3	3	4	12	**0.86**		0.00024	**0.85997**
PerfEval_5	4	3	3	3	2	4	4	3	4	4	3	3	3	4	13	**0.93**		0.00012	**0.92999**
PerfEval_6	4	3	3	3	4	4	4	3	3	2	3	3	3	4	13	**0.93**		0.00012	**0.92999**
PerfEval_7	4	3	3	3	4	4	4	3	3	3	3	4	3	4	14	**1.00**		0.00006	**1.0000**
																	0.84		
Comp_1	2	2	1	1	2	3	4	2	4	4	2	3	3	1	6	0.43		0.01563	0.42095
Comp_2	2	2	1	1	2	3	4	2	4	2	3	3	4	1	6	0.43		0.01563	0.42095
Comp_3	4	4	3	2	4	4	4	4	4	3	4	4	4	4	13	**0.93**		0.00012	**0.92999**
Comp_4	4	4	3	2	4	4	4	4	4	1	4	4	4	4	12	**0.86**		0.00024	**0.85997**
Comp_5	4	4	3	2	4	4	4	4	4	3	4	4	4	4	13	**0.93**		0.00012	**0.92999**
Comp_6	4	3	2	2	3	4	4	3	4	4	4	3	3	4	12	**0.86**		0.00024	**0.85997**
Comp_7	4	3	2	2	4	3	4	3	3	2	3	4	3	3	11	**0.79**		0.00049	**0.78990**
																	0.75		
Rec_1	4	4	2	1	4	3	3	3	2	2	3	3	4	4	10	0.71		0.00098	**0.70972**
Rec_2	3	3	1	3	4	4	3	2	2	4	4	4	4	4	11	**0.79**		0.00049	**0.78990**
Rec_3	4	4	2	2	2	3	4	3	2	2	4	4	4	4	9	0.64		0.00195	0.63930
Rec_4	3	3	2	1	3	3	4	3	2	4	3	3	3	2	11	**0.79**		0.00049	**0.78990**
Rec_5	4	4	3	1	4	3	4	4	2	4	3	2	4	3	11	**0.79**		0.00049	**0.78990**
																	0.74		
Others_1	4	3	3	1	4	3	4	3	2	1	2	3	3	4	10	0.71		0.00098	**0.70972**
																	0.71		
Inter-team Competitive HR (Overall, excl. others)																	**0.76**		

Note: N = 14.

I-CVI = item-level content validity, S-CVI (Average) = scale-level content validity, Pc = probability of chance agreement, K* = modified kappa agreement.

Appendix D: Exploratory Factor Analysis for Measures of Malicious Envy, Benign Envy and Inspiration

Table 26. Test of Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Malicious Envy	.125	535	.000	.917	535	.000
Benign Envy	.089	535	.000	.969	535	.000
Inspiration	.079	535	.000	.961	535	.000
Evasive Hiding	.168	535	.000	.868	535	.000
Playing Dumb	.193	535	.000	.829	535	.000
Rationalized Hiding	.281	535	.000	.721	535	.000
Task Interdependence	.100	535	.000	.958	535	.000
Social Comparison Orientation	.053	535	.001	.993	535	.011
Competitive Orientation	.073	535	.000	.975	535	.000
Envy (Disposition)	.110	535	.000	.944	535	.000

a. Lilliefors Significance Correction

Table 27. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.864
Bartlett's Test of Sphericity	Approx. Chi-Square	2461.939
	df	66
	Sig.	.000

Table 28. Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.183	43.194	43.194	4.875	40.628	40.628	4.739
2	3.119	25.989	69.182	2.735	22.790	63.418	2.930
3	.935	7.788	76.971				
4	.544	4.533	81.504				
5	.529	4.409	85.913				
6	.386	3.216	89.129				
7	.325	2.709	91.838				
8	.278	2.319	94.156				
9	.244	2.034	96.190				
10	.208	1.730	97.920				
11	.152	1.267	99.187				
12	.098	.813	100.000				

Extraction Method: Principal Axis Factoring

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

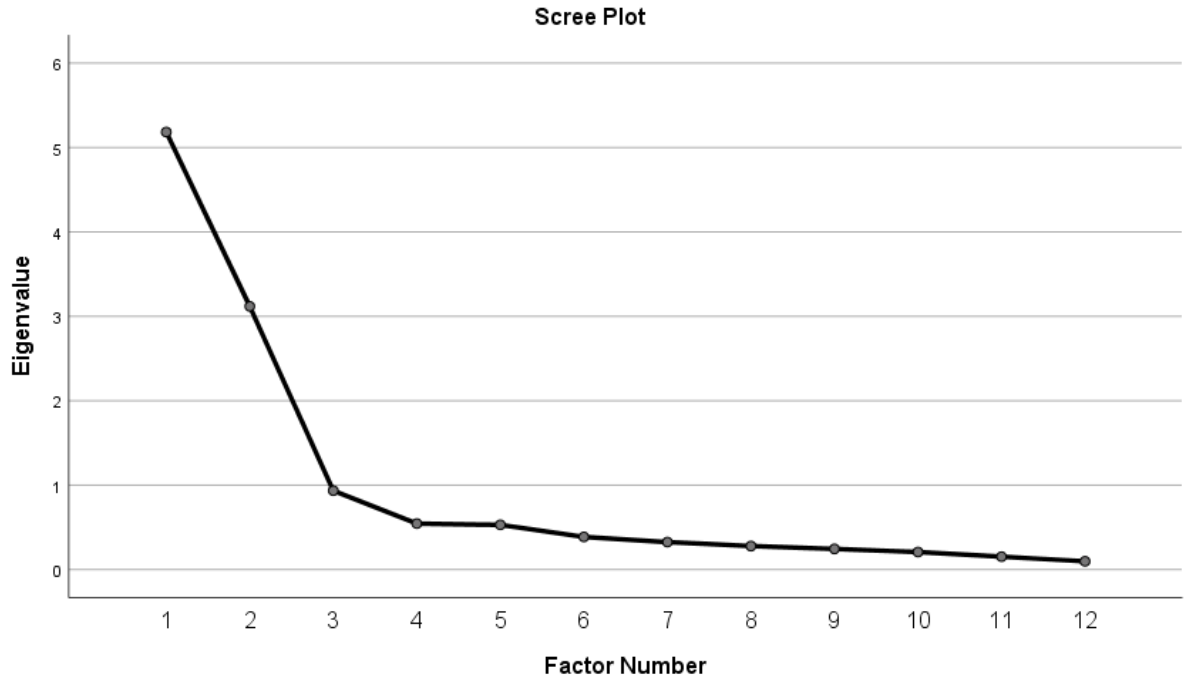

Figure 4. Scree Plot

Table 29. Results of the Exploratory Factor Matrix

Factor Matrix		
	Factor	
	1	2
I felt deep longing to achieve the same.	.176	.489
I wanted to work harder to get a similar advantage.	**.668**	.279
I devised a plan to obtain the same achievement as well.	**.654**	.385
The achievements of the person motivated me to become just like him/her.	**.736**	.212
I complained to someone else about the person.	-.299	**.641**
I felt hostile towards the person.	-.363	**.814**
I secretly wished that the person would lose his/her advantage.	-.347	**.766**
I felt hatred towards the person.	-.253	**.735**
I experienced inspiration in this situation.	**.849**	.118
The person's achievements inspired me.	**.889**	.071
I was inspired to do something.	**.855**	.061
I felt inspired.	**.884**	.049

Extraction Method: Principal Axis Factoring, 2 factors extracted. 6 iterations required.

Table 30. Results of Parallel Analysis

Raw Data Eigenvalues		Random Data Eigenvalues		
Root	Eigen.	Root	Means	Prcntyle
1.000000	4.903079	1.000000	.321166	.416053
2.000000	2.712988	2.000000	.219254	.292499
3.000000	.535106	3.000000	.140773	.196563
4.000000	.099527	4.000000	.075487	.126271
5.000000	.089275	5.000000	.015871	.055158
6.000000	-.000792	6.000000	-.041431	-.000952
7.000000	-.036708	7.000000	-.096381	-.059306
8.000000	-.057732	8.000000	-.154135	-.113460
9.000000	-.076523	9.000000	-.219966	-.168840
10.000000	-.097186			
11.000000	-.150261			
12.000000	-.158729			

Appendix E: Confirmatory Factor Analysis for Measures of Malicious Envy, Benign Envy and Inspiration

Table 31. Measurement Model of Malicious Envy, Benign Envy and Inspiration

Measurement Model	**Uncorrelated Residuals Solution**					**Correlated Residuals Solution**				
	$\chi 2$ (df)	p-value	χ^2/df	CFI	RMSEA (Pclose)	$\chi 2$ (df)	p-value	χ^2/df	CFI	RMSEA (Pclose)
Model 1: Three-Factor Model	192,784 (41)	.000	4.702	.931	.12 (.000)	159.016 (40)	.000	3.975	.946	.107 (.000)
Model 2: Two-Factor Model	298,218 (43)	.000	6.935	.884	.151 (.000)	104.856 (38)	.000	2.759	.970	.082 (.003)

Good Fit	$\chi 2 \leq 2df$	$.05 < p \leq 1.00$	$0 \leq \chi 2/df \leq 2$	$.97 \leq CFI \leq 1.00$	$0 \leq RMSEA \leq .05$
Acceptable Fit	$2df < \chi 2 \leq 3df$	$.01 \leq p \leq .05$	$2 < \chi 2/df \leq 3$	$.95 \leq CFI < .97$	$.05 < RMSEA \leq .08$

Note: CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation; RMSEA confidence interval values are not available for bootstrapping.

Appendix F. Detailed Depiction of the Results of Model Analysis

Table 32. A Detailed Overview of the PLS-SEM Results for Model 1

Step 1	**Baseline Model (Model 1)**									***Step 2***	**Baseline Model (Model 1)**								
	Evasive Hiding			**Playing Dumb**			**Rationalized Hiding**				**Evasive Hiding**			**Playing Dumb**			**Rationalized Hiding**		
	β	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**			**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**	
Step 1: CV		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**			**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Envy (Disposition)	0.348***	0.271	0.434	0.273***	0.195	0.365	0.326***	0.256	0.429	0.256***	0.165	0.322	0.205***	0.106	0.282	0.213***	0.136	0.293
Social Comparison Orientation	-0.091	-0.196	0.134	-0.093	-0.205	0.133	-0.127	-0.259	0.138	-0.087	-0.171	0.134	-0.090	-0.187	0.141	-0.123	-0.212	0.121
Competitive Orientation	0.086*	0.001	0.170	0.050	-0.048	0.147	0.157***	0.092	0.239	0.007	-0.074	0.077	-0.011	-0.101	0.070	0.056	-0.004	0.132
Task Interdependence	-0.032	-0.126	0.051	-0.042	-0.142	0.052	-0.091*	-0.172	-0.016	-0.024	-0.102	0.054	-0.033	-0.124	0.055	-0.077*	-0.143	-0.006
Gender	0.093*	0.006	0.175	0.087	-0.010	0.175	0.085	-0.002	0.158	0.054	-0.031	0.121	0.055	-0.040	0.129	0.032	-0.046	0.093
Tenure	-0.053	-0.121	0.017	-0.060	-0.147	0.031	-0.086*	-0.157	-0.014	-0.048	-0.104	0.021	-0.055	-0.137	0.042	-0.078*	-0.148	0.002
Education Level	0.064	-0.010	0.138	0.026	-0.054	0.110	-0.007	-0.080	0.073	0.068*	0.005	0.128	0.029	-0.043	0.103	-0.002	-0.063	0.060
Step 2: IV																		
Intra-team Competitive HR Practices										**0.357*****	0.311	0.487	**0.271*****	0.218	0.416	**0.448*****	0.394	0.556
$adj\ R^2$	**0.154*****	0.114	0.234	**0.099*****	0.067	0.180	**0.185*****	0.134	0.280	**0.265*****	0.155	0.296	**0.162*****	0.09	0.184	**0.360*****	0.203	0.410
$\Delta\ adj\ R^2$										**0.11**			**0.063**			**0.175**		

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.

Note: β = standardized beta coefficient, CV = control variable, IV = independent variable.

Table 33. A Detailed Overview of the PLS-SEM Results – Model Comparison between Model 1 and Model 2

	Baseline Model (Model 1)									***Partial Mediation Model by Malicious Envy (Model 2)***								
	Evasive Hiding			**Playing Dumb**			**Rationalized Hiding**			**Evasive Hiding**			**Playing Dumb**			**Rationalized Hiding**		
	β	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**	
CV		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Envy (Disposition)	0.256***	0.165	0.322	0.205***	0.106	0.282	0.213***	0.136	0.293	0.154***	0.069	0.233	0.089	-0.004	0.181	0.181***	0.106	0.275
Social Comparison Orientation	-0.087	-0.171	0.134	-0.090	-0.187	0.141	-0.123	-0.212	0.121	-0.077	-0.159	0.109	-0.080	-0.178	0.114	-0.117	-0.215	0.117
Competitive Orientation	0.007	-0.074	0.077	-0.011	-0.101	0.070	0.056	-0.004	0.132	0.002	-0.073	0.076	-0.018	-0.101	0.064	0.056	-0.009	0.135
Task Interdependence	-0.024	-0.102	0.054	-0.033	-0.124	0.055	-0.077*	-0.143	-0.006	-0.034	-0.110	0.041	-0.047	-0.132	0.036	-0.082*	-0.149	-0.012
Gender	0.054	-0.031	0.121	0.055	-0.040	0.129	0.032	-0.046	0.093	0.043	-0.031	0.105	0.045	-0.042	0.112	0.032	-0.045	0.091
Tenure	-0.048	-0.104	0.021	-0.055	-0.137	0.042	-0.078*	-0.148	0.002	-0.042	-0.103	0.025	-0.050	-0.125	0.039	-0.076*	-0.140	0.003
Education Level	0.068*	0.005	0.128	0.029	-0.043	0.103	-0.002	-0.063	0.060	0.067*	0.005	0.127	0.029	-0.043	0.100	-0.004	-0.064	0.060
IV																		
Intra-team Competitive HR Practices	0.357***	0.311	0.487	0.271***	0.218	0.416	0.448***	0.394	0.556	0.309***	0.256	0.437	0.230***	0.172	0.370	0.434***	0.378	0.546
Mediator																		
Malicious Envy										0.304***	0.201	0.369	0.331***	0.225	0.404	0.087*	-0.014	0.151
Specific Indirect Effects										**0.070*****	0.045	0.111	**0.077*****	0.050	0.121	**0.020**	-0.004	0.040
$adj\ R^2$	**0.265*****	0.155	0.296	**0.162*****	0.09	0.184	**0.360*****	0.203	0.410	**0.336*****	0.230	0.381	**0.254*****	0.167	0.292	**0.361*****	0.196	0.412
$\Delta\ adj\ R^2$										**0.071**			**0.092**			**0.001**		

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.
Note: β = standardized beta coefficient, CV = control variable, IV = independent variable.

Table 34. A Detailed Overview of the PLS-SEM Results – Model Comparison between Model 1 and Model 3

	Baseline Model (Model 1)									***Partial Mediation Model by Benign Envy (Model 3)***								
	Evasive Hiding			**Playing Dumb**			**Rationalized Hiding**			**Evasive Hiding**			**Playing Dumb**			**Rationalized Hiding**		
	β	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**	
CV		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Envy (Disposition)	0.256***	0.165	0.322	0.205***	0.106	0.282	0.213***	0.136	0.293	0.253***	0.161	0.321	0.201***	0.102	0.283	0.218***	0.144	0.299
Social Comparison Orientation	-0.087	-0.171	0.134	-0.090	-0.187	0.141	-0.123	-0.212	0.121	-0.085	-0.166	0.129	-0.087	-0.179	0.137	-0.125	-0.217	0.115
Competitive Orientation	0.007	-0.074	0.077	-0.011	-0.101	0.070	0.056	-0.004	0.132	0.027	-0.051	0.102	0.017	-0.073	0.100	0.031	-0.032	0.107
Task Interdependence	-0.024	-0.102	0.054	-0.033	-0.124	0.055	-0.077*	-0.143	-0.006	-0.031	-0.114	0.046	-0.038	-0.126	0.046	-0.075*	-0.144	-0.006
Gender	0.054	-0.031	0.121	0.055	-0.040	0.129	0.032	-0.046	0.093	0.049	-0.037	0.118	0.050	-0.041	0.125	0.033	-0.046	0.093
Tenure	-0.048	-0.104	0.021	-0.055	-0.137	0.042	-0.078*	-0.148	0.002	-0.056	-0.115	0.013	-0.067	-0.149	0.026	-0.066	-0.144	0.018
Education Level	0.068*	0.005	0.128	0.029	-0.043	0.103	-0.002	-0.063	0.060	0.065*	0.000	0.126	0.028	-0.046	0.101	-0.002	-0.062	0.060
Inspiration										-0.108*	-0.217	-0.006	-0.102	-0.210	0.008	0.071	-0.032	0.161
IV																		
Intra-team Competitive HR Practices	0.357***	0.311	0.487	0.271***	0.218	0.416	0.448***	0.394	0.556	0.358***	0.309	0.490	0.281***	0.228	0.428	0.439***	0.384	0.551
Mediator																		
Benign Envy										0.026	-0.094	0.128	-0.017	-0.146	0.095	0.014	-0.086	0.112
Specific Indirect Effects										**0.005**	-0.019	0.028	**-0.003**	-0.031	0.020	**0.003**	-0.020	0.023
$adj\ R^2$	**0.265*****	0.155	0.296	**0.162*****	0.09	0.184	**0.360*****	0.203	0.410	**0.264*****	0.233	0.390	**0.168*****	0.148	0.290	**0.363*****	0.310	0.493
$\Delta\ adj\ R^2$										**-0.001**			**0.006**			**0.003**		

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.
Note: β = standardized beta coefficient, CV = control variable, IV = independent variable.

Table 35. A Detailed Overview of the PLS-SEM Results – Model Comparison between Model 1 and Model 4

	Baseline Model (Model 1)									***Partial Mediation Model by Inspiration (Model 4)***								
	Evasive Hiding			**Playing Dumb**			**Rationalized Hiding**			**Evasive Hiding**			**Playing Dumb**			**Rationalized Hiding**		
	β	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**		**β**	**95% Bootstrapped Confidence Interval**	
CV		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**		**Lower**	**Upper**
Envy (Disposition)	0.256***	0.165	0.322	0.205***	0.106	0.282	0.213***	0.136	0.293	0.251***	0.162	0.318	0.201***	0.100	0.282	0.217***	0.140	0.300
Social Comparison Orientation	-0.087	-0.171	0.134	-0.090	-0.187	0.141	-0.123	-0.212	0.121	-0.084	-0.166	0.131	-0.087	-0.180	0.141	-0.124	-0.180	0.141
Competitive Orientation	0.007	-0.074	0.077	-0.011	-0.101	0.070	0.056	-0.004	0.132	0.026	-0.051	0.100	0.017	-0.070	0.099	0.031	-0.034	0.107
Task Interdependence	-0.024	-0.102	0.054	-0.033	-0.124	0.055	-0.077*	-0.143	-0.006	-0.031	-0.114	0.049	-0.038	-0.129	0.051	-0.074*	-0.145	-0.002
Gender	0.054	-0.031	0.121	0.055	-0.040	0.129	0.032	-0.046	0.093	0.049	-0.038	0.115	0.050	-0.042	0.124	0.034	-0.044	0.090
Tenure	-0.048	-0.104	0.021	-0.055	-0.137	0.042	-0.078*	-0.148	0.002	-0.056	-0.113	0.012	-0.068	-0.145	0.026	-0.066	-0.140	0.018
Education Level	0.068*	0.005	0.128	0.029	-0.043	0.103	-0.002	-0.063	0.060	0.064*	-0.002	0.123	0.028	-0.048	0.098	-0.002	-0.065	0.061
Benign Envy										0.034	-0.089	0.149	-0.012	-0.141	0.115	0.024	-0.066	0.130
IV																		
Intra-team Competitive HR Practices	0.357***	0.311	0.487	0.271***	0.218	0.416	0.448***	0.394	0.556	0.362***	0.310	0.492	0.283***	0.232	0.427	0.440***	0.387	0.550
Mediator																		
Inspiration										-0.114*	-0.224	-0.014	-0.105	-0.221	0.004	0.064	-0.042	0.151
Specific Indirect Effects										**-0.019**	-0.047	-0.001	**-0.017**	-0.046	0.001	**0.01**	-0.008	0.026
$adj\ R^2$	**0.265*****	0.155	0.296	**0.162*****	0.09	0.184	**0.360*****	0.203	0.410	**0.268*****	0.242	0.396	**0.171*****	0.150	0.287	**0.366*****	0.318	0.496
$\Delta\ adj\ R^2$										**0.003**			**0.009**			**0.006**		

*p ≤0.05, **p ≤0.01, ***p ≤ 0.001, one-tailed test.
Note: β = standardized beta coefficient, CV = control variable, IV = independent variable

CURRICULUM VITAE

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ACADEMIC CAREER & EDUCATION

2014 – Current	**Ph.D. Candidate, Ph.D. Program "Strategy and Management"**, University of St. Gallen (Dr. oec)
2016 – Current	**Research Assistant, Chair of Human Resource Management**, Professor Antoinette Weibel, Institute for Work and Employment Research, University of St. Gallen
2018 – 2019	**Visiting Ph.D., Department of Leadership**, BI Business School Oslo, Norway founded by the Swiss National Science Foundation Program Doc.CH
2013 – 2014	**Research Assistant, Chair of Organizational Studies**, Professor Antoinette Weibel, Department of Politics and Public Administration, University of Konstanz
2010 – 2012	**Master of Arts in Politics and Public Administration**, University of Konstanz, Germany
2006 – 2010	**Bachelor of Arts in Politics and Public Administration**, University of Konstanz, Germany

TEACHING EXPERIENCE

2020 – Current	**"Future HRM"**, University of St. Gallen (HSG), BA
2013 – Current	**"Research Design and Quantitative Research Methods",** University of Applied Sciences in Business Administration Zurich (HWZ), MSc
2013 – 2013	**„Personality and its Influence in Organizations",** University of Konstanz, BA

INDUSTRIAL EXPERIENCE

2011 – 2012	**Student Employee, Siemens AG**, Konstanz, Germany
2009 - 2010	**Intern & Student Employee, Robert Bosch GmbH**, Reutlingen, Germany

SCIENTIFIC ACHIEVEMENTS & AWARDS

2020 **Best Paper Award: Weibel, A., & Sapegina, A. (2019).** Leistungsvariable Vergütung. Ein Instrument auf dem Prüfstand. Zeitschrift für Controlling, 2019.

2017 **Best Conceptual Article and Outstanding Article Award:** Sapegina, A., & Weibel, A. (2017). The good, the not so bad, and the ugly of competitive human resource practices: A multidisciplinary conceptual framework. *Group & Organization Management, 42*(5), 707-747.

2015 **Outstanding Reviewer Award**, Academy of Management Annual Meeting, Organizational Behavior Division