Toward an understanding of HRM's intended, actual and perceived contribution to environmental sustainability and its impact on individual behavior

PhD dissertation

Josefine Weigt-Rohrbeck

EXECUTIVE SUMMARY

The past decade has witnessed growing interest in how organizations can contribute to environmental sustainability, which in turn has fueled the academic debate on how human resource management (HRM) can contribute to the achievement of environmental sustainability goals. While research in this relatively new field of green HRM has gained increasing scholarly attention, extant knowledge seems to be of primary prescriptive nature, and evidence for such a prescriptive role of HRM seems rather limited, diverse and vague. What appears to be lacking is a clearer and in-depth understanding of the actual contribution of HRM to environmental sustainability, and specifically how the role of HRM is practiced in organizations that strive to achieve environmental sustainability, as well as how the actual role impacts perceptions and behaviors regarding achieving environmental sustainability goals.

To address this gap, this dissertation includes a series of three qualitative studies that explore the role of HRM in environmental sustainability from three different angles. The first study examines the actual versus prescribed role of HRM in environmental sustainability from the HR and environmental managers' standpoint, while the second study investigates the underlying processes of how employees perceive and interpret the enacted green HR practices. The third study focuses on employees' behavior in supporting environmental sustainability goals.

Taken together, these studies demonstrate that, first, the actual role of HRM in environmental sustainability differs from what has been prescribed in the literature and seems instead implicit and partly substituted by cultural factors. Nonetheless, the studies also show that HRM can make relevant contributions to an organization's environmental sustainability initiatives, albeit in different ways than prescribed in the literature. Second, the studies' findings on the perceived role of HRM support the potential value of green HRM, as employees and supporting managers perceive the implemented green HR practices as relevant in supporting environmental initiatives. However, at the same time, employees and their managers experience the role of HRM as not being consequently enacted and thus leave ambiguous views and impressions. Third, perhaps partly due to the experienced ambiguity of the received messages, employees engage in self-starting, proactive and persistent behaviors when pursing environmental initiatives aimed at contributing to environmental sustainability goal achievement.

Overall, these findings extend knowledge on the actual role of HRM in organizations striving for environmental sustainability and highlight the impact of the underlying processes on the green HRM-performance relationship. Furthermore, the findings emphasize the need to shift the perspective on employees' contribution to environmental sustainability goals that endorses employees to contribute on a broader scale than what has been generally recognized in the literature.

Based on the studies' findings, this dissertation argues that HRM has an important role in contributing to environmental sustainability, even if that role might differ from scholarly expectations and traditional HRM concepts. Furthermore, the findings suggest that organizations' pursuit of environmental sustainability provides different opportunities for developing the HRM role. Second, the findings imply that green HRM might not be universally applicable and that the role of HRM in environmental sustainability must be examined from a contextualized perspective. Third, the dissertation highlights the perceived ambiguity of the role of HRM, which could possibly be best acknowledged through taking a paradox perspective. Fourth, the dissertation emphasizes the value of adopting an employee perspective, which can be accomplished at least to some degree by integrating an HR process approach and focusing on employees' perceptions of the role of HRM in environmental sustainability. Also, in line with adopting an employee focus, taking an active performance perspective emphasizes the importance of employees' active agency in achieving environmental sustainability goals.

In terms of practical implications, the studies' findings suggest that even if HRM assumes a rather implicit role in supporting environmental sustainability goals, this role evolves and can be represented in different ways. In particular, an HR manager might take a role as collaborator and thus might become more visible and gain credibility among other functions and stakeholders. In addition, an HR manager might take a role as value mediator, a role that could be especially relevant for organizations that aim to increase employee awareness of and commitment to environmental sustainability. Finally, HRM might contribute as a catalyst for creating meaningful work through signaling to employees that the organization is a purpose-driven organization that cares about the preservation of natural resources and supports employees' engagement in building an environmentally sustainable organization.

DANSK RESUMÉ

De seneste ti år har der været en stigende interesse i, hvordan organisationer kan bidrage til miljømæssig bæredygtighed. Dette har rejst en debat i akademiske kredse om, hvordan HRM kan bidrage til at nå målene for bæredygtighed. Forskningen inden for dette relativt nye område, grøn HRM, har fået stigende videnskabelig opmærksomhed, mens den eksisterende viden, der først og fremmest synes at være præskriptiv/normativ, synes at være både begrænset, mangfoldig og upræcis. Der synes at mangle en klarere og mere dybdegående forståelse for, hvordan HRM egentlig bidrager til miljømæssig bæredygtighed, og i særdeleshed hvordan HRM's rolle praktiseres i organisationer, der tilstræber miljømæssig bæredygtighed, samt hvordan den egentlige rolle påvirker de forskellige opfattelser af og tilgange til, hvordan man bedst opnår miljømæssig bæredygtighed.

Derfor indeholder denne afhandling tre kvalitative studier, hvor HRM's rolle i miljømæssig bæredygtighed undersøges ud fra tre forskellige vinkler. Det første studie undersøger HRM's faktiske rolle kontra den foreskrevne rolle inden for miljømæssig bæredygtighed, set ud fra henholdsvis en HR synsvinkel og de miljøansvarliges synsvinkel. Det andet studie undersøger de bagvedliggende processer for, hvordan medarbejderne opfatter og fortolker HR's grønne praksis. Det tredje studie fokuserer på, hvordan medarbejderne støtter op om målene om miljømæssig bæredygtighed.

Tilsammen demonstrerer disse studier for det første, at HRM's egentlige rolle inden for miljømæssig bæredygtighed afviger fra det, der foreskrives i litteraturen; i stedet synes HRM's rolle at være implicit og til dels erstattet af kulturelle, kontekstuelle faktorer. Ikke desto mindre viser studierne også, at HRM på relevant vis kan bidrage til en organisations initiativer inden for miljømæssig bæredygtighed, om end på andre måder end foreskrevet i litteraturen. For det andet understøtter resultaterne fra studierne den gængse opfattelse, at den potentielle værdi, som grøn HRM har, støttes af HRM, idet medarbejdere og understøttende ledere opfatter den implementerede grønne HR-praksis som relevant i forbindelse med miljøinitiativer. Men samtidig oplever medarbejdere og deres ledere, at HRM's rolle ikke udøves konsekvent, og dermed bliver indtrykket flertydigt. For det tredje, måske til dels baseret på den flertydighed, der var i de udmeldinger, vi har fået, så engagerer medarbejdere sig på eget initiativ proaktivt og insisterende i forfølgelsen af initiativer, der skal medvirke til at opfylde målene for miljømæssig bæredygtighed.

Overordnet set udvider disse konklusioner kendskabet til den rolle, som HRM egentlig spiller i organisationernes bestræbelser på at opnå miljømæssig bæredygtighed og fremhæver den virkning, som de bagvedliggende processer har på udøvelsen af HRM. Ydermere viser vores resultater, at der er et behov for at ændre perspektivet på medarbejdernes bidrag til opfyldelse af miljømæssige bærdygtighedsmål, sådan at medarbejderne får anerkendelse for at bidrage i større omfang, end det generelt set har været anerkendt i litteraturen.

Baseret på resultaterne af vores studier argumenteres der i denne afhandling for, at HRM har en vigtig rolle at spille, når der skal bidrages til miljømæssig bæredygtighed, også selv om den rolle afviger fra forventningerne fra forskningsmiljøet og fra traditionelle HRM-begreber. Yderligere indikerer resultaterne, at organisationernes stræben efter miljømæssig bæredygtighed giver forskellige muligheder for at udvikle HRM's rolle. Dernæst antydes det, at grøn HRM måske ikke kan anvendes universelt, og at HRM's rolle for miljømæssig bæredygtighed bør undersøges ud fra kontekstuelle perspektiver. For det tredje fremhæver afhandlingen, at HRM's rolle kan opfattes flertydigt, hvilket sikkert bedst kan forstås ud fra et paradoksperspektiv. For det fjerde understreges det i afhandlingen, at der er en værdi i at anvende et medarbejderperspektiv. Dette kan i nogen udstrækning gøres ved at integrere en HR-procestilgang, der fokuserer på medarbejdernes opfattelser af HRM's rolle inden for miljømæssig bæredygtighed. Ligeledes, i tråd med at anlægge et medarbejderperspektiv, vil et aktivt udførelsesperspektiv understrege, hvor vigtigt det er, at medarbejderne aktivt medvirker til at nå målene for miljømæssig bæredygtighed.

Hvad angår betydning i praksis, indikerer resultaterne af studierne, at selv om HRM har en temmelig implicit rolle, når der skal støttes op om miljømæssige bæredygtighedsmål, så udvikles denne rolle, og dette kan komme til udtryk på forskellig vis. Især kan nævnes, at HRM kan tage rollen som samarbejdspartner og dermed blive mere synlig og troværdig inden for andre funktionsområder og for andre interessenter. Dertil kommer, at HRM kan agere som ordstyrer, når der diskuteres værdier; en rolle der kan være særlig relevant for organisationer, der ønsker at øge medarbejdernes bevidsthed om og engagement i miljømæssig bæredygtighed. Endelig kan HRM fungere som katalysator for skabelsen af meningsfuldt arbejde ved at sende et signal til medarbejderne om, at de arbejder i en organisation, der har omtanke for naturressourcer, og som støtter medarbejdernes engagement i at opbygge en organisation, der er miljømæssigt bæredygtig.

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It was a book from Elaine Cohen titled "CSR for HR – A necessary partnership for advancing responsible business practices" that inspired me to start this long journey to explore how human resource management can help organizations to become more environmentally sustainable. Admittedly, this was not always an easy and straightforward journey, yet it was worth it. When I started this journey, I was new to Denmark and the academic life. At that time, it was Jørn F. Nielsen, my later co-supervisor, and Birthe Hansen I owe a big thank you, who guided me through this new world and made me feel welcomed and appreciated.

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Skanderborg, May 10, 2019

Josefine Weigt-Rohrbeck

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

This chapter presents the background and motivation behind the dissertation to provide the foundation for the overall research question. In addition, it introduces three papers, which form the main part of the dissertation, and clarifies their individual contributions to the overall research question. Finally, this chapter presents the structure of the dissertation.

Background and motivation of the dissertation

This dissertation, entitled "Toward an understanding of HRM's intended, actual and perceived contribution to environmental sustainability and its impact on individual behavior," is a qualitative study on the role of human resource management (HRM) in organizations striving to achieve environmental sustainability with the primary purpose to extend knowledge on the espoused, enacted, and perceived role and individual behavioral consequences.

Three important developments in the management of organizations drove the motivation for this dissertation. First, sustainability has become an important strategic focus area in the agendas of contemporary organizations, as a recent global survey of 2,800 firms indicates (Kiron, Kruschwitz, Haanaes, & von Streng Velken, 2012). Specifically concerning the preservation of the natural environment, Shrivastava (1994) plea to organizations fueled their need to act and take responsibility for their actions as they have greatly contributed to the ecological crisis. Soon, expectations were raised from within and outside organizations to conduct business in more sustainable ways, which means that organizations were becoming accountable for not only focusing on economic performance but also for seeking to provide innovative ideas and solutions for pressing environmental and societal issues (Porter & Kramer, 2006).

Second, the urge to build more sustainable organizations began to spark academic discussions on the current and potential role of HRM in organizations striving for sustainable behavior (Jackson & Seo, 2010; Pfeffer, 2010). With sustainability becoming an important organizational strategic goal, organizations are increasingly forced to pursue often contradictory and competing goals, such as achieving short-term financial profits and long-term environmental performance at the same time (Ehnert, 2009; Guerci & Carollo, 2016). In the course of this debate, the concept of sustainable HRM

developed; it acknowledges the tensions arising from contradictory goals as an integral part of organizational life (Ehnert, 2009). Sustainable HRM aims to enable economic, environmental, social, and human sustainability concurrently and thus supports the core idea of sustainability (Guerci, Decramer, Van Waeyenberg, & Aust, 2018). Scholars within this field argue that sustainable HRM offers a new avenue for HRM scholars to overcome the prevailing focus on economic performance goals that are present in strategic HRM scholarship and that neglect the concurrent impact of HR practices on environmental, social, and human sustainability (Aust, Brandl, & Keegan, 2015; Guerci et al., 2018).

Third, within the field of sustainable HRM, there is a growing body of research devoted to the role of HRM in contributing to the achievement of environmental sustainability, referred to as green HRM (Renwick, Redman, & Maguire, 2013). Green HRM is described as the HRM aspects of environmental management and include green recruitment and selection, EM training and development, green performance management and appraisal, EM pay and reward systems, green employee involvement, staff empowerment and engagement in EM, supportive green climate and culture, and union roles in EM (Renwick, Jabbour, Muller-Camen, Redman, & Wilkinson, 2016). This research is fueled by the rising environmental awareness that triggered the demand for organizations' environmental behavior and led to investments in environmental management systems (Guerci & Carollo, 2016).

Despite this increasing interest in the role of HRM in contributing to organizations' pursuit for environmental sustainability, HRM scholars have been slow in recognizing the relevance of environmental issues and in identifying their role in sustainability matters (Jackson & Seo, 2010). Some suggest that this slow uptake is due to the way the field of HRM has evolved since the 1970s, where the primary concern was on effective people management to increase economic performance and to please shareholder interests (Jackson & Seo, 2010). Indeed, although the first relevant scholarly articles linking HRM to environmental management can be traced back to Wehrmeyer (1996) and Wehrmeyer and Parker (1995), it has only been within the past ten years that a serious and meaningful engagement of HRM scholars and scholars of related fields, such as industrial-organizational psychology (Huffman, Watrous-Rodriguez, Henning, & Berry, 2009), in environmental issues has been noticed. Despite a lot of interest in sustainability, there has been little focus from HRM scholars until the last ten years, and even then, what Renwick, Redman, and Maguire (2008) refer to as "green HRM" is still described as being quite fragmented (Dumont, Shen, & Deng, 2017).

To date, the primary interest in this research stream reflects a functional HRM perspective, which focuses on how specific functional areas of HRM can make the most effective contributions to achieve environmental sustainability objectives (Renwick et al., 2016). Research at the intersection of strategic HRM and environmental sustainability, that focuses on the strategic alignment of bundles of green HRM practices and policies to environmental sustainability, has so far received less attention (Jackson & Seo, 2010). The existing literature on that matter is mainly either conceptual or quantitative. Moreover, research in green HRM still remains largely content-driven; that is, it places focus on which bundles of HR practices create an HRM system that best supports environmental performance goals (for an exception see Haddock-Millar, Sanyal, & Müller-Camen, 2016).

Strategic HRM scholars have recognized that content alone will not explain the HRM-performance relationship. Instead, the underlying mechanisms that affect this relationship need to be investigated. Specifically, researchers have acknowledged that employees often do not perceive HRM as intended by management, and consequently, if employees do not understand the HRM as intended, it can substantially weaken the link between HRM and performance (Choi & Lee, 2013). Thus, it appeared to be important to examine how the gap between managerial intentions and employees' perceptions has occurred. One important framework that helped to explain this gap was Bowen and Ostroff (2004) process approach. Essentially, these authors argued that to avoid this gap, employees need to uniformly perceive the messages HRM sends them. At the individual level, employees' perceptions of HR practices were acknowledged as an important predictor of performance outcomes because the way employees experience HR practices subsequently influences their behaviors (Alfes, Shantz, Truss, & Soane, 2013; Khilji & Wang, 2006). However, according to Nishii, Lepak, and Schneider (2008), employees perceive the messages sent through HRM based on their individual experiences, and thus, their perceptions of the same HR practices can vary among them. While Alfes et al. (2013) have found that employees' perceptions of HR practices contribute to the understanding of the HRM-employee performance relationship, due to the content-driven focus, the examination of the underlying processes has so far not gained much attention in green HRM research, with few recent exceptions (Dumont et al., 2017; Shen, Dumont, & Deng, 2016).

Along with the academic debate on HRM's potential contribution to environmental sustainability, the call for a problem-focused approach to HRM has become louder, demanding a portrait of HRM that corresponds better with the current reality of HRM practice in organizations (Jackson, Ones, & Dilchert,

2012). That is, organizational environments are becoming increasingly complex and dynamic, and HRM practitioners are facing ever more tension resulting from conflicting goals, such as efficient and effective people management while also ensuring stakeholders' well-being and personal development. While the acknowledgment of paradoxical tensions inherent in HRM is not new (Evans, 1999; Legge, 1978), that theoretical lens is still underrepresented in mainstream HRM, as well as in sustainable and green HRM research (Guerci & Carollo, 2016). Recently, scholars inspired by the studies of Boselie, Brewster, and Paauwe (2009) and Ehnert (2009), have explicitly introduced the paradox theory to green HRM and identified several important paradoxes that organizations can face when designing and implementing HRM systems that aim to contribute to environmental sustainability goals (Guerci & Carollo, 2016). Thus, these authors propose the adoption of the paradox theory to be a fruitful theoretical lens that accounts for the paradoxical tensions apparently inherent to green HRM and that helps to develop the green HRM scholarship.

Research objectives

The research presented in this dissertation aims to provide a more in-depth understanding of the actual contribution of HRM to environmental sustainability in organizations with a green reputation and how ensuing HR practices impact employees' and managers' perceptions and behavior toward achieving environmental sustainability. Specifically, the dissertation addresses three main gaps in the green HRM literature, which are summarized in this section.

First, while research in green HRM has demonstrated that specific green HR practices positively relate to environmental performance (for an overview see Renwick et al., 2016; Renwick et al., 2013), much of this research remains conceptual and it appears challenging to find empirical evidence that demonstrates the role of HRM in environmental matters as prescribed in the literature (Harris & Tregidga, 2011; Zibarras & Coan, 2015). A potential gap between the intended and actual role of HRM has been acknowledged in the relevant literature (Khilji & Wang, 2006; Piening, Baluch, & Ridder, 2014). Therefore, further elucidating the potential gap between what the literature proposes the role of HRM should be (i.e., what is the espoused role of HRM prescribed in the literature) and what is actually realized in organizations (i.e. what are the enacted green HR practices) is one main research objective in this dissertation.

Second, research in green HRM has so far primarily focused on the content and design of specific HR practices and how that content contributes to environmental performance goals (Renwick et al., 2016). However, this approach fails to provide insight into how green HR practices elicit the desired outcomes (Jackson & Seo, 2010). Furthermore, despite the gap between an organization's intentions and employees' perceptions of the intended HR practices, knowledge is lacking on how such a gap occurs (Piening et al., 2014). Adopting the HRM process approach that emphasizes the underlying mechanisms through which respective stakeholders perceive and respond to the HRM system has been argued to help explain that gap (Bowen & Ostroff, 2004; Nishii et al., 2008). While strategic HRM scholars have called for a process-oriented approach to HRM (Sanders, Shipton, & Gomes, 2014), it has not been notably applied yet to sustainable and green HRM (for an exception see Shen et al., 2016). Hence, another main research objective is to integrate the process approach into green HRM to better understand how HRM influences environmental sustainability and clarify how respective employees perceive, interpret, and respond to what is signaled through green HR practices and what that potentially means for individual-level contributions to environmental performance achievement.

Third, research in green HRM has acknowledged that success in becoming more sustainable is related to employees' green behavior toward environmental sustainability (e.g. Ones & Dilchert, 2012). Moreover, in current organizational settings, rapid technological development and changes demand constant and quick new innovative ideas and solutions to achieve environmental performance goals; thus, employees' active involvement in environmental innovation processes is deemed necessary (Haapasaari, Engeström, & Kerosuo, 2017; Virkkunen, 2006). However, research on employee behavior in innovation processes still seems to be dominated by a traditional performance perspective that grants employees few degrees of freedom, from development to implementation of environmental initiatives, and that stresses continuous top-down guidance (Holman et al., 2012). Scholars increasingly call for the adoption of an active performance perspective that involves employees' ownership and proactivity for changing a given frame of action and trust in employees' capacity to transform innovative ideas into feasible initiatives (Engeström, 2011; Frese, 2008). Consequently, by integrating the active performance perspective on employees' behavior in environmental initiatives, the thesis emphasizes the importance of employees' agency for building environmentally sustainable organizations.

Given these gaps, the overall research question has been formulated as:

What is the role of HRM in supporting environmental sustainability goals, and how is this role perceived and enacted?

To address this research question, this dissertation adopted a multi-paradigm approach (Gioia & Pitre, 1990; Lewis & Kelemen, 2002). A multi-paradigm approach acknowledges theoretical alternatives, encourages a discourse across the different paradigms, and promotes an understanding of the existence of plurality and paradox (Lewis & Kelemen, 2002). This meta-theoretical lens was chosen because sustainable HRM, with green HRM as a sub-field, can be argued as research that embraces multiple, often contradictory, paradigms and theories that are inspired by research in psychology, sociology, and economy (Ehnert, 2009). Accordingly, it is assumed that a multi-paradigm perspective can provide a broader perspective on green HRM and offers the possibility for a more comprehensive approach to green HRM by valuing different paradigmatic lenses.

The empirical part of this dissertation involved the collection of qualitative data from large and medium-sized companies that are renowned for their corporate initiatives promoting environmental sustainability and superior environmental performance. This approach enabled an in-depth understanding of how the role of HRM is played out in the companies, how HRM's actions are experienced by employees, and how these employees acted in regard to achieving corporate environmental goals. These data served as a basis for the three empirical papers that form the main constituent of this dissertation. The purpose, method, findings, and contribution of each paper, as well as the overarching framework for the three papers, are summarized in the next paragraph.

Overview of the three empirical papers

The three papers were embedded into an overarching framework that was adopted from Wright and Nishii (2007) to illustrate the research aim of the papers and how the three papers are related (see Figure 1 for an overview). Wright and Nishii (2007) aimed to understand the process through which HR practices must act when contributing to organizational performance. Their framework shows the mechanisms that affect the HRM-performance relationship on the group and individual levels.
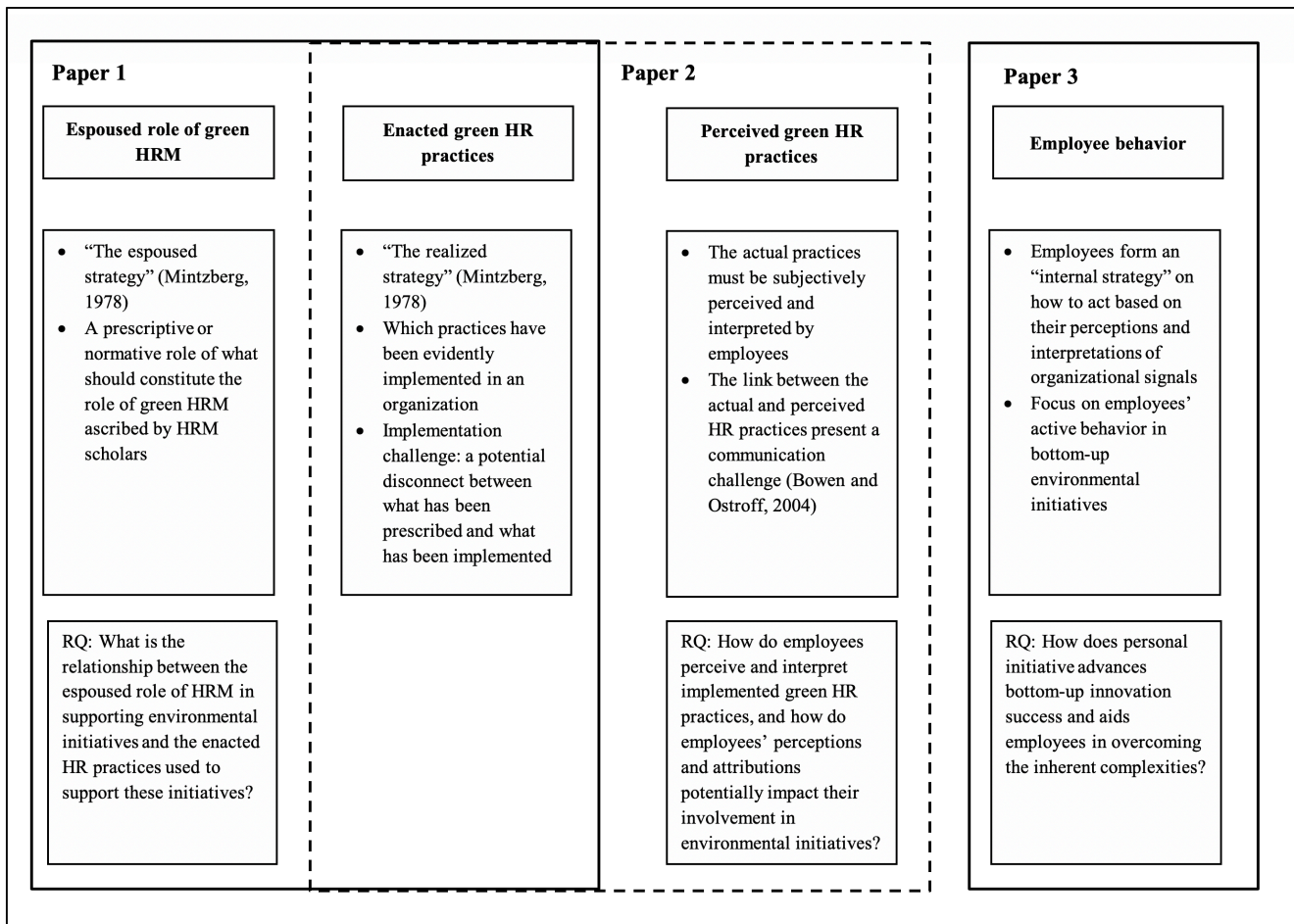
Figure 1 Overview of scope of the three papers
Source: **adapted from Wright and Nishii (2007), "The Process Model of SHRM"**

The first paper,[1] entitled "The espoused versus enacted role of HRM in supporting environmental initiatives," emphasizes the potential disconnect between what the literature has prescribed green HRM should do and what is actually realized in an organization. More specifically, this paper seeks to contribute to a clearer understanding of how the role of HRM, as prescribed in the literature, is enacted to support environmental goal achievement in current companies. Examining how the role of green HRM plays out seems particularly relevant for two reasons: First, evidence for the prescribed formal role of green HRM is limited and ambiguous; and second, like the potential gap between the intended and actual roles of HRM that was noted in earlier HRM research (Piening et al., 2014), a similar divergence may

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[1] The first paper has been presented at the Academy of Management conference 2019.

also apply to the green HRM concept and its practice. The qualitative data in this study consisted mainly of in-depth interviews with HR and environmental managers to gain a comprehensive picture of the enacted role of HRM; however, these data were supported by archival data to validate the responses on the enacted practices. The study was conducted at five large and mid-sized companies based in Denmark that are known for their environmental reputation. Scandinavian-based companies are known for their unique approach to sustainability matters and are consistently ranked among the top environmental performers (Strand, Freeman, & Hockerts, 2015). The findings from the study suggest that HRM's role in supporting environmental initiatives is enacted through particular HR practices, but that the role is neither made explicit nor is the sole responsibility of HR managers. This study proposed that the dearth of formalized and targeted green HR practices relates to the way sustainability issues are managed in the Scandinavian context. Specifically, it appears that the role of HRM in environmental matters is largely substituted by a strong reliance on organizational and national values that warrant employees' commitment for the companies' environmental goal achievements. Still, even if the enacted role seems to differ from what has been prescribed in the literature, the paper proposes that the companies' environmental goal achievement can benefit from HRM's active involvement, foremost when HR and environmental management practitioners collaborate in developing and implementing environmental initiatives.

The second paper,[2] entitled "The untapped opportunity for Green HRM as a catalyst for meaningful work" seeks to contribute to a better understanding of the challenge an organization faces when communicating its commitment to supporting bottom-up environmental initiatives through green HR practices. To enable a better understanding of such a communication challenge, this paper focuses on exploring the underlying psychological processes through which employees perceive, interpret, and attribute meaning to the actual green HR practices. The investigation of the process through which green HR is perceived seems highly relevant, in particular for three reasons: First, the importance of employees' perceptions of HRM has been highlighted to greatly impact the HRM-performance relationship (Khilji & Wang, 2006). Second, perceptions and attributions have mainly been studied in isolation but have been argued to profit from a combined analysis, because employees' perceptions of HR practices are argued to influence their understanding of the cause of these practices (Sanders & Yang, 2016). Third, the way

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[2] The second paper has been accepted for the British Academy of Management conference 2019.

the organization communicates to the employees through the HR practices is important and influences employees' perceptions and behavior (Bowen & Ostroff, 2004). Accordingly, if the signals the green HR practices send are not perceived as distinctive, consistent, and consensual, the implementation of green HR practices may fail (Dumont et al., 2017). This study chose semi-structured interviews to provide rich narratives on the perceptual and attributional processes of individual employees. The study was conducted at a large manufacturing company headquartered in Denmark that is renowned for its high environmental production standards and performance. The findings revealed that employees perceived the messages the green HR practices sent as inconclusive. In particular, the practices signaled an organization where employees' green engagement matters; meanwhile, they signaled that the organization puts economic interests first and did not make consistent efforts to support employees in their endeavors to support the environmental performance goals. The ambiguous findings emphasize the importance of in-depth knowledge about employees' perceptions and attributions to avoid unintended behavioral consequences, for example, employees' disengagement from environmental initiatives. Moreover, the findings demonstrated the chance for green HRM to serve as a catalyst for creating meaningful work, if ambiguity in the communication process can be avoided and instead clear and transparent messages be provided.

The third paper,[3] entitled "Democratizing the innovation process – personal initiative in employee-driven eco-innovation," seeks to provide knowledge about employees' behavior in environmental initiatives that constitute complex bottom-up innovation processes. In two embedded cases of bottom-up environmental initiatives, the study aims to conceptualize the process of how employees act in developing, championing, and implementing environmental initiatives bottom-up, even when faced with complexity and uncertainty of outcome. This study is relevant for three reasons: First, it highlights the role of the so far underestimated employees' capabilities in bottom-up environmental innovation processes by employing an active performance approach (Frese, 2008) and seeing the employee as active agent (Virkkunen, 2006). Specifically, the study employs the concept of personal initiative that comprises employees' proactive, self-starting, and persistent behavior (Frese & Fay, 2001; Frese, Fay, Hilburger, Leng, & Tag, 1997). With its emphasis on employees' active agency, the paper compensates for the prevalent traditional performance view in innovation research (Holman et al., 2012). Second, the study

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[3] The third paper has been accepted for publication in the European Journal of Innovation Management. An earlier version has been presented at the European Academy of Management conference 2018.

provides an empirical account of employees' behavior in environmental innovation processes, whereas most of the current literature is conceptual in nature (Buhl, Blazejewski, & Dittmer, 2016). Third, as this study shows how employees act in the process of generating, championing, and implementing environmental initiatives, it follows the call for depicting the dynamic nature of employee-driven innovation processes (Haapasaari et al., 2017). The study was conducted at a large manufacturing company headquartered in Denmark that has been recognized for their high environmental performance and that claims to use green HR practices to support environmental initiatives. The findings show how employees initiate and steer through environmental initiatives and persistently handle challenges all the way to implementation without being activated from the top-down. Indeed, the findings underline the importance of employees' personal initiative for the initiatives' success as it broadens the scope of their action to all phases of an innovation process and also in settings that are not perceived as encouraging but rather complex and ambiguous.

Structure of the dissertation

This dissertation is structured into seven chapters (see Table 1). Following this introduction, Chapter 2 provides the theoretical foundation of this paper. This chapter presents the state of conceptual and empirical research that links HRM with environmental sustainability, as well as with environmental management to position the thesis in the existing literature and to illustrate the research gaps and research question that have been outlined in the introduction. Chapter 3 presents the research methodology by reflecting on the philosophy of science, the paradigmatic lenses that influence green HRM research, and the choice of the research design, data collection, data analysis, and quality criteria. At the meta-theoretical level, the dissertation has been influenced by the multi-paradigm-perspective; thus, one objective of the dissertation is to clarify what has substantiated the choice, what constitutes this metaparadigm approach, and how it benefits the green HRM research. Chapters 4 to 6 present the empirical research of the thesis in the form of the three papers described above. Finally, Chapter 7 summarizes the key contributions of the thesis in relation to the research objectives and closes with a discussion on limitations and avenues for future research, as well as implications for practice.

Table 1 Overview of dissertation structure

Chapter	Content
Chapter 1	**Introduction** *Objectives:* Present dissertation's motivation and background, overall research gaps, and research objectives; provide an overview of the three papers
Chapter 2	**Theoretical foundation** *Objectives:* Introduce relevant existing literature that links HRM and ES/EM, position the thesis within the literature, and develop research gaps and the research question
Chapter 3	**Research methodology** *Objectives:* Reflect on philosophy of science; introduce research design, data collection, data analysis, and quality criteria
Chapter 4	**Paper 1** "The espoused versus enacted role of HRM in supporting environmental initiatives" *Research objective:* Understand the implementation challenge (i.e., how the role of HRM prescribed in the literature is enacted to support environmental goal achievement in current companies)
Chapter 5	**Paper 2** "The untapped opportunity for Green HRM as a catalyst for meaningful work" *Research objective:* Understand the communication challenge between enacted HR practices and how employees perceive and interpret them
Chapter 6	**Paper 3** "Democratizing the innovation process – personal initiative in employee-driven eco-innovation" *Research objective:* Strengthen the underexposed role of employees in complex bottom-up innovation processes by providing knowledge about how employees act in initiating, championing, and implementing environmental initiatives
Chapter 7	**Discussion and conclusion** *Objectives:* Summarize key contributions, discuss implications for research and practice, and provide critical reflections on own research and avenues for future research

Source: compiled by the author

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CHAPTER 2: THEORETICAL FOUNDATION

This chapter provides an overview of the extant literature on human resource management (HRM) and its relation to environmental sustainability and/or environmental management, to position the dissertation within these research fields and determine the research gaps and research aims. The chapter also highlights the importance of context in the investigation of the HRM – environmental sustainability link.

The evolvement of the green HRM scholarship

Increasingly, organizations are focusing on environmental sustainability, which seeks to improve human welfare and maintain natural capital, that is, to protect and not exceed available natural resources (Goodland, 1995). More recently, Morelli (2011) proposed the following definition of environmental sustainability: "a condition of balance, resilience, and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity" (p. 5). Still, despite its emphasis on environmental management research, sustainability research and innovation management literature, the HRM field has been relatively slow to connect to and discuss how HRM as a means of contributing to environmental sustainability efforts. Indeed, scholars within the fields of environmental and operational management were among the first to explicitly and systematically explore HRM's contribution to environmental sustainability goals (e.g. Daily & Huang, 2001; Hanna, Newman, & Johnson, 2000). In particular, they were concerned with how and when certain HR practices support the effective implementation and maintenance of environmental management systems[4] in organizations. The systematic and continuous involvement of HR practices and activities was identified as crucial to the success of those systems (Jabbour & Santos, 2008) that were increasingly implemented because they were expected to provide numerous benefits to organizations, such as better control of environmental issues or growing employee awareness of environmental concerns (Barnes, 1996; Daily & Huang, 2001). These assumptions were supported, for example by, Wagner's longitudinal study (2011, 2013), which confirmed the importance of linking HR activities to environmental management activities by showing competitive benefits that result from such relationships as work satisfaction and staff retention.

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[4] An environmental management system is a set of managerial processes that systematically helps an organization to identify, measure, and control its environmental impact and to reduce or eliminate harmful impacts (Bansal & Hunter, 2003). According to these authors, the most known and applied system is the ISO 14001 certification.

One of the first essential contributions linking HRM to environmental management was a book, *Greening People: Human Resources and Environmental Management*, edited by Walter Wehrmeyer (1996), that comprised a collection of academic and practitioners' articles. In his book, Wehrmeyer described the role of HRM in environmental management, specifically, as facilitator and enabler, and argued that HRM's main contribution is "to supply and support competent staff and to enable individuals to be part of organizational success" (Wehrmeyer, 1996, p. 17). One of the central contributions in Wehrmeyer's book was Milliman and Clair's model of environmental HRM practices (1996), which involved four main steps: first, create an environmental vision; second, train employees to understand that vision; third, create an environmental performance appraisal system and evaluate employees' needs in relation to organizational environmental performance goals; and fourth, create a reward system to acknowledge environmental initiatives. Wehrmeyer's book (1996) gave rise to the further, albeit slow, development of the field. Scholars such as Daily and Huang (2001), Govindarajulu and Daily (2004), and Jabbour and Santos (2008) then pursued the conceptual development of the integration of HRM into environmental management systems. More specifically, Daily and Huang (2001) developed a framework that shows how certain HR factors, such as management support, training, employee empowerment, and rewards can impact the phases of an environmental management system. Empirical evidence for the specific effects of HR factors was conveyed significantly, but not exclusively, in terms of teamwork (Hanna et al., 2000), managerial support (Ramus, 2002; Ramus & Steger, 2000), training (Daily, Bishop, & Massoud, 2012; Madsen & Ulhøi, 2001), knowledge creation (Rothenberg, 2003), various HR practices used in the implementation of environmental management systems (Jabbour, Santos, & Nagano, 2010), the role of green teams (Jabbour, Santos, Fonseca, & Nagano, 2013), and different HR practices, such as hiring, training and performance management (Guerci, Radaelli, Siletti, Cirella, & Rami Shani, 2015).

Overall, these research contributions imply that the human factor plays a key role in successfully implementing environmental management systems (del Brío, Fernandez, & Junquera, 2007). Moreover, this knowledge is arguably highly relevant for organizations that must implement or advance their environmental management system to enhance their environmental performance, and specifically, for those in polluter-prone industries (Renwick, Jabbour, Muller-Camen, Redman, & Wilkinson, 2016).

While these research contributions provide valuable content on the ways that specific HR practices link to environmental performance, to a great extent, they depict a functional HRM perspective that inadequately focuses on the ways that different set of HR practices align with organizational strategy (Haddock-Millar, Sanyal, & Müller-Camen, 2016; Jackson & Seo, 2010). From a strategic HRM perspective, strategic alignment is understood to be a critical factor in achieving environmental sustainability (Jackson & Seo, 2010). Such alignment between the organizational functions involved in greening efforts arguably constitute an important condition of the preservation of employee commitment to and involvement in environmental initiatives (Jabbour, 2011).

Specifically, Jackson and Seo (2010) argue for the importance of identifying and understanding the business strategy and/or alternative strategies that organizations may deploy to achieve environmental sustainability. The respective strategies more or less prescribe the appropriate set of HR policies and practices with the potential to support the implementation and integration of environmental strategic goals. Thus, to enhance the benefits for organizations aiming at environmental sustainability, strategic HRM scholars, such as Haddock-Millar et al. (2016); Jackson and Seo (2010) emphasize the need for vertical alignment of HRM with the business strategy, as well as horizontal alignment among specific HR practices that may reinforce each other. For example, Haddock-Millar et al. (2016) examined, in a qualitative exploratory study, how organizations differed in their approaches to position and align HRM and environmental management functions and how the organizational context influenced their approaches.

Renwick, Redman, and Maguire (2008) presented the first thorough literature review on the role of HRM in environmental management, which was comprised of approximately sixty books and articles, published between 1988 and 2008; this marked a key development in green HRM scholarship. Later, Renwick and his co-authors (2013, 2016) presented new and advanced knowledge on the current conceptual and empirical state of the research field. They defined green HRM as the "HRM aspects of green management" (Renwick, Redman, & Maguire, 2013, p. 1). Kramar (2014) identified green HRM benefits as defining elements: "HRM activities which enhance positive environmental outcomes" (p.1075). Moreover, in their second review, Renwick et al. (2013) imposed some structure on a seemingly fragmented research field by applying the ability-motivation-opportunity (AMO)[5] framework to the current state of the green HRM scholarship and bundled green HR practices according to skill-enhancing, motivation-enhancing and opportunity-enhancing green HR practices. Advocates of the AMO framework suggest that bundles of HR practices may influence employees' attitudes and behavior through various mediating processes (Jiang, Lepak, Hu, & Baer, 2012). Accordingly, it is arguable that green HR practices that, for example, provide opportunities to engage in environmental initiatives are likely to enhance employee performance (Shen, Dumont, & Deng, 2016). Paille (2013) conducted an empirical investigation of the mediating role of organizational citizenship behavior in the HRM-environmental performance relationship. Recently, a quantitative study by Roscoe et al. (2019) examined the mediating role of organizational culture in the relationship between green HR practices and environmental performance. They found that green HR practices can positively influence the development of enablers of green organizational culture, such as leadership behavior, and that these enablers mediate the HRM-environmental performance relationship.

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[5] The AMO framework suggests that employee performance is a function of the ability, motivation, and opportunity to perform (Appelbaum, 2000). The AMO framework may be considered the current leading applied theoretical framework in HRM research (Paauwe, 2009; Paauwe & Boon, 2018). The popularity of this approach is rooted in the long-standing research tradition on high performance work systems (HPWS), which comprise a set of related HR practices to enhance performance (Paauwe & Boon, 2018).

To date, however, empirical evidence is rather inconclusive as to which HR practices actually constitute green HRM (Zibarras & Coan, 2015). According to Dumont, Shen, and Deng (2017), a lack of empirically validated scales to measure the latent variable 'green HRM' yields an inconsistent understanding of the construct. Dumont et al. (2017) addressed that issue by developing a thorough measure of green HRM in a recent study that includes the following steps: literature review, interviews with employees to ensure the measure reflects the context of the study, focus groups to rate the relevance of the items, and last, a factor analysis to confirm the items comprising the scale.

Although knowledge about the content of HR systems is useful in theoretical terms, as in posing a question like "what are the content elements that comprise the best HRM system in a given context?" (Jackson & Seo, 2010, p. 280), simply asking such questions does not guarantee the provision of sufficient answers for organizations striving to achieve environmental sustainability (Jackson & Seo, 2010). Consequently, Jackson and Seo (2010) called for a shift, from a content perspective to a process perspective to better explain the relationship between HRM and environmental performance, because the HRM process perspective emphasizes the underlying psychological processes through which employees attach meaning to HRM (Sanders, Shipton, & Gomes, 2014). For example, Jackson and Seo (2010) argued that a focus on process may provide insight into how HRM systems can be effectively developed and implemented to orient employee behavior toward the environmental strategy. The HRM process perspective was shaped mainly by Bowen and Ostroff (2004), who perceived HRM as a means to communicate messages from employer to employees. Drawing on attribution theory (Kelley, 1967, 1973), they identified features that could enable employees to perceive these messages uniformly. They proposed that, if all employees share a common perception of the same HR practices, the HRM systems would be perceived as strong, and the dynamic would eventually lead to higher organizational performance. Although the process approach has increasingly come to the fore in the strategic HRM literature (Sanders et al., 2014), green HRM scholars have, so far, been hesitant to transition from the content approach. Guerci and Pedrini (2014) represent an exception, as they have explicitly deployed the concept of HRM strength (Bowen & Ostroff, 2004) to investigate the consensus between HR and sustainability managers and its impact on the achievement of sustainability goals. While consensus between the HR and sustainability managers may affect agreement among employees, Guerci and Pedrini (2014) did not investigate employees' perceptions of consensus between the managers. A consideration of employees' perceptions of HRM strength is, however, important, as managers' perceptions only capture a view of intended HR practices and their perceptions are not necessarily consistent with employees' perceptions of the HR practices, as implemented (Khilji & Wang, 2006). Based on their individual experiences, employees perceive and interpret the HR practices subjectively; thus, perceptions of the same HR practices may vary across the employees (Nishii, Lepak, & Schneider, 2008). Therefore, employees' perceptions are acknowledged to be an important proximal predictor of employees' attitudes and behavior that add considerably to the understanding of the HRM-

performance relationship (Alfes, Shantz, Truss, & Soane, 2013). In green HRM research, (Shen et al., 2016) are among the few who have applied the concept of perceived green HRM by drawing on the literature of Bowen and Ostroff (2004) and Nishii et al. (2008) to survey employees on their perceptions of green HR practices and thereby determine how those perceptions impact non-green employee outcomes as rated by supervisors. In another recent quantitative study, Dumont et al. (2017) examined how employees' perceptions of green HR practices influence employee workplace green behavior through employees' perceptions of psychological green climate. The literature on psychological climate articulates an individual-level perception and emphasizes the crucial influence of employees' perceptions of organizational activities on employee behavior (Schneider, Ehrhart, & Macey, 2013); psychological climate relates to organizational climate, which is a shared perception that Bowen and Ostroff (2004) used to develop the HRM strength concept.

Related to studies on how green HR practices impact employees' attitudes and behavior, scholars from the field of industrial and organizational psychology also became increasingly attentive to employee green behaviors, i.e., the ways that employees actually contribute to organizational goals to preserve the natural resources and environment, which are seen as a critical factor for achieving environmental sustainability (Ones & Dilchert, 2012). Ones and Dilchert (2012) concluded that, in European and US-American industries, between 13 and 29 percent of individual-level green behaviors are either required or expected as voluntary contributions. Similarly, Bissing-Olson, Iyer, Fielding, and Zacher (2013) examined predictors of pro-environmental behavior at work, i.e. the impact of daily affect and pro-environmental attitudes on pro-environmental behavior and whether daily affect moderates the relation between pro-environmental attitudes and respective behavior. They found that employees with positive affect (i.e., being calm, relaxed and content) were more likely to show pro-environmental behavior at work and that pro-environmental attitudes moderated this relationship. To date, research on pro-environmental behavior at work, a description used synonymously to describe employee green behavior, is considered mainly at the employee level and focuses, in particular, on the personal factors that may influence such behavior (Norton, Parker, Zacher, & Ashkanasy, 2015). One exception to this is a recent study by Pinzone, Guerci, Lettieri, and Redman (2016), who focused on the organizational level and explored the impacts of different sets of green HR practices on employees' collective voluntary green behaviors and how this relationship is mediated by collective commitment to change. They identified a positive influence of green HRM on employees' collective behaviors toward the environment, as well as evidence for a mediating effect of collective commitment. On the basis of their findings, these authors suggest that their method accounts for the social dynamics that characterize employee interactions and lead to shared perceptions of the "right behavior" toward the environment.

Moreover, there has been some research that provides an understanding of the mechanisms driving employee green behavior, such as behavioral intentions that impact employee green behavior (e.g., Holland, Aarts, and Langendam (2006) on recycling intentions; Paillé and Raineri (2015) on intentions to help co-workers to show

pro-environmental behavior). Nonetheless, Norton et al. (2015) call for more research that accounts for contextual factors at the institutional, organizational, leader and team level and examines how these contextual factors interact with personal factors and influence employee work behavior toward the environment.

The relevance of context in the HRM-environmental sustainability relation

Notwithstanding the recognized impact of contextual factors on individual level performance toward the environment (Norton et al., 2015), contextual factors have also been argued to effect the relationship between green HRM and organizational level performance (Jackson & Seo, 2010). Specifically, external stakeholders, such as customers, suppliers, or government agencies put increasing pressure on organizations to invest in environmental management systems, and green HRM may assume a role in regulating these pressures (e.g., tying senior managers' compensation to environmental performance indicators), even if this role is just a symbolic one (Jackson & Seo, 2010). Thus, Jackson and Seo (2010) have called for empirical studies that move beyond organizational boundaries and account for external stakeholder pressures to understand how these external factors shape the HRM-performance relationship. So far, however, few scholars in green HRM have explicitly taken contextual factors into account. Among the few, Guerci, Longoni, and Luzzini (2016) have drawn on stakeholder theory to show that companies use HRM to respond to external stakeholder pressures, such as the demand to pursue environmental improvement strategies that lead to better environmental performance.

The impact of internal and external contextual factors that shape and change HRM systems is increasingly considered in HRM research (Jackson, Schuler, & Jiang, 2014; Paauwe & Boon, 2018) and empirically demonstrated, for example, on sector differences (Combs, Liu, Hall, & Ketchen, 2006) and on organizational culture (Toh, Morgeson, & Campion, 2008). Further, Jackson et al. (2014) point out the need for contextualized HRM systems that are specifically targeted to meet specific strategic objectives, such as environmental sustainability. Collins and Kehoe (2017) support that claim and provide evidence to support a contextualized HRM system approach that maintains that HRM systems are only effective if tailored to specific performance needs.

National culture: Related to the academic discussion on contextualized HRM systems, there is a debate over whether cultural and institutional differences in HRM systems will decrease over time, and therefore be comparable and allow the evolvement of a global model of HRM (Brewster, Mayrhofer, & Smale, 2016). Scholars supporting such a convergence argument maintain that management systems are becoming increasingly similar because of growing globalization, technological development, and faster communication (e.g. Smith & Meiksins, 1995). However, evidence for the convergence argument is still deficient and ambiguous (Mayrhofer, Brewster, Morley, & Ledolter, 2011), and some scholars argue that whole convergence of management systems cannot be expected for two reasons. First, inherent cultural and institutional differences arguably influence the performance

of management systems, as Lawler, Chen, Wu, Bae, and Bai (2011) demonstrated regarding the HRM-performance relationship, for instance. Further, Lertxundi and Landeta's (2011) findings indicate that, in countries with high individualism, low power distance, low uncertainty avoidance, and high masculinity, high performance work systems are more successful than in countries with different cultural characteristics. Second, researchers have argued for a consideration of the aspect of time, which means differences between countries will remain, even if the same trends are observed, because the starting points for change and the time it takes to change creates variance between countries (Brewster et al., 2016).

Also, green HRM research has stressed the relevance of cultural and institutional factors, as researchers have claimed that green HR practices are likely to vary across firms, industries, and economies (Dumont et al., 2017; Haddock-Millar et al., 2016); comparative or cross-country studies remain limited, however. Among the few studies that explicitly took cultural factors into account, Haddock-Millar et al. (2016) found that country differences existed across three subsidiaries of a multinational company, in the ways that HR and environmental management were strategically aligned, positioned, and structured. Thus, the role of HRM varied noticeably across the subsidiaries, which is likely to impact environmental performance. For example, they showed that, in Sweden, employees understood the HR function to take a supporting role and remain largely uninvolved in environmental management, whereas in Great Britain, the HR function was perceived to assume a partner role and both HR and environmental management were aligned and strategically involved. In addition, findings from Sweden show commonalities with findings from Denmark, where Danish HR management demonstrates a low involvement of HR in the operation of the executive board (Strand, Freeman, & Hockerts, 2015). Reasons discussed include the relatively smaller firm sizes and less knowledge-sharing between HR practitioners about the value of being part of the executive board.

The Scandinavian way of management. As the empirical studies of this dissertation are situated within the context of companies established and headquartered in Denmark, there is further elaboration on associated management style. In particular, the management style in Denmark is described as being rather open and participative, where employees value exchange with and feedback from co-workers (Warner-Soderholm, 2012). Overall, the management style of Scandinavian countries (i.e. comprising the countries of Denmark, Sweden, and Norway) reflects many commonalities in their way of management (Grenness, 2003), and is greatly influenced by a culture of low power distance (Schramm-Nielsen, Lawrence, & Sivesind, 2004). The so-called Scandinavian management approach is characterized by cooperation and consensus building between different stakeholder groups, participation, encouragement, power sharing, and a focus on stakeholder well-being, humility and trustworthiness (Grenness, 2003). These ascribed characteristics of Scandinavian managers, specifically the consensus-oriented and conflict-avoiding approach, has been empirically supported in a study of Danish line managers who were found to consider 'motivating others' and 'staff well-being' as more important than managing

conflicts (Brandl, Madsen, & Madsen, 2009). A further distinguishing characteristic of Scandinavian management is the importance of corporate values, also referred to as value-based management (Brytting & Trollestad, 2000), according to which employees are encouraged to participate in value creation and implementation of values (Lindeberg, Månson, & Larsen, 2013).

Environmental sustainability in Scandinavia/Denmark. According to institutional theorists, the institutional environment may exert significant influence on organizational behavior in firms (Campbell, 2007). In line with this, it has been proposed that the specific cultural and institutional characteristics of Scandinavian countries have meaningfully shaped the relatively unique approach of Scandinavian-based companies to environmental and social responsibility (Strand et al., 2015). Specifically, institutional factors, such as strong governmental efforts to establish egalitarian policies and to foster people's well-being in their countries, have been argued to lead to high levels of social and environmental regulations and to impact the social and environmental performance of Scandinavian organizations (Strand et al., 2015). As Campbell (2007) proposes, firms are likelier to act responsibly if state regulations are strong, and this responsibility has been developed on the basis of negotiations and consensus building. Notably, "Denmark has emerged as a first mover among the Scandinavian countries" (Vallentin, 2015, p. 33), and Danish companies are regularly placed among the most sustainable companies, according to different sustainability performance indices, such as the Global 100 Index, the Dow Jones Sustainability Index and the Global Sustainability Competitiveness Index, where Denmark was ranked fifth of 180 countries in 2017 (SolAbility, 2017). Specifically, Denmark's efforts in the area of energy efficiency the use of renewable energy, such as wind power and biomass, a phasing out of oil and coal-fired power plants (already the lowest energy dependence within the European Union), and the environmentally progressive energy tax system have positioned Denmark as a frontrunner in the race toward carbon footprint reduction and supported the image of Denmark as a "green state" (Klok, Larsen, Dahl, & Hansen, 2006; Sovacool & Tambo, 2016). Still, the proposed image should be treated with caution; as the study by Sovacool and Tambo (2016) on consumer perceptions shows, many aspects of the country's energy management, such as the decentralized, bottom-up, participatory style of managing electricity networks have not gone uncriticized by the public. The proven excellence and primary position of Denmark's environmental sustainability efforts and evident environmental performance has provided the motivation for choosing Danish corporate research to serve as an empirical basis for the current investigation.

The study presented in this dissertation is situated within the Danish context, specifically within the context of manufacturing companies headquartered in Denmark. Drawing on the fundamental research on national culture undertaken by Hofstede (1980); Hofstede and Minkov (2010), national culture arguably has an important influence on how organizations practice HRM. According to their research (see also Hofstede, 1983; Hofstede, 1984), Denmark has been identified as a country pronouncing low power distance, a situation reflected in organizational characteristics, such as flat hierarchies, informal structures, and employee initiative.

Identified gaps in the green HRM research and potential contributions

In summary, the literature on green HRM shows that much valuable knowledge has been gained, at the organizational level, regarding the alignment and positioning of HRM and environmental management functions. Moreover, there is considerable literature at the individual level, regarding specific green HR practices and how they can enhance the ability, motivation, and opportunity for employees to contribute to environmental performance and impact employee green behavior. However, especially when drawing on the strategic HRM literature, a number of gaps were identified.

First, as the empirical evidence identifying HR practices that actually comprise an HRM system capable of effectively promoting an organization's environmental sustainability is rather mixed and mainly quantitative (Dumont et al., 2017; Zibarras & Coan, 2015), the first paper in this dissertation pursues a qualitative research design to determine which HR practices are actually used to support environmental sustainability goals in an organization and how the experienced role of green HRM differs from the ascribed role in the literature. Comparing the prescribed, potential role of green HRM with the enacted role in the first paper, the dissertation contributes to clarifying the implemented role of green HRM.

Second, the academic discussion among management scholars has emphasized the need to advance our understanding of how context shapes organizational behavior (Johns, 2006). Specifically, in green HRM research, Jackson and Seo (2010) have called for more context awareness when aligning a green HRM system to the business strategy. However, the important role of internal and external context factors that may influence a green HRM system has, so far, received limited attention (Guerci et al., 2016). Hence, the first paper in this dissertation addresses this gap by considering national culture (i.e. Danish culture) and the associated management style (i.e. Scandinavian way of management), as they have been suggested to influence the enacted role of HRM in Danish companies.

Third, it has been argued that, in addition to knowing what comprises an effective green HR system, it is also necessary to gain insight into how, and through which mechanisms HRM may help to boost environmental performance to achieve environmental sustainability goals (Jackson & Seo, 2010). Empirical studies that integrate a process perspective into examinations of green HRM have so far been limited (Guerci & Pedrini, 2014). Hence, by taking an HRM process perspective in the second paper, the dissertation contributes to a better understanding of the impact of the underlying processes on the green HRM-performance relationship. Specifically, as HRM research has empirically supported the disparity between the intended HR practices and employees' experiences thereof (Khilji & Wang, 2006), and as the focus in green HRM has been mainly on the intended green HR practices, as captured by HR and sustainability managers' perceptions (Guerci & Pedrini, 2014), the second paper emphasizes employees' perceptions of the implemented green HR practices. By doing this, the dissertation sheds

light on how employees' perceptions of green HR practices may affect employees' attitudes and behavior toward environmental performance goals and how that may impact the role of green HRM in achieving environmental sustainability.

Moreover, employees' perceptions and attributions have so far been examined separately, although a combined analysis would arguably enhance the understanding of the HRM-performance relationship (Sanders & Yang, 2016). Therefore, by linking the concept of HRM strength to HR attributions, the dissertation contributes to an enhanced understanding of the relation between the perceived HR messages and employees' ability to make unambiguous attributions about the organization's commitment to environmental sustainability.

Finally, it has been acknowledged that employees' behavior toward environmental performance is a critical success factor in achieving environmental sustainability (Ones & Dilchert, 2012). Moreover, it has been argued that current organizational settings require employees' agency (Virkkunen, 2006) and their innovative contributions to preserve natural resources (Buhl, Blazejewski, & Dittmer, 2016). While this field of research is still dominated by a traditional performance perspective (Holman et al., 2012), the third paper heeds the call for an active performance perspective (Frese, 2008), and with that, underlines the importance of employees' agency in complex innovation processes, such as environmental innovation, to contribute to the creation of more environmentally sustainable organizations.

In light of the above, the overall research question has been framed as follows:

What is the role of HRM in supporting environmental sustainability goals, and how is this role perceived and enacted?

In the following pages, Chapter 3 reflects on the methodology and methods that have been applied to answer this research question

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CHAPTER 3: RESEARCH METHODOLOGY

In this chapter, the methodology and methods applied in the empirical studies of this dissertation are presented. First, a reflection on the philosophy of science is provided to position the applied empirical approach on the metatheoretical level. Second, the methods used to collect the data for the empirical studies are introduced and related to each study. Third, the data analysis techniques and how they were used in each of the empirical studies are described. Finally, important quality criteria for qualitative studies are outlined, as well as how they apply to the presented empirical studies.

Reflections on the philosophy of science

A paradigm provides a worldview (Kuhn, 1970) and can be defined as "a general perspective or way of thinking that reflects fundamental beliefs and assumptions about the nature of organizations" (Gioia & Pitre, 1990, p. 585). Many different paradigmatic lenses have been developed, such as positivism, relativism, critical realism and social constructivism (Van de Ven, 2007). All of these paradigmatic lenses differ with respect to their ideological (i.e., assumptions about the research focus), ontological (i.e., assumptions about the nature of reality, objective vs. subjective), epistemological (i.e., assumptions about knowledge about the reality, quantitative vs. qualitative) and methodological views.

Advocates of positivism, a paradigm that has held a dominant position in social sciences for a long time, argue that there is one reality, one single truth that is independent of time and space and that can be measured and controlled (Guba & Lincoln, 2005). HRM literature has been argued to be, at least implicitly, positivistic (Legge, 2005). This position had been challenged by the relativism and critical realism perspectives (Van de Ven & Poole, 2005). Critical realism assumes that a "real world" or objective reality exists that is independent from human minds or knowledge about it (Guba & Lincoln, 1994, 2005). Yet, critical realists argue that the knowledge about a phenomenon is socially constructed and does not replicate the truth and conceptual models present the view of the model builder (Van de Ven & Poole, 2005). Relativists believe that the truth is observer-dependent and subjective because it is perceived and socially constructed by individuals (Gioia, 2003). This latter assumption is shared by social constructivists; however, they add that knowledge about a phenomenon is socially created through interactions with others and society (Guba & Lincoln, 1994; Mir & Watson, 2000).

A growing interest in non-positivist views and qualitative research has contributed to new ontological, epistemological and methodological approaches, leading to "interbreeding" between seemingly incompatible paradigmatic lenses, and it has led scholars to recognize that holding on to a single paradigm might be limiting (Lincoln, Lynham, & Guba, 2011, p. 97). Integrating multi-paradigmatic lenses has been argued to broaden the perspective and to enrich scholars' viewpoints because it enables discourse between advocates of different paradigms (Guba & Lincoln, 2005). Also, a multi-paradigmatic viewpoint better accommodates the multifaceted reality current organizations face due to technological and cultural changes. For instance, questions arise as to how organizations can deal with complex and often contradictory demands such as control and autonomy (Bouchikhi, 1998) or growth and sustainability (Hahn, Pinkse, Preuss, & Figge, 2015) that lead to tensions (Lewis, 2000; Lewis & Kelemen, 2002). Consequently, these authors argue that there is a growing need to understand how organizations can handle such complexity successfully without ignoring upcoming tensions.

Advocates of a multi-paradigmatic lens aim to foster a better understanding of the paradoxical situation of organizations by integrating multiple worldviews while disapproving of the assumption of one single truth (Lewis & Kelemen, 2002). Multi-paradigmatic inquiry promotes an accommodating ideology, a stratified ontology and a pluralist epistemology (Lewis & Kelemen, 2002). Explicitly, according to these authors, advocates of a multi-paradigmatic view embrace an accommodating ideology, meaning that different and even contrasting paradigmatic lenses are valued and integrated. Moreover, Lewis and Kelemen (2002) assume that a multi-paradigmatic view is distinguished from other views through a stratified ontology that claims the coexistence of multiple realities and acknowledges realities that are "made" (i.e., entities such as structure and culture) and the ones that are "in the making" (i.e., processes). Lastly, these authors assume a pluralist epistemology, applying multiple views by which to reflect on existing plurality and inherent tensions. Accordingly, they see organizations as social spaces in which organizational actors are increasingly confronted with contradictory goals while entities are also becoming more controlling. However, the multi-paradigmatic viewpoint is not without critics: Scholars criticize that different paradigmatic approaches do not share a common ideology, ontology, epistemology and methodology and are thus argued to be incommensurable (Burrell & Morgan, 1979; Ladyman, 2012). Despite these criticisms, the multi-paradigm inquiry appears to be a useful viewpoint to provide a comprehensive understanding of the researched phenomenon (Bowers, 2011).

The choice to adopt this viewpoint in this dissertation was driven by three suppositions: First, HRM research is argued to be multidisciplinary, as different academic disciplines such as psychology, economics and sociology have shaped and influenced this field with different theoretical viewpoints and frameworks (Jackson & Schuler, 1995). Correspondingly, the dissertation draws on multiple research disciplines to examine the role of green HRM, such as HRM, sustainability, environmental management, innovation management and organizational psychology.

Second, the value of a multi-paradigmatic view of HRM has been acknowledged (Brewster, 1999; Martín-Alcázar, Romero-Fernandez, & Sánchez-Gardey, 2005). Indeed, Martín-Alcázar et al. (2005) proposed an integrative model of strategic HRM, integrating the universalistic, contingency, configurational and contextual perspectives that when combined provide a comprehensive perspective on HRM and contribute to HRM theory development. More specifically, according to Martín-Alcázar et al. (2005), the universalistic perspective assumes best practices, which is how certain HR practices can lead to superior organizational performance, and this perspective contributes by highlighting the value of the human factor in organizations. The contingency perspective instead denies the existence of best practices and assumes that the HR-performance relationship depends on third variables, so-called contingency variables. The configurational perspective, however, rejects the goal of the universalistic perspective to define best practices and proposes, unlike the contingency perspective, that different configurations of HR practices can be equally efficient in achieving an organizational goal. Different from the aforementioned approaches, the contextual perspective expands the HRM model by viewing the relationship between the HRM system and its socioeconomic and organizational context. Drawing on the work of Martín-Alcázar et al. (2005), this dissertation integrates different elements of these perspectives to underline important contributions of each perspective. For example, the dissertation acknowledges the valuable input individual stakeholders can provide to environmental performance but also considers underlying dynamics, such as perceptions and attributions, and context factors, such as the environmental strategy and management support, that influence how these individual stakeholders can contribute to environmental performance. Moreover, the dissertation broadens the perspective on green HRM by addressing the influence of national culture on the HRM-environmental performance relationship and by implying that there is not one ideal green HRM configuration but the need to adapt the design of green HRM to the particular context.

Third, a multi-paradigmatic view highlights the volatile and paradoxical situation of organizations and thus is consistent with a paradoxical and pluralistic perspective (Lewis & Kelemen, 2002). Related to this dissertation, it has been argued that the implementation of sustainable HRM makes such a paradoxical situation even more visible (Ehnert, 2009). Guerci and Carollo (2016) identified numerous paradoxes that organizations and specifically HR professionals are confronted with when implementing green HRM. Thus, a single paradigm approach might not be sufficient to recognize the paradoxical tensions and ambiguities of green HRM implementation because it lacks reflection on the multifaceted and volatile aspects of such complexities (Mendenhall, 1999). Therefore, scholars increasingly call for the application of a multi-paradigmatic approach to sustainable and green HRM that acknowledges the complexities and paradoxical tensions in integrating sustainability into organizations and promotes an active approach to deal with tensions (Aust, Brandl, & Keegan, 2015; Ehnert, 2009; Guerci & Carollo, 2016).

Methodology

Qualitative research has the advantage of using "naturally occurring data" to describe how a phenomenon is constituted and how, depending on the context, a seemingly stable phenomenon can change (Silverman, 2011, p. 17). Specifically, in the empirical studies presented in this dissertation, a qualitative research design was adopted for the following reasons: First, the nature of the research object (i.e., the integration of environmental sustainability in HRM) makes clear that this research is about a social phenomenon, and in such research, according to Basit (2003), the quality and richness of the response to the social phenomenon is decisive. Furthermore, qualitative inquiry "provides a narrative of people's view(s) of reality and it relies on words and talk to create texts" (Rynes & Gephart Jr, 2004, p. 455). Therefore, it is possible to "zoom in" and get close to the research object and spend time at the research site, which is argued to be important (Jackson, Schuler, & Jiang, 2014). Also, qualitative inquiry is appropriate when focusing on how individuals perceive something and why they perceive it in a certain way (Basit, 2003), as well as when the interest lies in the process through which the event takes place (Huberman & Miles, 2002). Concerning this empirical study, the focus was first to provide insight into the individual perceptions of managers and employees regarding how HRM contributes to corporate environmental initiatives and secondly on the process of how employees accomplish environmental initiatives.

The research field of sustainability, including green HRM, has been dominated by quantitative methods and positivistic inquiry (Ehnert, 2009; Haddock-Millar, Sanyal, & Müller-Camen, 2016). These methods have provided evidence for an empirical relationship between sustainable/green HRM and performance. However, what seems to be lacking are insights into how to create and alter an HRM system that is similar to the one prescribed or desired. Qualitative research methods have been argued to be particularly useful to address the inherent complexity of creating an effective HRM system and help to generate insights into the underlying mechanisms and complex dynamics that occur when changing HRM systems (Jackson et al., 2014). Implementing changes to an HRM system affects different stakeholder groups, and thus, it seems relevant to capture how different stakeholder groups perceive and respond to such changes. Those insights are argued to be highly relevant to scholars and practitioners alike. The appreciation of the value of qualitative methods has also led to an increasing interest in qualitative research into green HRM (Haddock-Millar et al., 2016). In particular, it has been argued that when exploring a research field that is just evolving, such as sustainable/green HRM, qualitative research methods offer an important source for theory development (Ehnert, 2009).

Data collection methods

In the empirical studies included in this dissertation, various qualitative data collection methods were applied to accommodate the research aim. While interviews represented the main data source format across all three empirical studies, they were supplemented with additional data sources such as observations and archival data. In particular, the case study in paper three relied on multiple data collection techniques (interviews, observations, field notes, photographs, public and internal reports, among others) to show the process of employees' actions from generating to implementing environmental initiatives. Common to all three empirical studies was the approach to treat the respondents as "knowledgeable agents" (Gioia in Gehman et al., 2018, p. 291), meaning that respondents are capable of explaining their thoughts, emotions, intentions and actions and thus provide meaningful insights into the perceived realities of "creators" and "users" of green HR practices.

Qualitative interviews

Qualitative interviews formed the main part of the empirical studies in this dissertation. Although the researcher was aware of challenges associated with interviewing, such as interviewer bias, variability

rapport, and validity issues regarding the interpretation of data (summarized in Minichiello, Aroni, Timewell, & Alexander, 1995), it can be argued that employees' perceptions, interpretations or representations of their experiences are otherwise not easily accessible (Byrne, 2004). Specifically, one-to-one interviews are the most frequently chosen form of qualitative research (Silverman, 2011). From an emotionalist stance, the aim of interviews is not to capture objective "facts" but to generate authentic accounts of people's experiences (Crouch & McKenzie, 2006, p. 485), whereby the term "authentic" can be interpreted as portraying a realistic picture of a situation. However, as constructionists argue, the respondents' statements can only be fully understood when they are seen in the context of their world; thus, this context needs to be taken into consideration when interviewing, analyzing and interpreting the interview data (Kitzinger, 2004). Therefore, Silverman (2011) recommends engaging in observations before interviewing. In the empirical studies of the dissertation, the company sites and units at which respondents worked were generally observed prior to the interviews, with one exception (i.e., the company site of Lego).

In addition to the observations, a total of 34 interviews were conducted between May 2015 and August 2016. These interview data were used for papers one and two, as well as the case study in paper three, as shown in Table 2. Frequently, before, during and after the interview process, notes were taken to reflect on observations that were not captured in the interview or on thoughts about something a respondent said during the interview that raised specific interest. Moreover, after a few interviews, when initial patterns seemed to form, mind maps or preliminary thematic maps (based on Braun & Clarke, 2006) were sketched to understand how the respondents' statements connected to these initial patterns. The majority of interviews, except for two[6], were audio-recorded and subsequently reviewed and transcribed by the interviewer with the help of software (Nvivo 10 and 11). In many cases, interviews were followed up by a second interview when the interviewer felt that further understanding of respondents' statements was necessary or that something was left "unspoken" that would need further exploration, or they were followed up by e-mail to ensure that the respondents' statements were understood in the respondents' terms.

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[6] Two respondents did not permit recording as it would have made them feel uncomfortable. In these two cases, the interviews were documented by hand.

Table 2 Overview of interview participants

Respondent[7]	Respondent title	Respondent role	Interview date	Number of interviews	Data coverage
SA	HR manager	Employee engagement for CSR	19.05.2015 25.02.2016	2	Paper 1
AF	Environmental manager	Life cycle analysis	26.08.2016	1	Paper 1
AB	Environmental manager	Subject matter expert: environment	02.03.2016	1	Paper 1
JD	HR manager	Senior business partner for QSE	05.11.2015 18.02.2016	2	Paper 1
MS	HR manager	HR strategy	17.06.2015 03.03.2016	2	Paper 1
VI	Quality manager	Quality assurance	03.03.2016	1	Paper 1
JE	Quality manager	Quality assurance	03.03.2016	1	Paper 1
JM	Environmental manager	Employee engagement for environment	07.03.2016 27.04.2016	2	Paper 1
SB	HR manager	People analytics, employee engagement	29.06.2016 19.02.2016	2	Paper 1
PM	Environmental project manager	Project facilitator	16.10.2015 05.11.2015 16.05.2016	3	Papers 1, 2, 3
MT	Senior mechanic	Project lead	16.05.2016 30.05.2016	2	Papers 2, 3
JM	Mechanic	Project member	16.05.2016 30.05.2016	2	Papers 2, 3
PE	Engineer	Project lead	19.07.2016	1	Papers 2, 3
MA	Electrician	Project member	30.05.2016	1	Papers 2, 3
CL	Electrician	Project member	30.05.2016	1	Papers 2, 3
TH	Mechanic	Project member	30.05.2016	1	Papers 2, 3
PE	Technician	Project member	05.01.2016	1	Papers 2, 3
KC	Environmental project manager	Project facilitator	05.01.2016	1	Papers 2, 3
RF	Department head for quality and environment	Project facilitator	05.01.2016 14.06.2016	2	Papers 2, 3
MH	Manager for quality and environment	Project sponsor	05.01.2016	1	Papers 2, 3
VT	Sustainability project consultant	Project lead	20.05.2016 19.08.2016	2	Paper 2
SN	Sustainability consultant	Project member	16.08.2016	1	Paper 2
KT	Head of group sustainability	Project sponsor	13.06. 2016	1	Papers 2, 3

Source: Compiled by the author

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[7] The names of the respondents are reduced to their initials to ensure the respondents' anonymity.

In the first and second papers of this dissertation, the interviews were semi-structured. The goal of these interviews was to provide authentic accounts of employees' and managers' perceptions and experiences of how HR practices supported the achievement of environmental sustainability. While the chosen interview format allowed for flexibility in the interview process and aimed to see the world from the respondents' viewpoints without "going native" (Fontana & Frey, 2000, p. 655), at the same time, it was necessary to prepare an interview guide to structure the interview process at the beginning and to provide respondents with a clear frame of the topic and understanding of the interview aim.

Case study

The data for paper three were collected within a case study at a large manufacturing company headquartered in Denmark in 2016 over a period of five months. Case studies are argued to be particularly useful when the research focus is on understanding the dynamics that unfold in a particular real-life setting and when the aim is to gather in-depth knowledge of social actions, which is particularly relevant in single case studies (Eisenhardt, 1989; Stake, 1995; Thomas, 2011). Moreover, they are argued to be useful when knowledge about the researched phenomenon is limited and mainly of conceptual nature (Yin, 2017).

A single case study design with two embedded cases that depict employees' behavior in environmental initiatives was chosen to closely examine the process of how employees take personal initiative to develop, champion and implement bottom-up innovations that aim to reduce the company's environmental footprint. The aim of this case study was to explore employees' initiative in a specific and particularly complex setting and contribute to theory development on employee-driven innovation (EDI) by integrating an individual agency approach. While the aim of single case studies can be to produce explanations that have wide resonance (Mason, 1996), they are not intended for generalizations from the case study findings to the population, as is possible in quantitative studies. Instead, single case studies support generalization through theoretical inference (Silverman, 2011). In the case study in paper three, the two embedded cases can be considered typical or emblematic cases that embody key features of a phenomenon that can be found in other similar cases (Gobo, 2008). More specifically, the embedded cases of paper three were two environmental initiatives within a large manufacturing company that had been successfully developed and implemented from the bottom up.

Sampling

There are different sampling strategies available in qualitative research studies: Maximum variation, critical case, convenience or purposeful sampling are among the most frequently used sampling approaches (Creswell, Hanson, Clark Plano, & Morales, 2007). The empirical studies in this dissertation were guided by Patton's (2002) approach to conducting a purposeful sampling strategy. The logic of purposeful sampling is to choose information-rich cases that generate in-depth insight and understanding of the researched phenomenon. It enables choosing a case that illustrates a certain feature or process of interest. Purposive sampling is argued to be a common sampling method in which researchers "seek out groups, settings, individuals, where the processes under study are most likely to occur" (Denzin & Lincoln, 1994, p. 202). Thus, because the goal is not to generalize from a sample to the population, the chosen cases can be carefully selected with respect to the insights they can provide that help to answer the research question. Concerning the case study in paper three, the chosen setting was a manufacturing company that is renowned for its environmental sustainability efforts and demonstrates high environmental performance while also being a market leader in its field. Moreover, the company is based in Denmark, a country that has been recognized as a forerunner in environmental sustainability (Vallentin, 2015). The two embedded cases were environmental initiatives that were successfully implemented, at least on a local level. The individuals that were chosen were either actively involved and highly knowledgeable employees in the process of generating, championing and implementing environmental initiatives or were managers who supported the employees in their endeavors.

Data sources

Case studies combine various data collection methods such as observation, interviews, questionnaires and archival data to increase the validity of the findings (Yin, 2017). In-depth interviews have been argued to be specifically suitable when investigating a sensitive topic and when respondents' perceptions, thoughts, emotions and subjective reactions to that topic cannot be directly observed (Crouch & McKenzie, 2006). Engaging in in-depth interviews has many advantages, such as the opportunity to obtain rich material through active listening and allowing space, as well as the opportunity to react to the respondents' statements by broadening or shifting the interview in response to the emergent interview material and encourage reflection (Noaks & Wincup, 2004).

In the third empirical paper, in-depth interviews were conducted with 17 employees who were either directly involved in generating and implementing environmental initiatives or who supported employees' involvement (see Table 1), producing approximately 101 hours of data (see Table 2). The aim of these interviews was to gain in-depth insight into employees' behavior when generating, championing and implementing environmental initiatives and how the perceived complexity of such innovation activities and other perceived organizational challenges influenced their behavior throughout the process. Prior to and after the interviews, e-mail correspondence, video calls or follow-up interviews were used to support the understanding of respondents' perceptions and experiences.

In addition to these interviews, 40 hours of direct observations took place without any interference or participation, which Patton (2002) recommended as an important data source. These field observations provided insight into the respondents' workplace, their daily routines, the machines and processes that were related to their environmental initiatives, their communication with colleagues and managers, and the company's culture. Furthermore, these observations provided opportunities to experience the "lived" or "enacted" sustainability culture, and physical artifacts such as the technical systems that were redesigned to meet the initiatives' goals. Moreover, the observations allowed for an in-depth understanding of the company's initiatives and the technical challenges employees encountered when initiating, championing and rolling out the environmental initiatives. Also, photographs were taken of different artifacts, such as the machinery that played a role in the environmental initiatives or displayed honors that demonstrate the company's sustainable performance. During and after the observations, field notes were taken by hand in an unstructured way. These field notes were taken to document observations during the company visits and to document behavior such as nonverbal gestures and facial expressions during interviews that reinforced or contradicted the respondents' statements. They were also taken to document personal reflections after interviews.

Moreover, internal presentation materials, annual and sustainability reports, press releases and internal blog entries were reviewed to gain an understanding of the "espoused" organizational strategy and how vision, mission and goals with respect to environmental sustainability were anchored in that strategy, as well as how environmental sustainability was communicated to external and internal stakeholders. An overview of the data sources applied in the case study of paper three is provided in Table 3.

Table 3 Overview of collected case study data

Case	Field notes	Internal documents (presentations, memos, photos)	Interview transcriptions
MPRP	Ca. 46 pages	14 pages of presentation material	47 pages
LP	Ca. 40 pages	13 pages of presentation material	30 pages
Concerning both projects		55 pages of presentation material	24 pages
Overall	Ca. 86 pages	Ca. 195 pages; hereof ca. 82 pages of internal presentation material, 103 pages of reports and CEO blog entries, 10 photos	101 pages

Source: Compiled by the author regarding paper three.

Data analysis

The analysis of qualitative data has been argued to be a vital and highly demanding step (Miles, 1979; Miles, Huberman, & Saldaña, 2014), perhaps even the most complex one (Thorne, 2000) in the qualitative research process. During the analysis, the researcher must gain an in-depth understanding of the data while constantly refining and sharpening the analysis. The aim of qualitative data analysis is to reduce the complexity of the data, to structure, categorize and make sense of the data to explain the researched phenomenon and enable the reader to understand the data in its context (McCracken, 1988). A central part of the data analysis is the categorization of the data or coding, which has been argued to be an important organizational tool and an essential part of the research outcome (Tesch, 1990). Generally, coding can be described as a process of grouping and labeling chunks of data to find commonalities, differences and patterns that relate to the researched phenomenon and enable the researcher to form a conceptual scheme (Basit, 2003). Commonly, the literature on qualitative data analysis divides coding into two methods: inductive coding, which is based on the grounded theory approach and does not use pre-coding (Glaser & Strauss, 2017; Glaser, Strauss, & Strutzel, 1967), and deductive coding (Miles & Huberman, 1994), which starts with a list of preliminary codes prior to the fieldwork. These codes are derived from the literature review, conceptual framework, research questions, and hypotheses.

Overall, the data analyses of the empirical studies in this dissertation did not follow a deductive or inductive approach exclusively. Instead, the empirical studies were guided by a so-called "abductive logic" that comprises a mixture between a deductive and inductive approach, a constant moving back

and forth between what has been observed in the empirical world and the relevant theory, linking the data to theoretical ideas or concepts (Dubois & Gadde, 2002; Ann Langley in Gehman et al., 2018). This approach has been recognized as "fruitful if the researcher's objective is to discover new things - other variables and other relationships" (Dubois & Gadde, 2002, pp., p. 559).

In the following paragraphs, the two applied data analysis techniques, the thematic analysis (Braun & Clarke, 2006) and the Gioa method (Corley & Gioia, 2004), are introduced and related to how they were used in the analyses of the data from the three empirical studies.

Thematic analysis

Thematic analysis is a qualitative data analysis method grounded in psychology to systematically analyze qualitative data and to identify meaningful patterns across a data set in relation to a specific research question (Braun & Clarke, 2006; Clarke & Braun, 2017). Thematic analysis is argued to be an especially useful and accessible method for novice qualitative researchers because it is explicitly described as "just a method" (Braun, Clarke, Hayfield, & Terry, 2019, p. 58) that provides straightforward guidance on how to systematically analyze and code qualitative data (Braun et al., 2019). Braun and Clarke (2006) argue that their method is flexible in terms of the size of data sets that are analyzed, and it can be used to identify semantic (i.e., observable, descriptive) and/or latent (i.e., implicit) meanings in the data. Moreover, according to these authors, this method can be conducted independently from the theoretical viewpoint; whether the approach is inductive or deductive is argued to be less relevant than the consistency and coherence of the overall framework. In line with this, Braun and Clarke (2019) argue that despite the importance of being clear regarding the theoretical stance that guides the research process, data analysis and coding are often experienced as a combination of an inductive and deductive approach: "It is impossible to be purely inductive, as we always bring something to the data when we analyze it, and we rarely completely ignore the semantic content of the data when we code for a particular theoretical construct" (p. 58-59).

As suggested by Braun and Clarke (2006), thematic analysis is divided into the following six phases: First, one has to become familiar with and immersed in the data. Second, the data are categorized and labeled through initial codes. These codes can be either on the semantic level (i.e., the codes stay close to the content of the data, to the respondents' wording) or on the latent level (i.e., the codes provide an interpretation of the underlying meaning of the data), or a mixture of both. Braun and Clarke (2006)

argue that the codes allow the analyst to generate themes and subthemes that grasp an important pattern or meaning in the data set. Third, the initial codes are reviewed for possible similarities or differences across the codes, then the codes are clustered into groups with similar meaning, and relationships between the themes or subthemes are analyzed to provide an overall story of the data. A thematic map is valuable due to providing an overview of the themes and how they relate to each other. Fourth, the themes are reviewed and revised in an iterative process to check if they capture the content of the data and how they relate to one another without overlapping. Fifth, the themes are named and defined according to what they uniquely contribute and how they are relevant to answer the research question. Finally, the analysis needs to be reported: Themes should be presented clearly to tell a convincing story of the data, and how the themes connect to the relevant theory should be argued coherently. Nowell, Norris, White, and Moules (2017) noted, however, that although the six phases appear as a linear process, thematic analysis is an iterative and reflective process that involves continuously going back and forth between the phases.

The analyses of papers one and two of this dissertation followed the thematic analysis method as described by Braun and Clarke (2006). More specifically, this method was used for paper one to sort the data into three themes that related to the role of HRM in supporting environmental initiatives: first, the enacted HR practices; second, the espoused role of HRM; and third, the perceived role of organizational values and culture. The data analysis of paper two moved from the semantic, descriptive level to the latent, interpretive level, similar to what Guest, MacQueen, and Namey (2012) refer to as the structural coding process. In detail, this meant identifying and describing the enacted HR practices, then interpreting how employees perceived these HR practices and what patterns these perceptions formed across the identified green HR practices. In addition, paper two used thematic maps to structure the themes and to iteratively refine and reduce them to form coherent themes.

The Gioia method

The data analysis approach of Corley and Gioia (2004), also referred to as the Gioia method (Gioia, Corley, & Hamilton, 2013), is grounded in the social constructivism paradigm. Accordingly, the data analysis is a rather inductive, data-driven process, giving voice to the informants and avoiding imposition of theoretical presumptions. Still, what seems to unite both data analysis methods is the wish to demonstrate qualitative rigor (Corley & Gioia, 2004; Gehman et al., 2018). Corley and Gioia (2004) described the creation of first-order codes and to second-order or theoretical themes from raw data that

create the basis for the data structure. Structuring of the data is argued to be an essential step in demonstrating qualitative rigor (Gioia et al., 2013). As Corley and Gioia (2004) illustrated, in order to depict the dynamics of micro-processes in organizations, the data structure should accommodate these needs and hence should be complemented by an inductive model that is grounded in the data (Gehman et al., 2018; Gioia et al., 2013).

Depicting the dynamic nature of the data and providing room for the respondents' lived experiences motivated the data handling in paper three. In this paper, it was particularly important to ensure that respondents were treated as knowledgeable agents, to give voice to the employees that were directly involved in environmental initiatives and to demonstrate self-initiated changes in their behavior when generating, championing and implementing the initiatives from the bottom up. Although the data analysis in paper three was inspired by the Gioia method, the analysis also involved deductive elements because relevant literature was consulted and theoretical frameworks were studied prior to and during the data analysis to enable a better understanding and theoretical embedding of the derived themes. Furthermore, the analysis in paper three was inspired by the thematic analysis as described by Braun and Clarke (2006), in particular to create thematic maps that were perceived as crucial means to form and refine the themes.

Rigor in qualitative studies

Although some disagreement remains concerning how to achieve rigor in qualitative research, it has been acknowledged that independently from the underlying paradigm or applied research method, a researcher has to demonstrate the integrity and legitimacy of the research process (Nowell et al., 2017; Tobin & Begley, 2004). Trustworthiness (originally developed within the naturalistic paradigm to provide a counterpart to the quantitative criteria of validity, reliability and generalizability) has been particularly questioned by positivists (Shenton, 2004) but has also been argued to be one important way to convince other researchers, policy makers, practitioners and the public that one's own research is understood as legitimate (Nowell et al., 2017). Although newer developments of quality criteria exist (Tracy, 2010), the originally developed criteria by Guba (1981) and Lincoln and Guba (1985) are widely accepted and recognized to demonstrate trustworthiness independently of the paradigmatic view and have been applied to thematic analysis (Nowell et al., 2017), the data analysis method that was predominantly used in the empirical part of this dissertation. Comparable to the traditional criteria for quantitative research, Lincoln and Guba (1985) proposed four criteria that would help to establish trustworthiness in qualitative data,

namely credibility, transferability, dependability and confirmability. These criteria are described below, and how they were applied in the empirical studies is presented in Table 4.

Credibility, comparable to internal validity, is described as the "fit" between the respondents' view and the researchers' presentation of the data (Tobin & Begley, 2004). Lincoln and Guba (1985) suggested some techniques that can help to reach credibility, such as prolonged engagement, persistent observation, data collection triangulation and researchers' triangulation. Moreover, Lincoln and Guba (1985) suggested member checks (i.e., checking the accuracy of data) and to examine the referential adequacy. In addition, credibility can be supported by reporting all findings (Côté & Turgeon, 2005), including findings that do not seem to correspond with the conceptualization in the literature.

Transferability, comparable to external validity, refers to the generalizability of the findings (Tobin & Begley, 2004). To increase the transferability, it is suggested to provide rich narratives (Lincoln & Guba, 1985). Direct quotes have been acknowledged as an indispensable component in presenting the data analysis (King, Cassell, & Symon, 2004). However, the transferability of findings should be treated with caution because contextual factors can impact the findings (Gomm, Hammersley, & Foster, 2000). The goal in qualitative research is not to replicate the findings in the same or a very similar situation but "to produce a coherent and illuminating description of and perspective on a situation that is based on and consistent with detailed study of that situation" (Schofield, 2002, p. 174). The focus is to provide sufficient contextual information to avoid other researchers deriving conclusions that are inconsistent with the original research contribution. Hence, in accordance with Lincoln and Guba (1985), a central aspect of transferability is the concept of "fittingness" (i.e., how the context studied matches/is congruent with other contexts that one is interested in studying).

Dependability, comparable to reliability, is described as ensuring consistency of the data over time (Tobin & Begley, 2004). Miles et al. (2014) argued that dependability can be enhanced if the research process is clearly documented and the research design demonstrates consistency with the research aim and research question in order to be traceable for other researchers. A so-called audit trail might help to achieve dependability, that is, to show the decision process to enable other researchers to follow up on that research and arrive at similar, not contradictory, conclusions (Koch, 2006). However, two things have to be considered when attempting to obtain the same results: The researcher's investigation of a phenomenon is tied to the study's context and the phenomenon under investigation because the observation of human behavior is of a changing nature (Marshall & Rossman, 1999).

Table 4 The application of the quality criteria to the empirical studies

Quality Criteria		Empirical studies
Credibility	Prolonged engagement	• Site visits • Pre-interview and follow-up communication with key informants • Analysis of publicly available documents (e.g., press releases, company websites, sustainability reports)
	Methodological triangulation	• Interview data were supplemented by site visits, policy documents, reports, internal documents from presentations, meetings • The case study in paper three was also complemented by direct observations, field notes and photographs
	Researchers' triangulation	• Follow-up communication between the researcher and the respondents to enhance the fit between the researchers' understanding and the respondents' view • Continual reflections on the data, codes and themes with the co-authors and the main supervisor
	Member checks (i.e., checking accuracy of data)	• In the process of forming themes, the raw data were compared to relevant theoretical concepts • Follow-up communication between researcher and respondents
	Reporting all findings	• All findings, including those deviant from the theoretical concepts, were reported
Transferability	Rich narratives	• Rich descriptions of respondents' experiences, documented through exemplary quotes, were provided • A broad presentation of various respondents was ensured
	Fittingness	• Contextual information was provided • The geographical area (i.e., Denmark) and the organizational context (i.e., mid- and large-sized companies in the manufacturing sector) were made transparent and described
Dependability	Audit trail	• Clear and traceable documentation of the research process in the empirical papers, supported by tables and figures • All records of the raw data, field notes, transcripts and initial ideas about coding the data were archived
Confirmability	Markers for researchers' choices	• The researcher's arguments for choosing a specific research method were described in the method section • Weaknesses of the employed method were discussed in the limitations section
	Research guided by respondents' experiences	• Papers were guided by the employees' and/or managers' perceptions, expressed in the provided detailed narratives and exemplary quotes

Source: Compiled by the author

Confirmability, comparable to objectivity, means to establish clarity and trust that the findings and conclusions have been derived from the data (Tobin & Begley, 2004). In doing so, Koch (1994) suggested including so-called markers throughout the study that provide reasons for why a certain theoretical

framework or method was chosen. Miles and Huberman (1984) pointed to the importance of reporting the researcher's reasoning for choosing a specific research method and also of admitting the weaknesses of the employed method. Also, in order to enhance confirmability, it is important to ensure that the research findings are guided by the respondents' experiences and not the researchers' preferences (Shenton, 2004). According to Lincoln and Guba (1985), confirmability can be enhanced if the other criteria, credibility, transferability and dependability, are attained.

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CHAPTER 4: PAPER 1

The espoused versus enacted role of HRM in supporting environmental initiatives

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Abstract

In this paper, we seek to contribute to a clearer understanding of HRM's role in supporting environmental initiatives. To this end, we present a qualitative study conducted in five Danish firms with exemplary reputations for their environmental performance, where we identify HRM's espoused and enacted role in supporting environmental initiatives. Our findings suggest that the role of HRM in supporting these initiatives is rather implicit, if not peripheral, which we argue may be due to the Scandinavian context. Moreover, we propose that while the enacted role of HRM in supporting environmental initiatives may

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differ considerably from what is prescribed in the literature, HRM can play a valuable role in the co-creation of initiatives to support environmental performance.

Keywords: Green HRM, green HR practices, HR role, national culture, environmental initiatives

Introduction

Quite recently, scholars have begun investigating the potential role of Human Resource Management (HRM) in promoting environmental initiatives (Harris & Tregidga, 2011; Jabbour, Santos, & Nagano, 2010; Renwick, Jabbour, Muller-Camen, Redman, & Wilkinson, 2016). Indeed, Harris and Tregidga (2011, pp. 238-239) emphasize the important role of HRM in supporting environmental initiatives, stating: "…any corporate shift from a 'business as usual' position to a more environmentally responsible paradigm requires organization-wide environmental sensibilities… [and that] such a shift will require, or will at least be assisted by, the inclusion and involvement of the HR function." In addition, international non-governmental organizations such as the World Business Council for Sustainable Development (WBCSD) and the Chartered Institute of Personnel and Development (CIPD) have begun to discuss how HRM could support an organization's environmental goals (CIPD, 2007; Pierce & Madden, 2005). The rationale behind these assertions is that HR practices should encourage employees to act in-line with environmental goals to reduce negative environmental impact and enhance environmental performance (Jackson, Renwick, Jabbour, & Muller-Camen, 2011; Jackson & Seo, 2010; Renwick et al., 2016).

While there is some limited evidence of a positive impact of HRM on environmental outcomes (Guerci, Longoni, & Luzzini, 2016; Paillé, Chen, Boiral, & Jin, 2013) much of this literature in this new research stream remains conceptual, and empirical studies contributing to what has been referred to as Green HRM scholarship are still scarce (Jackson et al., 2011; Renwick et al., 2016). Some scholars contend that the limited focus on Green HRM may be due to organizations not yet fully understanding how to make better use of HRM to support the environmental objectives (Zibarras & Coan, 2015), and others suggest that HR managers often avoid taking an active role in encouraging pro-environmental objectives (Harris & Tregidga, 2011). The disparity between the conceptualized role of HRM in supporting these environmental activities on the one hand, and the dearth of empirical evidence to support HRM in realizing this potential on the other, suggests a gap between the espoused and enacted role of

HRM in supporting environmental activities. Notably the notion that a gap exists between HRM intentions and practice has been addressed in the literature (Khilji & Wang, 2006; Piening, Baluch, & Ridder, 2014), where scholars emphasize that the strategic goals of HRM are not always operationalized in a way that makes their intent clear to employees. While in no way dismissing the relevance of employees' perceptions of HRM, we take a step back in this paper to gain an understanding of how HR managers view their own role in supporting environmental initiatives, as well as how the role of HRM in supporting environmental initiatives is understood by key stakeholders in their organizations. We would argue that exploring potential gaps between the espoused and enacted roles of HRM in supporting environmental initiatives is imperative to progressing beyond normative and prescriptive models of HRM, and herein advancement of knowledge of HRM theory and practice. Therefore, the research question underpinning the study presented in this paper is:

'What is the relationship between the *espoused* role of HRM in supporting environmental initiatives and the *enacted* HR practices used to support these initiatives?'

To address this question, we designed a qualitative study including interviews with HR and environmental managers in Danish firms recognized for environmental performance excellence. Scandinavian based firms continuously appear as top performers in terms of environmental performance (Strand, Freeman, & Hockerts, 2015), and Denmark in particular is considered a leader in this areas, according to sustainability performance indices such as the Dow Jones Sustainability Index and the Global Sustainability Competitiveness Index, where Denmark was ranked fifth of 180 countries included in 2017 in the latter index (SolAbility, 2017) with 50% of the electricity in Denmark being produced by combined heat and power (CHP) supplied by 20% wind power and 15% renewable energy sources (Lund & Mathiesen, 2009). Moreover, Danish companies are consistently ranked among the most sustainable companies in the Global 100 Index. Strand et al. (2015) suggest that Scandinavian firms have adopted a relatively unique approach to environmental and social sustainability generally, and environmental initiatives more specifically, due to the influence of specific institutional and cultural factors. The firms included in this study thus represent an extreme sample (Patton, 1990, 2002) in that this recognition assumes the firms engage in environmental activities.

Green HRM in theory and practice

Within the Green HRM scholarship, it has been proposed that HRM can provide the necessary practices and processes to support the deployment of an environmental strategy and help to raise environmental performance through pro-environmental employee behaviors (Jackson & Seo, 2010). The proactive involvement of HRM in deploying and embedding the environmental strategy in the organization is assumed to be an important driver for achieving high environmental performance (Jabbour et al., 2010). This assumption is rooted in principles of strategic HRM, where systematic alignment between environmental strategy and environmental initiatives is considered crucial to achieve environmental performance (Paillé & Mejía-Morelos, 2014). In practice, this alignment would involve HRM working together with the functions that drive and deploy the environmental strategy (Guerci & Pedrini, 2014).

The systematic inclusion of environmental issues in HR practices is assumed to be key for the performance of teams, organizational culture and learning (Jabbour, 2011), and therefore there has been considerable interest in identifying ways that environmental initiatives can be incorporated in HR practices. In particular, Renwick et al. (2016) conducted an extensive literature review that reveal a potentially rich and multifaceted variety of green HR practices that could facilitate the enactment of the environmental strategy and increase environmental performance. Specifically, along the employee life cycle, Renwick, Redman, and Maguire (2008) propose a green HR process model that shows how HR practices from recruitment to performance appraisal, onboarding, training and development and renumeration could be aligned to environmental objectives. Aligning the recruitment practices could, for example, mean that job candidates are selected based on environment-related criteria such as environmental knowledge, values, beliefs and motivation to act responsible towards the environment (Renwick, Redman, & Maguire, 2013). This recruitment strategy would carry the advantage of fostering environmental consciousness and behavior to ensure that employees' mindsets and experiences are aligned with the organization's environmental objectives, which should in turn result in increased participation in green initiatives. Further, promotion of pro-environmental values should offer the additional benefit of enhancing organizational attractiveness (Behrend, Baker, & Thompson, 2009) and help to create an attractive employer brand that signals long-term investment and good treatment of their stakeholders (App, Merk, & Büttgen, 2012). Empirical findings support the notion that some organizations do make use of green recruitment practices (Jabbour et al., 2010), and that job seekers

prefer employers with strong social and environmental responsible values (Gully, Phillips, Castellano, Han, & Kim, 2013). Similarly, scholars have emphasized that training and development are critical to the successful deployment of an environmental strategy, and that embedding green values into the organizational culture through environmental training is an important HR practice (Daily & Huang, 2001; Ramus, 2002).

The literature also emphasizes the importance of HR related practices to increase employees' active engagement in environmental initiatives themselves. For instance, employees' interest in participating in the green initiatives can be increased through newsletters, suggestion schemes, problem solving groups (Renwick et al., 2013) environmental champions (Anderson & Bateman, 2000) and green teams (Govindarajulu & Daily, 2004; Jabbour, Almada Santos, Fonseca, & Nagano, 2013). In addition, HR managers could work with senior management to provide employees with increased opportunities to participate in environmental initiatives, which would be expected to positively impact on employees' engagement (Benn, Teo, & Martin, 2015). Compensation and rewards have also been suggested as an effective way of incentivizing employees to engage in environmental initiatives (Jackson & Seo, 2010). Further, some researchers such as Jackson and Seo (2010) argued that embedding environmental targets into performance management and appraisal systems is a prerequisite to ensure and improve environmental performance. Still, to date, the literature suggests that rewards are generally used to enhance senior managers' rather employees' environmental performance (Berrone & Gomez-Mejia, 2009), and a study at a British airline suggests that implementing green performance measures linked to rewards and incentives may present a number of challenges that limit their use (Harvey, Williams, & Probert, 2013).

Combined, the assumption is that these HR practices should support employee green behavior, and encourage employees' acceptance of changes accompanying adoption of an environmental strategy (Ronnenberg, Graham, & Mahmoodi, 2011). Empirical evidence on how these HR practices are actually used to support environmental initiatives, and thus the enacted role of HRM, is however limited (Renwick et al., 2013). Indeed, research in this area is mainly of conceptual nature or quantitatively driven (Haddock-Millar, Sanyal, & Müller-Camen, 2016) and Harris and Tregidga (2011, p. 240) conclude that 'Environmental sustainability has largely failed to materialize as an important issue for consideration and action by either HR researchers or practitioners.'. The authors base this finding on an empirical study of senior HR managers in New Zealand who reported that they do not perceive themselves in a proactive

role in driving environmental objectives even though they consider these issues as highly relevant to put forward. Instead, they claim that they perceive their role as being primarily related to the communication of relevant values that would induce behavior change.

Moreover, a recent study of approximately 200 organizations in Great Britain by Zibarras and Coan (2015) suggests that the overall engagement of HR managers is minimal, and that HR practices were not effectively used to promote the deployment of the environmental strategy. Here the most used HR practice related to involving line managers in communicating green values or to act as a green champion, which demonstrates a rather indirect role of HR managers. Furthermore, Jabbour (2011) reports that even if organizations are publicly committed to environmental objectives, HRM does not appear to be involved in supporting the environmental objectives as environmental issues are not formally incorporated in the HR practices. According to the authors, this is a concern as environmental performance, organizational culture and learning can all be negatively affected when environmental objectives are not formally embedded in the HR processes.

A conclusion from this review of the literature is that while there appears to be a strong potential role for HRM to support environmental initiatives through strategic alignment of HR practices with the organization's pro-environmental values and goals, this potential has yet to be realized. Therefore, in this study, we turn to firms recognized for their environmental performance to obtain insights concerning alignment between the espoused and enacted role of HRM in supporting environmental initiatives. Previous research suggests the tendency to demonstrate responsible corporate behavior varies across countries (Maignan & Ralston, 2002), and thus an assumption underpinning the study presented in this paper is that the strong focus on environmental performance in Denmark would provide opportunities for exploring best practices associated with the role of HRM in supporting environmental initiatives. This assumption draws support from institutional theory as well as the literature on the influence of dimensions of national culture on organizational behavior. More specifically, institutional theorists argue that the institutional environment can significantly influence, shape or regulate organizational behavior in firms (Campbell, 2007) and that various stakeholders exert high pressure on firms to conform to certain guidelines (Delmas & Toffel, 2004). In Denmark, the government has played an important and active role promoting pro-environmental initiatives (Vallentin, 2015) and is viewed as having a positive effect on firms' environmental performance as 'Denmark has emerged as a first mover among the Scandinavian countries'(Vallentin, 2015, p. 33). As Campbell (2007) proposes, firms are more likely to act responsibly

if state regulations are strong and this responsibility has been developed based on negotiations and consensus building. Thus, we would expect Danish firms to be on the forefront of utilizing their resources, including the role of HRM, to fulfil the political and societal demands for exemplary environmental performance. Moreover, Rabl, Jayasinghe, Gerhart, and Kühlmann (2014) maintain that national culture creates pressure on firms to comply with institutional norms and impacts the way of management, which should in turn impact on how HR practices are designed and managed.

In the following sections of the paper, we introduce the methodology used in our qualitative study aimed at exploring the role of HRM in supporting environmental initiatives. In doing so, we respond to the call for more insight on how HRM can contribute to help organizations to meet their environmental objectives. As a consequence of earlier conflicting research findings regarding the role of HRM, this study explores the viewpoints of both HR managers and environmental managers on HR's espoused and enacted role in supporting the environmental strategy (Harris & Tregidga, 2011; Zibarras & Coan, 2015). The decision to include both the HR and environmental managers was based on Guerci and Pedrini (2014), who note that different stakeholders' views of the potential and actual contributions of HRM vary considerably. Given that our focus is on HRM and environmental initiatives, these two groups of stakeholders were deemed relevant and appropriate.

Method

Given the literature on the potential role of HRM in supporting performance and the dearth of empirical evidence that HRM has embraced this role, we designed a qualitative, exploratory research design. Scholars support the use of qualitative research designs for qualitative, explorative studies as they provide opportunities to create a rich understanding about the focal phenomenon (Edmondson & McManus, 2007; Helfat, 2007). As stated previously, purposeful sampling was used to select extreme cases (Patton, 1990, 2002) to include in the study. More specifically, we first obtained a list of Danish firms recognized for exceptional environmental performance. These firms had all joined the United Nations (UN) Global Compact and thus have declared to take responsibility to incorporate the UN Global Compact's Ten Principles on human rights, labor, environment and anti-corruption into their strategies and operations (Global Compact, 2015). Moreover, all of these firms were or are in the process of obtaining an environmental certification (such as ISO 14001) and document their environmental objectives and performance outcomes.

The sample of organizations was further refined to include only mid-sized and large firms, as small firms are generally characterized as having less structured and formalized systems and processes, as well as clearly-defined HR systems (Kotey & Slade, 2005). The increased formalization in medium to large firms was viewed as a way of increasing the likelihood that structures and processes related to environmental performance, and HRM in particular, would be present within the organizations. Emails were sent out to firms meeting these criteria, and five were selected for inclusion. An overview of the sample and the identification codes used for each of the organizations is provided in Table 5.

Table 5 Overview on firms and informants participating in this study

Firm identifier	Total number of employees (2018)	Number of interviews	Job role of interviewee
Dairy producer (DP)	19.000	3 (1 follow up with HR manager)	HR manager; environmental manager
Wind energy (WE)	33.000	3 (1 follow up with HR manager)	HR manager; environmental manager
Pump manufacturer (PM)	19.000	4 (follow-ups with both managers)	HR manager; environmental manager
Energy and Water Metering (EWM)	1.100	4 (1 follow up with Vice President HR)	HR manager; 2 quality management representatives
Game Producer (GP)	19.000	2 (1 follow up)	Environmental manager

Data collection

In total, 16 semi-structured interviews were conducted with senior managers with an HR role and with a role in environmental management in each of the five organizations, if possible. In one organization, GP, we had only granted access to the environmental manager, primarily because at the time none of the HR professionals were formally involved in environmental initiatives. We selected our interview partners upon the following criteria: management level and most knowledgeable in terms of HR activities that relate to environmental initiatives. The interview guide was developed on the basis of the literature review, and the model from Renwick et al. (2008) in particular, where the potential role for integration of HRM along the employee life cycle is associated with the HR practices of staffing (i.e. recruitment and selection), training and development, compensation and rewards, and performance management. The questions were aimed to gain a detailed and in-depth understanding of the enacted practices and activities

that explicitly link to environmental initiatives. However, in order to ensure that we would capture the enacted (and not intended) HR practices, we asked the informants what the firms' green HR practices are (similar to Khilji & Wang, 2006), for example *'Which specific activities are implemented to support environmental initiatives?'*. To explore the espoused role of HRM, we included questions on how the role of HRM in supporting environmental initiatives is perceived by our informants, such as : *'How do you view the role of HRM in supporting environmental initiatives in your organization?'*. The interviews lasted 30-60 minutes and were recorded and transcribed. In addition, archival data were reviewed, including information from the organizations' website, press releases, information brochures, annual reports, and sustainability or corporate social responsibility (CSR) reports. These data were used to validate the enacted HR practices to support environmental initiatives in the five organizations.

Data analysis

Data were analyzed through an iterative process that involved first conducting a thematic analysis (Braun & Clarke, 2006) to sort the transcribed interview data into two broad themes related to the role of HRM in supporting environmental initiatives, namely: 1) the enacted HR practices; and 2) the espoused role of HRM role. Thematic analysis is a systematic and increasingly recognized method of analyzing qualitative data, that allows a combination of a deductive and inductive approach and to report semantic as well as latent meanings (Braun & Clarke, 2006; Braun, Clarke, & Terry, 2014) and is suitable for analyzing smaller data sets (Clarke & Braun, 2017). In addition, a third theme emerged from the data concerning perceived organizational values and culture associated with the geographical positioning of the firms that appeared to influence HRM's role in supporting environmental initiatives. The themes are used to structure the presentation of the findings below.

Findings

Enacted HR practices

Overall, the data from the interviews, CSR reports and internal HR-related communication material revealed that each of the five organizations use various HR practices to support pro-environmental activities and that these practices vary in scope and intensity, from using environmental values in recruitment, and onboarding to establishing and monitoring environmental performance measures, training and development, employee relations and rewards and incentives. However, the data also suggest

that these activities are not the sole responsibility of the HR manager, and in many cases, HRM appears to play a supportive rather than central role. The appendix provides an overview of the HR practices targeting environmental initiatives in the participating firms, as well where primary responsibility rests for developing and enacting those practices.

The espoused role of HR in supporting environmental initiatives

In addition to describing how environmental initiatives are integrated with the HR practices in their organizations, the HR managers and environmental managers provided some insights into how they perceive the role of HRM in supporting their organizations' environmental goals. At *DP* the HR manager perceived HRM's role as a facilitating one: *'I think we are part of it [environmental activities], and I think that we support and bring specialist knowledge to these projects.'.* Furthermore, the HR manager described HRM's contribution to persistently communicate relevant messages to managers and employees: *'Spreading information, trying to get the message in wherever possible'* and thereby *'creating the awareness throughout the organization'.* However, the HR manager stated that he did not perceive a strong need for HR to actively promote awareness and understanding for environmental issues nor to take sole responsibility for ensuring employees pro-environmental mindset and behavior. Specifically, the HR manager explained: *'I think that in order for us to have success, as the organization is today, … it is important that we push some of the responsibilities to the leaders. Otherwise we won't succeed.'.* Still, the HR manager acknowledged their share of responsibility for communicating relevant messages to managers and employees likewise. As this message transfer provides challenges for HR, mainly related to their large distance to affected employees, the HR manager admitted that line managers are expected to take responsibility for sharing the messages with the employees. Also, the HR manager claimed that HR might not be perceived as an equal sparring partner: *'A lot of leaders also exactly know what they want. And they don't want HR to come and tell them.'.* Still, the HR manager stressed with various examples HR colleagues' involvement and cross functional cooperation in relation to sustainability issues. Further, he added that HR would increasingly focus on other aspects of sustainability that are: *'more concerned with human rights or ethical behavior',* which*,* the he explained, are affected by the firm's strategic focus on market expansion into developing countries.

At *WE* a specific HR business partner role was established to enable HR to better support the quality, safety and environmental manager, as the firm's interest and demand for environmental matters

was growing: '*it's slowly becoming clear that we need to start thinking about it [sustainability] more internally as well'*, which he believed would require an increasing awareness by top management. The HR business partner described his role as facilitator for the Quality, Safety and Environment department as one of change promoter: '*I think we should be the one who can facilitate the dialogue or facilitate the change.*'. But he also emphasized that HR should not be the driver of environmental initiatives: '*Regarding sustainability or the environmental initiatives, it would be driven very much from that function [the environmental management department] and then with HR as a sparring partner.*'. He did not elaborate on how this sparring relationship would be enacted in detail, but described the format they would ideally work together: '*There is a collaboration between HR and the sustainability or environmental people, so you co-create. They [the Quality, Safety and Environment department] have the knowledge and HR knows how to train people'.*' In the past there had been a strong collaboration, for instance when they jointly created the '*WE* world'; however, the HR manager admitted, the crisis has weakened the collaboration efforts and HR's role. Also, the environmental manager explained that whereas safety has been prioritized because risk behavior is a key issue in the wind industry, the '*environment is taken for granted'*. Nevertheless, the environmental manager reflected that a stronger partnership between HR and the Quality, Safety and Environment department would contribute to strengthen employees' environmental awareness and interest to engage in environmental activities, given the complementary competencies: '*... if you look in to what HR is good at—they are good at leadership and behavior and people and development...'*. In his view, '*HR should have an active role, definitely'* in this process and take on more responsibility to ensure that employees act towards the achievement of the firm's environmental goals.

At *PM*, the HR manager described opportunities to promote and support environmental initiatives by integrating relevant objectives in the HR processes: '*The way we can promote and support it [environmental initiatives] is to build them into the HR processes. So it would be an integrated part when we recruit, when we do performance evaluation, when we give recommendations for how to set up goals and incentive systems.*'. Still, the HR manager did not perceive the active involvement in environmental initiatives as part of HR's role, but rather the responsibility of the sustainability department, where environmental management is part of: '*I don't think it should be HR....we have another department that is driving that. I don't see it as necessarily a part of my role. For me this is very much product, branding and quality related...what machines we have, and what kind of processes we have in the factories that*

can minimize pollution.'. Unlike the HR manager, the environmental manager perceived benefits to a more pronounced role of HR in environmental matters and acknowledged that it has been counter-productive to discount HR in the past and suggested that partnering with HRM would be beneficial to ensure employees' acceptance and a solid understanding and encourage their engagement in environmental initiatives: *'...we need to collaborate much more with HR, get their knowledge and expertise in terms of how do we actually develop something meaningful. Of course that would improve the quality, and secondly it would enhance the deployment.'.* The HR Manager at PM agreed that collaboration is important but reasoned that such efforts have been difficult partly because of the departmental structure at PM: *'I think we have been very much in silos and we are still to some extent. But that is some of the focus areas in the new strategy to actually start collaborating across the boundaries. I think that is really important that we do that.'.* Despite being less prominent the HR manager pointed out that collaboration with the sustainability department exists *'specifically when it comes to Health and Safety or people on special terms'.* However, the HR Manager also noted that the HR efforts cannot be effective without ensuring the management's cooperation: *'...we cannot do it alone, because we cannot change behaviors. The line managers have to be involved for that.'.* Again, the alignment with the line managers are perceived as critical to ensure employees' buy-in.

At *EWM* the role of HRM in supporting environmental initiatives did not appear to be clearly defined, nor was their involvement very extensive. Still, the HR manager perceived its role in supporting environmental matters as vital: *'...it [the deployment of the environmental strategy] is very high on my agenda and I have a position where I can put it on the agenda of the management team.'.* Further he stated that it is important that HR is involved as they can create awareness through their position in the firm. To this point, the HR manager admitted his organization has not yet seen the need to develop targeted measures that directly impact environmental behavior towards environmental initiatives, such as environmental key performance indicators (KPIs) and an incentive system. This is confirmed by the quality management representatives who remarked: *'There is no special acknowledgement of the involvement of the employees. Environmental awareness and activities are part of all employees' jobs.'.* Consequently, both the HR manager and quality management representatives stressed that at EWM employees have to be trusted to act in line with the environmental objectives. However, the HR manager admitted that while the firm is rapidly growing, customer demands regarding environmental issues and quality are rising and may soon impel them to ensure that employees act accordingly. Similar to PM, the

HR manager at *EWM* stated that HR should carry some responsibility in raising awareness for environmental issues. Through the HR manager's position in the firm a direct and continuous communication with the top management is ensured. However, the HR manager also admitted that HR can only effectively foster employees' environmental mindset and behavior if both, senior management and HRM pull together as HR's resources and power are limited, thus the manager summarized: *'...we cannot do it alone, because we cannot change behavior. Management has to be involved as well.'*. Also at EWM, the HR manager pointed out that HR can support environmental initiatives on the strategic level and communicate to the managers to follow up but in order to ensure that environmental values are embedded the HR manager emphasized: *'It's the middle management who has to live it and make sure that it is executed on that level because it is very difficult to sit here in HR and make sure that they do this.'*

At *GP* HRM had not assumed a role in promoting the firm's initiatives thus far and perhaps for that reason we were not provided with admission to interview a HR manager in that matter. Still, the environmental manager appeared optimistic that HRM, especially at the local sites, could be a valuable partner in creating this employee commitment. The environmental manager explained that overall the firm has a strong ambition to make a positive impact on the environment, and that they generally do not have problems convincing employees to engage in environmental initiatives. On the other hand, he explained that he felt that HRM could be more actively involved in supporting the firm's environmental strategy: *'We see their [HR managers'] role as part of the team...We need HR to help champion when it comes to employee engagement...they are wiser in communication and sending messages out to the employees.'*. Furthermore, the environmental manager described that senior management is sharing responsibility for ensuring that employees act according to the environmental goals, expressed in one KPI which holds senior managers accountable for their performance and reflects in their bonus pay, the environmental manager explained. Moreover, he points out that GP puts strong efforts into collaboration across different departments and hierarchy levels in the implementation of environmental initiatives. The environmental manager reflected on the advantages of their way of collaboration which *'...is called the co-creation model, of whatever the initiative is we are working on we have a much higher likelihood of getting that implemented successfully in the organization. Because [employees] are part of this and it is not forced down on them.'*. Recently, the environmental manager stated, an initiative was started to increase employee engagement in environmental initiatives at the key manufacturing sites and for that

matter both, the HRM and environmental management jointly co-create. Here, the environmental manager continued, HRM's support is needed especially on creating green teams and an action plan about how to effectively engage employees at the sites and emphasized that '*It's much more about behavioral change and communication*' and that is where HRM is a valuable partner to successfully motivate employees to engage for the environment.

Values and culture influencing the role of HRM in supporting environmental initiatives
As stated above, the data revealed that organizational values and culture were perceived as having an influence on the role of HRM in supporting environmental initiatives, and specifically on limiting more active engagement of HRM in these initiatives. Several of the firms mentioned that organizational values and even perhaps the Danish culture as a whole seemed to encourage organizational members to act in line with environmental objectives, which the HR managers and the environmental managers felt reduced the need for HRM to play an active role in supporting environmental initiatives. For instance, the HR manager at *DP* explained that the environment has always been an integral part of the firm's strategy as: '*we have a very long tradition of not using too many resources*'. Further, the HR manager stressed how environmental responsibility is demonstrated by the top management and thus indirectly influences employees' awareness: '*We have our CEO. He talks about CSR a lot and he makes sure that it is part of our overall strategy. The fact that our CEO speaks very passionately about it has a big effect. It means something.*'. He maintained that tradition and the CEO's communication meant that environmental responsibility was an ingrained part of all activities in the firm, if rather implicit: '*We are doing it all the time but not calling it an HR pro-environmental initiative.*'. Moreover, the HR manager continued that formal HR initiatives might be perceived as offensive to some. '*I don't think that anyone would ever go to tell an employee to do this or that to reduce waste or save resources.*'. Instead, it was important for the organization to demonstrate trust in employees' own values that would prompt them to take ownership for engaging in environmental activities.

Similarly, the environmental manager at *WE* explained that '*[WE] is a good, nice company*' with '*not many polluting activities*' that offers environmentally friendly products. Their green image has made them an attractive employer as the environmental manager further commented: '*We know that a lot of people joined us because they want to be part of saving the planet and share our values.*'. However, the environmental manager acknowledged this also carries the risk that the firm relies heavily on their

perceived green image: *'We just take it for granted. And I think this has been a problem in the past…that we have just assumed we are the good guys because we have been in wind industry.'*. This statement was supported by the HR manager perceptions: *'it* [environmental awareness] *is out there* [in the firm]*, but...we don't use it much within our daily work.'*. The HR manager admitted that ensuring an environmental mindset throughout the firm would require a more proactive and structured approach to embed environmental values in the daily operations.

At *PM*, the HR manager felt that the values and cultures had also been shaped by the founder's strong community engagement, and that they in turn implicitly supported environmentally conscious behavior: *'Our values are really, really strong. In some companies the values are five words on the website. But here it is really founded in the history of the company. …the founder was very much focused on how to help the surrounding environment.'* The firm puts visible efforts into making environmental values explicit through, for example, their code of conduct and emphasizing their heritage in brochures, hallway posters and through storytelling, and thus that environment is part of the employees' mindset: *'It is more something that we all have in the back of our minds.'* The environmental manager acknowledged that environment is *'part of our foundation and our values',* however admitted that that environmental values need to be developed and ensured and hence need to be translated into goals as part of the overall business strategy, pointing out: *'we need to make sure that sustainability is really well anchored in that strategy'* because as he continues, making the values more explicit puts every stakeholder into responsibility to act accordingly and that makes a difference to him personally but also in his job role which is to ensure the firm's environmental goal achievement.

AT *EWM* the HR manager claimed that their firm as well as Denmark more generally had always placed value on the efficient use of natural resources. More specifically, he stated that the firm's values regarding environmental responsibility are part of their value proposition, and therein helps employees identify with their products even when that message is not communicated directly; *'This is in the DNA of what we do'* the manager explained. He continued: *'It is incorporated in everything we do because our aim is to help the world take better care of energy and water resources. These are the solutions that we provide to our customers. But I mean it has a lot of focus for us in all the things we develop.'*. The HR manager puts trust into the implicit power of the firm's values, that to him appear to be embedded in the organizational culture.

In the same vein, the Senior Manager of Environmental Sustainability at *GP* acknowledged the firm's culture is based on trust in employees to take responsibility for the environment, which he suggested might also be rooted in their national culture: *"we are a really humble company, and that comes from our Danish roots. We don't brag. Danes have a different mindset. The managers say 'We just do it, we don't need to engage the line.' I think trust is key here…we have a high degree of trust, also in our employees."*. Providing an alternative view, the manager reflected that such a culture bears also risks for the firm's market success: *'there is also a negative side…trust that they are doing the right thing, trust that they know how to do it. But they don't always know. Maybe we need to start telling stories more. We need to talk about it if we want to retain our reputation for being in the top. Danes are not good at sharing the information. You have to show what you are doing. We need to find a way that makes sense for a Danish company.'*. Here the environmental manager pointed at the cultural shift the firm is facing which would entail that necessary steps are taken to ensure that all employees live up the firm's environmental values. Overall, the environmental manager resumed, the main goal is: *'We want to enable the employees so they feel empowered to do it.'*. In order to achieve that, he continued, it needs more explicit and focused means to ensure that environmental values are embedded in employees' mindset and behavior.

Analysis & Discussion

In the remainder of this paper we analyze and discuss our main findings, which show a rather implicit yet important role of HRM in supporting environmental initiatives. We suggest that in many ways, national culture appeared to function as an invisible hand that ensured that employees acted towards environmental goal achievement. Moreover, we propose that HRM's role in contributing to environmental performance can grow and gain from a collaboration approach with other management functions and in particular environmental management.

Culture's invisible hand

Findings from this study suggest that the use of HR practices to support environmental initiatives is not widespread nor does it involve the range of HR practices described in the literature (Renwick et al., 2016; Renwick et al., 2013). More specifically, while the firms did relate that environmental sustainability is important to them strategically, and did provide examples of how messages about environmental

sustainability goals were incorporated into existing HR practices, HR practices did not seem to be explicitly designed to support environmental initiatives in the organizations. Further, there were few indications that the use of HR practices to support environmental initiatives was systematic in the way proposed by scholars such as Dubois (2012); Jackson and Seo (2010). Instead, the findings from this study suggest that HRM as a function has a role in supporting environmental initiatives, wherein each of the firms in the sample employed environmental managers or similar to drive the environmental initiatives in their respective organizations. This finding is also consistent with the literature that argues that HRM has not yet embraced an active role in supporting the firm's environmental initiatives (Haddock-Millar et al., 2016; Jabbour, 2011), and more specifically, that the HRM has yet to assume an active role in supporting environmental initiatives due to a lack of understanding of how that role could be enacted, and a reticence to become involved in activities not traditionally considered their domain (Harris & Tregidga, 2011). The findings from this study do support these conclusions, at least to some degree. In particular, while both the HR and environmental managers could imagine how HR could be more actively involved in general terms, to a large extent they were not able to make explicit how the message could be conveyed through HR practices, even when the firms employed a HR business manager with responsibility for coordinating environmental initiatives across the organization. Further, while none of the managers interviewed directly stated that they felt that the HR managers did not have the competencies to drive such initiatives themselves, none offered the suggestion that this might be a role the HR managers could assume without support from others in the organizations.

This study has also shown, and what has not been reported in the literature, is that the role of HRM in supporting environmental initiatives may have been substituted by the organizations' heritage, at least to some degree. Particularly, our findings indicate a strong influence from the founder or heritage of the organization on the espoused role towards environmental initiatives and the enacted HR practices that explicitly support environmental initiatives. Past research has shown that founders often have a profound and persisting influence on an organization's values, attitudes, and behaviors (Nelson, 2003; Pieper, Smith, Kudlats, & Astrachan, 2015) and on its culture (Schein, 1983). This finding is also supported by Hofstede's studies linking national and organizational value systems that show the influence of founders' national values on organizational values (Hofstede, 1985) as well as on organizational habits, traditions and practices (Hofstede, Neuijen, Ohayv, & Sanders, 1990).

Further, the analysis suggests that organizational culture served as a substitute for HRM in supporting environmental initiatives, much like an invisible hand that ensured that employees acted towards environmental goal achievement. In the fundamental research on national culture, Hofstede (1980) and Hofstede and Minkov (2010) argued that national culture, which Hofstede defines as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 1980, p. 25), has a marked influence on organizational practice. Looking closer at Hofstede's cultural dimensions, Denmark has been found to demonstrate low power distance. For Danish organizations, that can mean that hierarchies are flat, structures are rather informal and employees do not wait for leaders to make decisions but instead take initiative if opportunities arise (Hofstede, 1983, 1984). These characteristics may help explain why messages about environmental initiatives and the need to work towards environmental sustainability are subtle or lacking, as employees could resent being told how they should enact value-based behaviors associated with environmental initiatives. Moreover, the author posited that Denmark presents a feminine value system that is associated with maintaining good interpersonal relations, valuing quality and a concern for preserving the environment. The low power distance and the feminine values might explain why the HR managers in our study did not perceive themselves as having the role of being directive or giving direct orders, and did not find it necessary to explicitly encourage employees to participate in environmental initiatives. Further studies that have linked national culture with organizations' capacity to engage in sustainability initiatives support the latter assumption, and in particular found masculinity to be negatively associated with the capacity for such initiatives (Husted, 2005).

Accordingly, we assume that Denmark, a country with a feminine culture, should positively relate to the organizations' propensity to support environmental initiatives. Other studies that support our assumption focus on the GLOBE's national culture dimensions (House, Hanges, Javidan, Dorfman, & Gupta, 2004) and categorize them into relation to an individual's propensity to support environmental sustainability initiatives. For example, Cullen, Parboteeah, and Hoegl (2004) found that high performance orientation and assertiveness, which are linked to masculinity, are negatively related to environmental sustainability. Another study by Parboteeah, Addae, and Cullen (2012) showed that Denmark has a high level of future orientation, described as being concerned about the future, and a high level of humane orientation, which is related to femininity, meaning that individuals care for how their actions impacts others. According to the authors, both future and humane orientations are positively

related with the individual propensity to safeguard the environment. Thus, we suggest that in an organization that is immersed in the Danish culture, and as such characterized by feminine values and high levels of future and human-orientations, employees would be inclined to engage in environmental initiatives. Therefore, explicit HR policies or practices that call for participation might not be needed to the same degree as in performance-oriented cultures. Indeed, these types of HR policies or practices might be even seen as counter-productive. A study by Matten and Moon (2008) addressed this notion, where they pointed out the relevance of distinguishing between explicit and implicit forms of sustainability, and argued that the latter type is entrenched in country level values and norms rather than explicit policies and business practices and has so far been dominant in European organizations.

It is however important to note that while HRM did not appear to be actively involved in supporting environmental initiatives, at least not to the extent proposed by scholars such as Renwick et al. (2016) and Jackson et al. (2011), this does not mean that the firm's environmental performance suffered in any way because it has been shown that in companies immersed in the Danish culture, HRM is rather being practiced in an informal way (Jørgensen & Ulhøi, 2010). Although this could call into question whether HRM need be involved in supporting environmental initiatives, we would propose that these firms have adopted, or are well on their way to adopting, quite a different approach to proving this support, namely through building an active collaboration with the environmental management function to take joint action for the environment; an approach that has been evidenced in two of our case companies. We remark on this approach in the following section of the paper.

Enhancing HRM value through collaboration
Our analysis also emphasized the importance of joint ownership and collaboration between HRM and environmental management, regardless of whether this collaboration was actually taking place in practice or not. Through collaborative activities, which is an evolving process whereby two or more social entities actively, equally and reciprocally engage in joint activities aimed at achieving at least one shared goal, organizations seek to enhance their ability to work together to improve their competitive advantage (Bedwell et al., 2012). Furthermore, our analysis revealed a specific form of collaboration that focuses on creating shared value that had been started in two of our case companies between HRM and environmental management. Co-creation is defined as a process of value creation and innovation with far-reaching strategic implications because it focuses on the necessity of mutual engagement and

collaboration with a variety of stakeholders (Lee, Olson, & Trimi, 2012; Ramaswamy & Gouillart, 2010). The co-creation approach has been proposed by some researchers as an opportunity for HRM to contribute to CSR initiatives, here understood as a social obligation to impact society beyond profit maximization, and a closer integration of HR and CSR that could potentially produce synergistic outcomes (Jamali, El Dirani, & Harwood, 2015). The authors suggest that the capabilities and expertise of HRM could be leveraged to support the design and implementation of CSR initiatives. Specifically, they argue that the HRM capabilities can provide a managerial framework that supports the translation of CSR strategies into actions and outcomes. Researchers in the area of Green HRM might not have explicitly called for a co-creation approach as Jamali et al. (2015) have suggested for the HR-CSR partnership, however, the systematic integration of environmental objectives in HR responsibilities has been repeatedly recognized to be key for achieving superior environmental performance (Jackson et al., 2011; Jackson & Seo, 2010) . Drawing on Jamali et al. (2015) can HRM in a co-creation setting provide its competencies and expertise for creating and implementing environmental initiatives, for example the competence to motivate and engage employees as well as the knowledge on inducing behavioral change to advance the transformation of environmental strategic objectives into environmental initiatives.

Limitations and Implications

While the paper provides rich narratives into how the role of HRM is espoused and enacted to support environmental initiatives, there are some limitations in this study that provide consideration for future research. One limitation concerns the small sample size, bearing the risk to overestimate the sample's information power (Malterud, Siersma, & Guassora, 2016) and the restriction to HR and environmental managers while excluding the view from other potentially relevant stakeholders that could provide complementary knowledge about the espoused role and enacted practices. Second, the sample was restricted to five large environmentally committed firms headquartered and operating in Denmark showing distinct institutional and cultural characteristics that we proposed to influence the implicit role of HRM in environmental initiatives. This influence might be different outside the Scandinavian context and thus future research could benefit from a comparative study with a differentiated and larger sample, for example with firms having different country level values and norms. Third, single HR and environmental managers were asked about their perceptions of the enacted and espoused role of HRM. While these perceptions provide important insight into inconsistencies between what is espoused and

what is realized, they are not necessarily representative, because the individual perceptions may vary and cannot depict if agreement among the HR and environmental managers is formed about the espoused role of HRM and thus cannot provide a full picture of existing inconsistencies of HRM's role in contributing to environmental performance goals. Lastly, when selecting our informants, we encountered challenges in identifying the individuals in the firms that were knowledgeable about HR activities targeting environmental initiatives, that we interpret as a lack of role clarity, as such roles did either not seem to exist or were overlapping (similiar finding by Guerci & Carollo, 2016). Thus, we suggest that future research needs to address more rigorously the issue of role clarity for example by looking much further beyond the conventional HR and environmental or sustainability management functions when identifying relevant informants and by tracing the HR processes in an organization over a longer time period, possibly through an ethnographic approach that allow a better recognition of implicit, so far unspoken HR activities and tacit HR knowledge, that nonetheless may contribute to environmental performance goals yet have to be made explicit.

On the other hand, our findings have important theoretical implications. They indicate that the focus on searching for an explicit role of HRM and formalized green HR practices to contribute to environmental performance goals as assumed within the functionally oriented HRM perspective may be limiting. Instead we posit that in order to bring green HRM research forward, there is a need to look beyond what has been explicated and formalized and investigate the supporting role HRM can play in promoting environmental initiatives, and how characteristics of the organizational context such as cultural and founder values can be aligned with HRM. By viewing HRM as a "value mediator", similar to how Bowen and Ostroff (2004) describe HRM as a signaling function, HRM can communicate cultural and founder values to stakeholders. Thus, communication could perhaps be considered as strategic behavior, even if it occurs in implicit ways. Further, based on our findings and on research that links HRM with CSR (e.g. Jamali et al., 2015), we suggest that developing interdisciplinary and context-based models are a way forward for defining HRM's role in contributing to environmental performance goals.

Second, and in line with Jackson and Seo (2010), we maintain that HRM needs to rethink their role in how they want to contribute to pressing organizational challenges such as enhancing environmental performance. We suggest that a more realistic role for HRM, rather than taking the lead or owing the process in creating specific green HR practices, would involve aiming to collaborate actively with the department with ownership for sustainability issues. A collaborative approach, where HRM crosses the

functional borders and aims for co-creating long-term interventions, would enable HRM to manage the complexity that arises when addressing environmental performance goals more effectively. In doing so, HRM could benefit and develop their understanding on cause and effect of pro-environmental activities, for example how such activities relate to economic performance, customer and employee behavior but also contribute their expertise in inducing, communicating and fostering behavioral change to create shared and sustainable value for their organization. We expect that such collaborative efforts can help to make HRM's contribution for environmental performance goals more transparent and enhance HRM's legitimacy to be a valuable partner in supporting environmental initiatives.

Conclusion

The objective of the study presented in this paper was to gain a better understanding of the espoused and enacted role of HRM in supporting environmental initiatives. We approached this objective by investigating the perceptions of HR and environmental managers in five firms headquartered in Denmark with exemplary reputations for their environmental performance. This study identified several HR practices to support environmental initiatives in use but overall, different from what is suggested in the green HRM literature, these practices appeared to be neither formalized nor explicitly designed for targeting green goals. However, it was found that HRM has a role in contributing to environmental performance goals, yet presently a rather implicit and supportive one. The HR managers' perceptions indicated that their role is largely substituted by founders' values, heritage and/or values inherent in the Danish culture. Yet, according to the environmental managers' perceptions HRM should have a more active and explicit role in contributing to environmental performance goals. In two firms a first step in this direction was indicated through collaboration efforts between HRM and environmental management being underway. While we suggest that strong cultural and organizational values should not be neglected, and HRM certainly plays an important, even if implicit role in ensuring that such values are engrained in employees attitudes and behavior towards environmental performance, firms should not solely rely on the cultural influence but strategically advance HRM's role by crossing the functional silo and encourage cross-functional collaboration to support the translation of environmental performance goals into environmental initiatives.

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Appendix: The enacted HR practices to support environmental initiatives

Firm	HR practices	Responsibility	Sample Quotes
Dairy Producer (DP)	CSR-Onboarding	Shared between CSR and HR	*"Regarding the onboarding – we have our CSR e-learning, which all new employees are supposed to complete within their first 3 months, that was developed by the CSR responsible and myself. [...] I also ensure that our employees and our blue collar population is covered."* (Global HR project manager)
	Code of conduct	Shared between CSR and HR	*"This spring we* [HR manager and the CSR manager] *have been updating the code of conduct…and it has been a huge job…so we had to split the jobs between us. … I have been responsible for the chapter called "work place and human rights" where I also worked together with the Workers Council."* (Global HR project manager)
	Employee satisfaction survey	HR	*"The questions that we ask is: Do you believe and know that [DP] is making products that are natural and healthy and do you believe that we are responsible as a company and we collaborate in the best possible way?".* (Global HR project manager)
Wind energy provider (WE)	Employer branding	HR	*"There are many places in the world where water is a scarce resource which means that we also use this in our branding that wind doesn't use any water. It is out there but we don't use it much within our daily work as such."* (Senior HR business partner)
	Onboarding training *(discontinued)*	HR	*"A couple years back we had something like the [WE] world which was a whole introduction program with small cartoons where you actually went through [...] the safety part and the environmental part. Due to our crisis this was shut down."* (Senior HR business partner)
	Training and development	Quality, Safety and Environment	*"There were a lot of safety awareness trainings, for instance when people start at the factory or on the service site. So they have to go through a program before they are allowed within a factory or on a construction service site. Right now chemicals are quite high on the agenda because in our blades production we use a lot a lot of different kinds of chemicals. That would be* [the subject matter expert for environment] *who would prepare the material and then we can come with input."* (Senior HR business partner)
	Performance management	HR	*"On the KPI's we both have safety targets and environmental targets. The environment is the emissions and the part of electricity we use from renewables. We only work with waste water."* (Senior HR business partner)
Pump manufacturer (PM)	Recruitment	HR	*"It is part of our recruitment processes… It is a parameter when we recruit people whether we think they fit into the values."* (Department Head HR)

Firm	HR practices	Responsibility	Sample Quotes
	Knowledge Management	Global Sustainability	*"A couple of years ago we launched something that we called "the climate journey". And the idea was that we actually wanted people to understand why is that we are engaged with the subject."* (Environmental project manager)
	Performance management and appraisal	HR	*"In order to support green behavior we have across all our facilities employees either accountable or responsible for realizing environmental results. And these employees have incentives related to environmental goals in their annual performance contract."* (Environmental project manager)
	Recognition-based rewards	Global Sustainability	*"We work with what we call the "future now" award which is basically a best practice award where every year all employees* [are encouraged] *to submit and document environmental initiatives that they have implemented in the past year and then a jury of three top executives evaluates all these different best practice examples."* (Environmental project manager)
	Employee satisfaction survey	HR	*"We do have a question in our engagement survey where we ask [...]: "[PM] is making a genuine effort to be socially and environmentally responsible".* (Department Head HR)
Energy and Water Metering Provider (EWM)	Recruitment *(discontinued)*	HR	*"2 years ago "We care for the environment" was a slogan in our job advertisements. We did a survey under new employees to ask about if this had mattered to them and the results showed that it did not matter to most of our new employees. Maybe because they are mostly engineers but that is why we took it out again."* (Vice President HR)
	CSR-Onboarding	Shared between Quality department and HR	*"We have an onboarding program. We have the quality department who takes care of... the hard facts about all the environmental matters are mandatory [...]. And here we also get into this that we create value by the progress we make for our customers. That is where we can see the environmental impact."* (Vice President HR)
	Knowledge management	HR	*"We have a project to reduce food waste in the canteen. Regularly we measure the food waste. The results are then announced in the canteen and the employee magazine to raise awareness. One outcome was to offer two different sizes of plates to reduce the waste."* (Vice President HR)
Game Producer (GP)	Employee engagement for the environment	Shared between EM and HR	*"...this co-creation model we worked with HR at the local sites... to create a model for employee engagement, how do create green teams, how do we set up a structure, how do we engage employees."* (Senior manager environmental sustainability)
	Employee engagement survey	HR	*"Every year we have a pulse survey. It is a pretty in-depth survey...One of those questions is question 50: Do you feel that GP is an environmentally responsible company?"* (Senior manager environmental sustainability)
	Performance management: environmental KPI's for top managers	HR	*"At that senior level they are hold accountable for the reputation of this company where a big part of it is what we are doing in the environment. [...] Their performance is reflected in their bonus pay out for the year."* (Senior manager environmental sustainability)

CHAPTER 5: PAPER 2

The Untapped Opportunity for Green Human Resource Management as a Catalyst for Meaningful Work

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Abstract

This paper seeks to enhance the understanding of the underlying processes through which employees perceive, interpret and attribute meaning to implemented green HR practices that are targeted to support bottom-up environmental initiatives and how these processes potentially impact employees' involvement. To examine these processes, a qualitative study has been conducted in a manufacturing company headquartered in Denmark that is renowned for its environmental sustainability performance. The findings revealed considerable ambiguity toward the implemented green HR practices while pursuing environmental initiatives. However, all green HR practices were perceived as relevant, a finding that indicates a particular role of perceived relevance in the context of environmental initiatives and suggests that green HRM has the potential to promote employees' demand for meaningful work.

Keywords – green HRM, perceived HRM, HRM process, HRM strength, HR attributions, meaningful work

Introduction

Scholars have highlighted the importance of individual environmental initiatives for realizing environmental performance and gaining competitive advantage (Benn *et al.*, 2015, Paillé *et al.*, 2013, Remmen and Lorentzen, 2000). It has been suggested that the adoption of green human resource management (green HRM) can help an organization to achieve better environmental performance by providing opportunities and encouraging employees to commit to and become involved in eco-initiatives (Renwick *et al.*, 2008, Renwick *et al.*, 2013). Indeed, a growing body of research demonstrates that green HRM can contribute successfully to environmental performance (Daily *et al.*, 2012, Fernández *et al.*, 2003, Guerci *et al.*, 2015, Jabbour *et al.*, 2010). Green HRM is defined as a set of HR practices that aims to promote environmental goals through, for example, recruiting employees with green values, developing environmental awareness and understanding about organizational environmental programs, motivating and providing opportunities for employees to take part in eco-initiatives (Jackson and Seo, 2010, Renwick *et al.*, 2013)

Green HRM scholarship has predominately focused on the content of HR practices and how they should be designed to develop employees' skills and motivation in alignment with strategic environmental goals in order to elicit the desired outcomes at the employee level. Such outcomes include encouraging employees to engage in eco-initiatives and improve environmental performance on the firm level (see Renwick *et al.*, 2016 for an overview). Gradually, researchers within that scholarship have called for a more process-oriented approach to green HRM that provides more insight into the means through which green HR practices can effectively elicit desired employee outcomes and support environmental performance goals (Jackson and Seo, 2010). The process approach emphasizes the underlying psychological processes through which employees perceive, interpret and respond to the signals the implemented HR practices send (Bowen and Ostroff, 2004). The "HRM process approach is seen as a promising next step in the HRM field" (Sanders *et al.*, 2014, p. 499), and has been argued to have the potential to explain the impact of HR practices on employee- and organization-level outcomes (Sanders *et al.*, 2014).

Despite the growing body of research that provides support for adopting a process approach for the HRM performance link (Ehrnrooth and Björkman, 2012, Sanders *et al.*, 2008, Sanders and Yang, 2016, Sumelius *et al.*, 2014), far less attention has been paid to the study of the underlying processes through

which employees perceive green HR practices and that affect employees' responses to environmental initiatives (Shen *et al.*, 2016). However, research applying the process approach to HRM that sheds light on the perceptual and attributional processes has demonstrated that these processes are highly relevant, because the signals HR practices send—nearly constantly and often unintentionally—have important consequences for employee- and organization-level outcomes (e.g. Li *et al.*, 2011, Sanders *et al.*, 2008). In the context of green HRM, it has been argued that the adoption of green HR practices itself conveys signals of a purpose-driven organization that is committed to sustainable solutions beyond serving short-term economic interests (Rangarajan and Rahm, 2011). Such signals are argued to have a positive impact on employees' perceptions and subsequent behavior toward contributing to environmental performance (Dumont *et al.*, 2017). However, it has been shown that HR signals might not be perceived or interpreted in a way that is consistent with the managerial intentions and may not elicit employees' desired behavior (Nishii *et al.*, 2008). To enhance the likelihood that employees understand the HR signals as intended and influence their actions toward engaging for environmental preservation, Bowen and Ostroff (2004) proposed that employees should perceive the signals as distinctive, consistent and consensual.

In light of the above, this paper sets out to address the role of employees' perceptions and attributions regarding green HRM and how these have potential consequences for organizations' environmental initiatives. Specifically, by moving away from the dominant content orientation toward a process-oriented focus (Bowen and Ostroff, 2004), this paper seeks to contribute to knowledge of the underlying processes of green HRM implementation. It explores how employees perceive the implemented practices and what meaning employees attach to the perceived practices in relation to bottom-up eco-initiatives.

The paper is structured as follows: First, the relevant background literature is outlined, including the process approach to HRM, and the study of employees' perceptions and attributions is described and linked to perceptions and attributions of green HR practices. Second, an overview of the research approach is provided. Then, findings are presented with selected, relevant quotes that support the data. In the concluding part of the paper, the findings of this study are discussed and implications for HRM research and practitioners are provided.

Theoretical background

In the following, an overview of the main theoretical concepts that underpin the research shown in this paper is provided. First, the process-oriented approach is elaborated upon and the framework with its features and specific metafeatures is detailed, as it lays the structure for this study. Second, the literature on employees' perceptions and attributions of HRM is introduced and the need for individual level studies emphasized. Finally, the literature on the process-oriented approach and HR attributions are applied to the research on green HRM, and in particular linked to employees' perceptions of implemented green HR practices.

The process-oriented view on HRM

When researchers started to question the pervasive focus on the content-oriented approach, realizing that content alone was not sufficient to explain the HRM performance relationship, they shifted their attention toward the process of how HRM as a system affects performance (Sanders *et al.*, 2014). Bowen and Ostroff (2004) were among the forerunners that distinguished between content and process and theorized how the HRM system can be effectively developed and implemented to encourage employees to adopt desired attitudes and behaviors that in turn contribute to the anticipated firm-level outcomes. They proposed the term "HRM process," which emphasizes the underlying psychological processes through which employees perceive, interpret and respond to messages conveyed through HR practices. They argued that HRM can be viewed as a signaling function that constantly sends messages to the employees. These must be understood, have meaning attributed to them and related to employees' work. Therefore, it is important that the HRM system send unambiguous, consistent messages to the employees that allow them to perceive and interpret the messages uniformly. If employees interpret the messages as coherent, they are able to agree on the HR practices' meanings and expected outcomes, leading to a strong situation (equivalent to strong organizational climate; Schneider *et al.*, 2002). In their seminal work, Bowen and Ostroff (2004) focused on identifying key features of the HRM process that have a signaling ability and either facilitate or impede a strong situation. Based on Kelley's covariation principle (Kelley, 1967), Bowen and Ostroff (2004) theorized that employees evaluate the messages conveyed through HR practices across the three key features: distinctiveness, consistency and consensus, and nine metafeatures.

First, the distinctiveness of the HRM system can be characterized by (1) high visibility, which can be achieved by involving a large number of employees; (2) understandability, which can be accomplished

through unambiguous and easily understandable messages; (3) legitimacy of authority, which enhances the willingness of employees to follow the expectations—HRM gains more authority and its practices are perceived as more credible and important if it gains more visible top management support or becomes involved in strategic planning; and (4) relevance, which can be gained if the employee perceives the organizational goals as important to their own goal achievement and/or if the employee perceives the responsible HR professionals as influential to enhance the chance of personal goal achievement. For example, if the HR function communicates the importance of individual eco-initiatives through creating clear target agreements with the majority of employees, and measures and rewards individual performance in relation to how much each employee contributes to the corporate environmental goals, the HR practice is likely to be perceived as distinctive.

Second, consistency of the HRM system can be described by (1) instrumentality, which is achieved by continuous reinforcement of employee behavior and performance and is perceived as stronger if behavior and outcome are linked closely in time; (2) validity, which is reached through consistency between what HR is communicating it will do and what is actually realized; and (3) consistency and stability of HRM messages over time, which is important to avoid double-bind communication. For example, if an organization wants to encourage risk-taking behavior, the performance and reward system needs to reflect that. Among other factors, it should provide a safe environment for taking initiative that allows failures to happen and rewards employees for successful endeavors.

Third, consensus of the HRM system can be reached when employees agree on the intention of the message received. This can be further described by (1) agreement among principal HRM decision makers, which may foster consistency and distinctiveness of HRM messages sent to employees and thus can enhance the prospect that employees will reach consensus more easily; and (2) fairness, which can increase the positive perception of HRM and its capability to influence employees' attitudes and behavior. A high perception of fairness can also increase the acceptability for HR practices. Consensus is perceived if employees see the HR system as fair—for example, if the distribution rules for receiving a bonus are transparent and comprehensible.

In sum, it is argued that if the messages sent through HRM show a high degree of distinctiveness, consistency and consensus, the HRM system is likely to be perceived as strong. A strong HRM system allows employees to share perceptions and meaning about expectations and to respond appropriately, which eventually leads to higher organizational performance (Bowen and Ostroff, 2004). A strong system

does not allow much variety of individual perceptions and will regard the group's interests as superior to individual interests. Thus, it is important to keep a balance between uniformity and variability through communicating, for example flexibility and innovative behavior as desired behaviors (Bowen and Ostroff, 2004). On the other hand, the authors argue that if an HRM system is perceived as weak, ambiguity and uncertainty are likely to increase and lead to sense-making processes that can harm the interests of an organization.

Empirically, Bowen and Ostroff's concept of HRM strength (2004) has generally received support. In particular, it has been shown that distinctiveness is a dominant feature and that perceived high distinctiveness positively influences employee level outcomes. This finding is in line with early attribution theories that state the salience of a stimulus as the driver of individual attribution (Hewett *et al.*, 2018). For example, it was found that distinctiveness and internal consistency positively influence employees' affective commitment at work (Sanders *et al.*, 2008), work satisfaction and vigor and reduce the intention to quit (Li *et al.*, 2011). For consensus, so far no significant impact on employee outcomes has been evidenced (e.g. Sanders *et al.*, 2008). While many studies that have examined the propositions Bowen and Ostroff made were somewhat in line with the theoretical concept of HRM strength, they were lacking valid and reliable scales to measure the features and metafeatures of HRM strength (Sanders *et al.*, 2014). Two groups of scholars, Cunha *et al.* (2012) and Delmotte *et al.* (2012) focused on scale development: Whereas (Cunha *et al.*, 2012) found distinctiveness to be the dominant dimension, Delmotte et al. (2012) found support for 11 features instead of the nine proposed by Bowen and Ostroff (2004).

Employees' attributions of HRM

While the role of employees' perceptions in the process of HR practices' implementation was acknowledged in the influential work of Bowen and Ostroff (2004), another promising approach to understand the process through which HR practices are related to performance shifted focus to employees' attributions for why HR practices exist (Nishii *et al.*, 2008). Central to the study of HR attributions is that employees' responses to certain HR practices are influenced by employees' attributions about the purpose behind the implementation of these HR practices. The authors provided evidence that employees make varying attributions to the same HR practices, and that these attributions impact employee outcomes. Their research confirmed the earlier argumentation by Wright and Nishii

(2007) that variance on the individual level exists. It is shown through employees' perceptions and attitudinal and behavioral responses, and should not be ignored. Variance at the individual level occurs because employees' perceptions of HR practices reflect individual workplace experiences and constitute the subjective interpretation of the implemented HR practices.

Nishii *et al.* (2008) developed a typology of HR attributions to explain that first, internal HR attributions are multi-dimensional; second, internal employees' attributions relate to employees' perceptions of the organizations' employee-oriented philosophy—that is, whether employees perceive the organization to be concerned with employee well-being or exploitation. Third, employees' attributions also relate to perceptions of the organization's strategic goals underlying HR practices; that is, whether employees perceive the HR practices to reflect a quality enhancement strategy or a cost-driven strategy. Both HR attributions, the employee-oriented philosophy and the strategic orientation, are internal attributions that are perceived as controllable. Finally, external attributions relate to perceptions that HR practices were forced to be implemented a certain way because of external constraints. As external attributions are not perceived to be under managers' control, internal attributions are argued to have more explanatory power (Sanders *et al.*, 2014).

A number of studies have confirmed the influence of employees' attributions about the motives of HR practices on attitudes and behavioral responses (e.g. Mignonac and Richebé, 2013, Shantz *et al.*, 2016, Van De Voorde and Beijer, 2015) . For example, Nishii *et al.* (2008) showed that employees' attributions effected employees' attitudes. Specifically, they found that if employees' HR attributions were driven by perceptions of employees' well-being and quality enhancement strategies, they were positively associated with employees' attitudes. If in turn employees' HR attributions were motivated by perceptions of strategies used to exploit employees and reduce costs, they were negatively linked to employees' attitudes. Recently, Shantz *et al.* (2016) found that if employees believed the HR practices were designed to enhance employee job performance (i.e. signal that organizations believe in employees' ability to perform), employees became more involved and felt less emotionally exhausted. If instead, employees interpreted the HR practices' purpose as reducing organizational costs, employees experienced higher burden and more emotional exhaustion.

Recently, scholars have called for empirical studies aimed at linking the two key theories proposed by Bowen and Ostroff (2004) and HR attribution theory (Nishii *et al.*, 2008) more explicitly in order to advance the HR process approach (Sanders *et al.*, 2014, Sanders and Yang, 2016). Both theories differ

inasmuch as they draw from different strands of attribution theories (i.e. Kelley versus Weiner) and regarding the focus on what causes employees perceptions and attributions (i.e. the strength of the HR system or the purpose of the HR practices; (Hewett *et al.*, 2018). A few studies have linked the process approach to HR attribution, yet rather implicitly (Li *et al.*, 2011, Sanders *et al.*, 2008) or by applying the covariation principle to HRM (Kelley, 1967) instead of relying on Bowen and Ostroff's framework (Sanders and Yang, 2016). According to Kelley (1967), Kelley (1973), individuals are able to make confident attributions about the cause-effect relationship, when they perceive the situation as distinctive, consistent and consensual. In their study, Sanders and Yang (2016) demonstrated that if employees perceived HRM as distinctive, consistent and consensual, desired employee outcomes, specifically affective commitment and innovative behavior, were stronger. The authors concluded that in order to realize such strong effects, employees must be able to understand and interpret HRM's messages as intended by the management. Otherwise, if employees cannot understand management's intentions and attribute HRM's failed efforts to other sources such as external circumstances, employee attitudes and behavior can be negatively affected. Thus, according to Sanders and Yang (2016), the way HR practices are communicated to employees will impact employees' HR attribution and the effectiveness of HR practices to elicit intended employee outcomes. Relatedly, it has been acknowledged that examining such underlying processes and their impact on employee- and organization-level outcomes provide useful knowledge for the advancement of green HRM systems (Jackson and Seo, 2010).

Employees' perceptions of implemented green HRM

Despite the acknowledgement of the critical role of the underlying processes, scholars within the sustainable and green HRM fields have been hesitant and have only recently begun to examine the impact of employees' perceptions and interpretations of HR practices on individual and organizational outcomes (Dumont *et al.*, 2017, Guerci and Pedrini, 2014, Jones *et al.*, 2014, Shen *et al.*, 2016). In particular, HR practices that are used to communicate an organization's environmental commitment are argued to connote positive implications and cause favorable responses among employees (Renwick *et al.*, 2013). Rangarajan and Rahm (2011) found that through the implementation of green HR practices, an organization sends strong signals to existing and prospective employees that they value and prioritize environmental and social matters. In turn, employees' attributions promote an organization's external prestige and increase its attractiveness as an employer. Moreover, signals about an organization's prestige

were found to affect employees' anticipated pride in working for an organization respected for its pro-environmental or pro-social orientation and commitment (Jones *et al.*, 2014). A recent study by Shen *et al.* (2016) showed that the adoption of green HR practices reinforces employees' organizational identification, sparking employees' positive behavior toward green but also non-green employee outcomes. Their findings indicate that if green HR practices are perceived as valuable, an organization can benefit beyond the expected green employee outcomes (Shen *et al.*, 2016) and are in line with Nishii *et al.* (2008), who showed that if employees attribute the HR practices as commitment-oriented—that is, they expect the organization to be driven by service quality and/or employee well-being—employees anticipate benefitting from these HR practices (e.g. being treated well), and based on social exchange principles, are likely to feel obliged to reciprocate.

To ensure that employees respond to green HR practices as expected, those responsible for implementing these practices are tasked with communicating the company's environmental performance goals unambiguously to provide employees with a clear sense of what behavior is expected from them. Dumont *et al.* (2017) found that if green HR practices are clearly communicated, employees will more likely share perceptions about the organization's commitment to green causes and will show appropriate behavior. However, according to Nishii *et al.* (2008), employees' perceptions, interpretations and responses are not only prone to differ from managerial expectations, but also within the group of employees in relation to the same HR practice. Variance on the employee level is important and has consequences for the process through which HR practices are linked to organizational outcomes (Wright and Nishii, 2007). Thus, employees' perceptions of how and why green HR practices are implemented and their subsequent responses impact the organization's success in realizing environmental performance goals (Shen *et al.*, 2016).

Collectively, the reviewed literature suggests that the process approach to HRM has the potential to advance knowledge on the relationships between HR and employee performance and between HR and organizational performance. Also, it has been argued that the study of HR attributions underlines the importance of employees' perceptions and helps to explain why and to what extent HR practices impact employees' responses and organizational outcomes. Nonetheless, there remain a few important limitations in extant research. In HRM research, the two key theories related to attribution theory, HR system strength (Bowen and Ostroff, 2004) and HR attribution theory (Nishii *et al.*, 2008), have so far mainly been studied in isolation with few exceptions (Sanders and Yang, 2016). Also, research in this

field has so far been dominated by experimental or survey design, testing the outcomes of HR perceptions and attributions and emphasizing the role of managers in the attribution process (see Hewett *et al.*, 2018 for an overview). Much of what is known in relation to green HRM appears to be dominated by a content-based approach, while the underlying processes remain underexplored. Thus, field studies are needed about employees' perceptions of the strength of green HR practices, employees' attributions about the purpose of green HR practices, and how these two foci possibly interrelate to cause employees' behavior toward eco- initiatives. The very nature of green HR practices has been argued to signal a purpose- and commitment-oriented organization (Rangarajan and Rahm, 2011), and there is general support for the positive effect of commitment-focused attributions on employees' behavior (Hewett *et al.*, 2018). However, whether employees commonly attribute green HR practices to employee well-being and commitment remains to be examined. Drawing on the theory of HRM strength (Bowen and Ostroff, 2004), employees would only be encouraged to show the expected behavior (i.e. contribute to environmental performance through eco-initiatives) if they commonly perceive the green HR practices as strong (i.e. distinctive, consistent and consensual).

On the basis of the presented literature, the research question underpinning this paper can be formulated as the following: How do employees perceive and interpret implemented green HR practices, and how do employees' perceptions and attributions potentially impact their involvement in environmental initiatives? In the next section, the research design chosen to answer this question is explained.

Method

To approach the research question, a qualitative research design was preferred, as it provides the possibility of collecting rich narratives and enables a more in-depth understanding of processes that are not as visible or accessible otherwise (Edmondson and Mcmanus, 2007, Helfat, 2007). Moreover, given the applied nature of HR, Hewett *et al.* (2018) called for more field studies to explore the dynamics of the perceptual and attributional processes.

The focal company that informants were selected from is within the manufacturing sector, with about 20,000 employees and a headquarter in Denmark. The company is renowned for taking environmental responsibility, upholding high environmental standards and trendsetting within their sector in producing environmentally sustainable products under increasingly environmentally friendly

manufacturing processes. The organization demonstrates its commitment by adhering to the ten principles of the UN Global Compact, environmental certification standards (such as ISO 14001) and frequent media attention. Furthermore, the company was selected as it uses a structured and formalized HRM system, which increased the likelihood that HR policies and practices were in place to support employees in pursuing eco-initiatives. The eco-initiatives that the employees were involved in can be described as small-scale initiatives aiming to support the company's goal to decrease its environmental footprint while manufacturing pumps and pump parts. For example, one initiative aimed to reduce chemical waste in the production process, while another was put in place to replace inefficient motors in the machines to reduce energy consumption in the fabrication process. The initiatives were generated from the bottom up by employees and had successfully been implemented in the company.

The sample was composed of employees who had been directly involved in the eco-initiatives and managers who took the role of supporting these employees in the eco-initiatives. A purposeful sampling allowed us to identify and select informants who were knowledgeable and experienced in regard to the researched phenomenon (Patton, 2002). For this study, semi-structured interviews were chosen, as they ensure consistency between interviews without compromising the conversational style, to thoroughly understand the perceptions and interpretations of each individual informant and to detect individual variations (Drever, 1995).

Data collection

The data for this paper was gathered in 2016 and derived mainly from semi-structured face-to-face interviews. These were supported by e-mail correspondence and video calls with key informants and field notes taken during company visits in which the author was able to observe the informants' work environment and interactions with colleagues and managers. The field notes were consulted when analyzing interview data. The study involved 20 in-depth semi-structured interviews, including follow-up interviews, as shown in Appendix I. The interviews were based on a prepared interview guide that included questions drawn from the literature review on the process approach to HRM, employees' perceptions and attributions of HRM, and green HRM in particular. The interview questions aimed to provide guidance for the interviewer and in-depth understanding of (1) the content of single green HR practices with the purpose of supporting eco-initiatives, for example, through asking, *"How is the company supporting you with developing and implementing your initiative?"* and then more specifically,

"How are you incentivized to participate in eco-initiatives?" (2) employees' perceptions of the single green HR practices, for instance asking, *"What is your perception, what does the training do for you/the employees?"* and (3) employees' interpretations of the purpose behind the single green HR practices, for example asking, *"What do you think is the reason for having the reward?"* During the interview process, the aim was to allow flexibility and to adapt to the informants' responsiveness and unanticipated reactions. The interviews lasted between 30 and 60 minutes and were recorded and transcribed verbatim, producing about 120 pages of data.

Data analysis

The initial purpose of this study was to explore employees' perceptions and attributions of green HR practices that aim to support bottom-up eco-initiatives. To answer that question, a structural coding process was conducted as indicated by Guest *et al.* (2012) to identify the content of the specific green HR practices that employees *experienced* as targeted to support eco-initiatives and employees' perceptions of each practice. Based on the research question and literature review, three categories were created: (1) specific green HR practices, (2) employees' perceptions, and (3) employees' attributions of the individual practices. The data was coded accordingly with supporting software (Nvivo 11). The data analysis of the content, perceptions and attributions of the single green HR practices is provided in Appendix II.

In the next phase, the data analysis moved beyond the semantic level to interpreting the data and examining underlying patterns *across* the four identified green HR practices to form overarching themes. Building on the structured data from Appendix II, the codes were analyzed and sorted into potential themes using thematic maps similar to those suggested by Braun and Clarke (2006). From a cyclical process of analyzing the codes and consulting the literature, three initial themes were formed: "green matters," "tick-the-box effort" and "who benefits." The concept of the "tick-the-box effort" draws on an empirical study from Sumelius *et al.* (2014), who described the phenomenon as HR practices that were perceived to be formally and regularly provided and ceremonially conducted, but lacking validity. Then, the initial themes were revised to form more coherent patterns. Finally, two main and complementary themes were formed: "green matters" and "masking reality," highlighting the recurring ambiguity in employees' perceptions and attributions of all four green HR practices. The process of forming themes

is shown in Appendix III, and the final thematic map is shown in Figure 2. In the next section, the main findings are described in detail and substantiated by exemplary quotes.
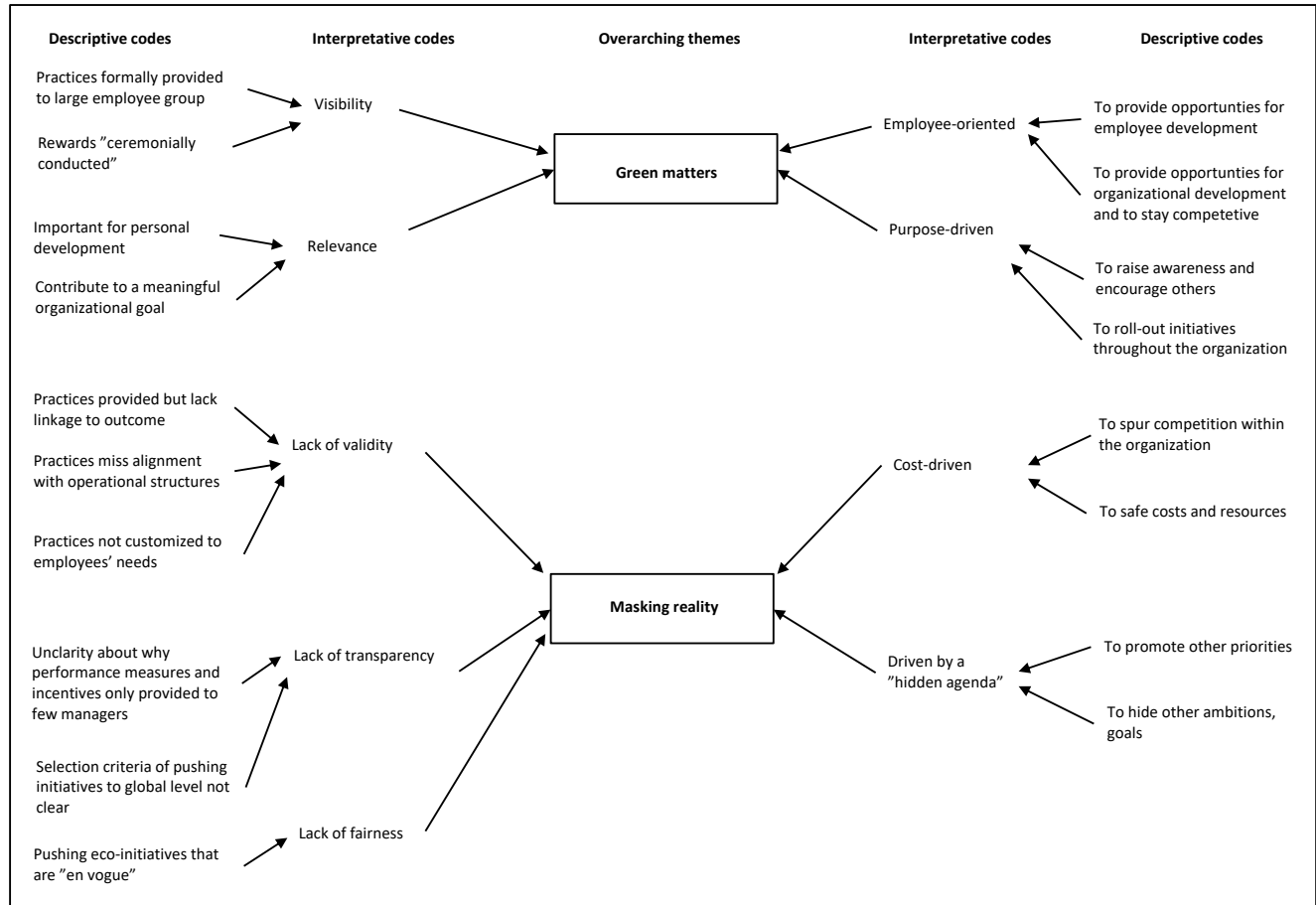
Figure 2. Final thematic map of descriptive codes, interpretive codes and overarching themes

Findings

We found that the implemented green HR practices employees perceived to target support for bottom-up eco-initiatives were the following: (1) environmental training and development projects, (2) rewards for successful local eco-initiatives, (3) environmental performance measures, and (4) incentives to support eco-initiatives. First, environmental training and development projects were perceived as formal and standardized training to raise employees' awareness and understanding of environmental matters. They were also seen as providing employees with tools, such as project management skills for setting up and

accomplishing bottom-up eco-initiatives. Development projects were perceived to serve as a proper setting and a resource pool for employees with environmental improvement suggestions who wanted to exchange and advance their ideas with colleagues and form cross-functional working groups to start eco-initiatives. Second, non-monetary rewards were provided to individual employees *after* they had demonstrated the feasibility of their eco-initiatives to acknowledge their valuable efforts. Interviewees perceived this to be a standardized practice that provided the opportunity to receive a company-wide acknowledgement for a local eco-initiative in form of an award and the support to push the initiative to a global roll-out. Third, environmental performance measures were perceived to be a standardized practice that entailed key performance indicators to evaluate the environmental performance of products (i.e. pumps and pump parts) and production processes as part of the performance appraisal for managers in the production facilities. Fourth, monetary incentives for environmental performance were perceived to be a formalized practice as well, one which entailed bonus pay for line managers who were about to support environmental initiatives in their units.

The visibility and relevance of green HR practices

According to the data, employees perceived the two practices of environmental training and development projects and rewards for local eco-initiatives as visible and relevant, as most employees had access and were able to use them regularly. When making use of them, employees expected that these practices would help them in the process of generating and implementing eco-initiatives and broaden internal career prospects, as project lead Pernille explained. Pernille continued that environmental trainings to learn about pro-environmental production methods and cross-functional development projects to advance knowledge on environmental product and process improvements were seen as opportunities to enhance one's skills and expertise. Also, the opportunity to engage in development projects was appreciated by the employees, as project member Per stated, because they promised to provide a cross-functional knowledge exchange to generate and advance ideas and to train employees in project management skills needed to steer eco-initiatives to implementation. Torben, another project member, added that exploiting these opportunities was challenging but relevant, as they provided chances to alter one's job profile, break routines, and in the context of environmental initiatives, offered the chance of doing something meaningful. Besides, the development projects were also perceived as beneficial for the organization, as

Pernille revealed: *"That we have a lot of these development projects, I think that's how we keep* [our business] *running."*

Similarly, the mandatory nature of the yearly company-wide awards ceremony for successful local eco-initiatives appeared to signal visibility and relevance to the employees, as project member Per stated: *"It made a difference to me. I also think it has been in our intranet, so many people know about it…and maybe that encourages some people to apply."* Konrad, project facilitator, noted that involved employees as well as managers perceived the award as *"a good thing,"* with the intention to *"increase awareness about the environment all the way down to all employees…"* and to enable implementation on a global level. Mikkel, project sponsor, added: *"I think one of the purposes, besides achieving the award, is to roll out the suggestion throughout* [the company]. *Something we have come up with can actually be used in good ways around the company…"* Moreover, Magnus, project member, claimed, that his colleagues in the production units would also be more supportive toward implementing eco-initiatives if they were rewarded for it: *"The people who are working down in production, they do not get credit for saving energy … I think if they could get credit for what they are doing, there would be more places where we get in to do more* [environmental improvements].*"* Thus, it appeared that having such rewards for employees at the shop floor would raise the likelihood of a smooth implementation of the eco-initiatives. While agreeing with the aforementioned intention of the award, Martin, project lead in one of the eco-initiatives, emphasized that employee engagement in eco-initiatives was primarily driven by the prospect of doing something novel and challenging: *"The motivation is that we do something which has never been done before and which is pretty complex. That means nobody else can do it."* Also, project member Per added, *"The project itself, doing something that has some value and creates attention makes a difference."* From these responses, it appears that the opportunity to provide a valuable and unique contribution to enhance organizational environmental performance is a decisive factor.

Also, environmental performance measures and environmental incentives were perceived as relevant for promoting the forthcoming bottom-up eco-initiatives, even if their provision was still inconsistent. Perceived relevance was demonstrated through employees' repeatedly articulated wish that environmental performance measures and incentives work out to strengthen the initiatives' value and timely implementation. For instance, Ruth, project facilitator, expressed a possible introduction of incentives for managers: *"I think that* [incentives] *would be great because it's a lot about proactivity and quality."* Perceived relevance also became evident in clear ideas about how the environmental incentives

system should be set up, as Philip, project facilitator, described: *"I would really like to see the bottom-up-approach ... because you can suddenly start making much more clever incentives for these things where you say, 'Okay, this department here clearly has a huge water consumption, so it's water they need to focus on. The department next to it has a huge energy consumption, so it's the energy.'"* However, project facilitator Ruth also stated that managers who were already motivated to support eco-initiatives were driven by contributing to the organization's environmental profile. Thus, incentives would not provide a critical advantage, and she concluded, *"It's not the incentives that make it work. It is that some managers want to do something for the environment and can see a benefit for their machinery."* While from a managerial point of view, some managers were perceived to act in a purpose-driven manner, making incentives for managers seem unnecessary, others perceived the formalization of environmental performance measures and incentives and clear communication about them as critical for the initiatives' implementation success. The latter point was brought up by Philip, project facilitator, in regard to environmental performance measures: *"I think for middle management especially ... task clarity is really important ... if you say, 'Okay, we get you to promote a green mindset, and the way we focus on that at the moment is that we say "let's measure the number of improvement suggestions or number of ideas for actual reductions,"' then it suddenly becomes a task that is clearly scoped and can be prioritized with other tasks."* Overall, from the interviews it appeared to be the case that employees as well as managers perceived environmental performance measures and incentives for managers as relevant and brought in suggestions about how to improve them, but were searching for clear structures for how and to what extent managers should be measured and incentivized.

Lack of consistency and transparency of green HR practices

Despite the perceived potential value of green HR practices, the data also suggests that the visibility of green practices (i.e. formal and regular provision of green HR practices) did not per se ensure that employees were able to apply the knowledge and skills they gained through these practices in the creation and implementation of eco-initiatives. Employees actively involved in eco-initiatives seemed to perceive a lack of validity between what the provided practices promised to support and the outcomes. For example, employees formally received and appreciated the opportunity for knowledge exchange across teams and departments to advance and use the knowledge gained in successful local eco-initiatives. However, in practice, this development opportunity was perceived to be hampered through existing

working structures and leadership behavior. Pernille, project lead, stated: *"I am just an employee and I have a lot of things to do. We have to have a leader that says, 'You can prioritize, you can use 10 percent of your time supporting other* [production sites] *in getting through with this project,' but where I sit I haven't got the possibility to go to* [another production site] *for a week and help them. I cannot do that .... Someone needs to do some of my tasks then, and who is that going to be?"* Thus, it appeared that employees perceived further efforts to be lacking when it came to integrating and aligning training and development projects with the employees' working reality to increase the likelihood of realizing eco-initiatives. Pernille suggested that aligning the organization's working structures with its environmental strategy would allow development projects to come to life and would signal the organization's commitment to bottom-up eco-initiatives: *"Maybe they have to make another setup … let us sit together sometimes so we can exchange ideas … it could be really motivating for me as an employee if I know it is not only me working in that direction. Instead, it is part of a bigger plan, it is something that the group really wants."*

With regard to rewards, it was found that great emphasis was placed on the awards ceremony (i.e. the "one-shot" acknowledgement of employees' performance). However, what was lacking was the consistency and stability of signals sent through the HR practice to ensure that the awards reflected the company's aim of providing support for locally successful eco-initiatives to help them develop their potential for global implementation. To illustrate this, Konrad, project facilitator, pointed to a locally successful eco-initiative aimed at reducing chemical waste during the production of pump parts, which received an award but no further support to advance its potential for a global rollout. Consequently, Konrad perceived the initiative's potential to be wasted: *"What have we actually done about Pernille's good project last year? Do we get enough benefit from it for the group? Locally we do … but* [on a group level] *I am not sure that we get enough benefit from it."* In addition, Pernille, the project lead of this initiative, perceived that the opportunity to share the knowledge and expertise gained during the local implementation of the initiative with other subsidiaries and the parent company was not consistently reinforced through the award as she had hoped for. Philip, project facilitator, assumed that a possible cause of such inconsistent communication was a dysfunctional knowledge transfer between the subsidiaries and the parent company: *"You have specialists sitting in one subsidiary, but their knowledge is not really utilized on a global level."* During the interviews held with project facilitators Philip and Konrad concerning the reward practice, it appeared that structural problems, such as those involving

101

ownership structures and working structures, hampered consistent communication. However, the interviews also demonstrated employees' perceptions of the untapped potential to use the award more effectively on a global scale to leverage the locally-won knowledge and expertise globally.

Adding to the perceived lack of consistency, all green HR practices were perceived to lack transparency regarding implementation. For instance, the two practices of "environmental performance measures" and "environmental incentives" were restricted to a specific target group that was not perceived as helpful for promoting eco-initiatives. Environmental performance measures targeted managers and employees with environmental job profiles, leaving out line managers on production sites, as project facilitator Philip explained. To the employees, it was not clear why environmental performance measures did not target production unit line managers, who were seen as critical gatekeepers for eco-initiatives: *"They* [managers] *are measured on the production, how many pumps can we make. That's the only thing they are measured on. Even if you can save 40 percent of the energy, why?"* (Martin, project lead). Employees were concerned that the lack of environmental performance indicators for line managers was making it harder for employees to successfully realize eco-initiatives—a task that the top management was expected to handle. For example, Jesper, project member, noticed the following: *"The top management says a lot of things, but if you don't give targets to the line managers, if they are only measured on production ... and the top management still expects it* [eco-initiatives] *to happen...."* Feeling unable to contribute to the top management's expectations, employees attributed the insufficient provision of environmental performance measures to the organization's primary focus on cost reduction. As Martin summarized, *"They only care about how many pumps we can make."* In addition, Ruth, project facilitator, supported this view and stressed the perceived lower importance of eco-initiatives in comparison with other strategic focus areas: *"There are so many things of higher priority in our company: quality, production, safety. These are more prioritized than the environment."*

Moreover, employees in this study perceived that rules were unclear regarding the basis on which the award was used to promote eco-initiatives for global implementation. For example, employees who received an award for their initiative aimed at reducing chemical waste during the pump production process perceived the distribution of the award's outcome as unfair, as the award did not help them leverage their initiative to support other production sites in implementing it. Instead, employees perceived that rather implicit criteria, such as the popularity of the environmental issue, drove the outcome distribution, which Pernille assumed was the case with their initiative: *"We use a lot of*

chemistry. Not as much as many other companies, but it's there, and we use oil ... and I know we have other projects here in Denmark where we could save some ... but it's not in the strategy or anything. It's not a focus area." Pernille suggested that the organization should be more open to other environmental areas, and should become better at identifying the individual needs and demands of each production site and adjusting environmental goals accordingly: *"We are running after water and energy ... but sometimes we have other areas that we could focus on too .... Maybe we should be better to distinguish which kind of environmental issue is important in the different locations."* The participating employees in this study showed disappointment and experienced a lack of transparency regarding why and how local eco-initiatives are promoted. Martin, project lead, described the following: *"The complexity in that is not visible to us. Maybe they have a reason for why they are not, for example, selling motors. But for us, it is just frustrating."* Consequently, employees as Magnus perceived that the company was not using the initiatives' full potential identified in successful local projects: *"They don't use all the potential they have ... and they don't tell us why they don't"* (Magnus, project member). In this context, the award's purpose was interpreted as a means of fueling competition between the subsidiaries, as Mikkel, project sponsor, summarized: *"I know the award is given based on a suggestion from an employee, but it is actually the company that receives the award ... and in that extent, I think it is kind of a competition between the sister companies."* In addition, Konrad, project facilitator, remarked that interest in applying for the reward was declining and that it was becoming more difficult to receive applications from employees with successful local eco-initiatives. This, combined with employees' initial interpretation of green HR practices, revealed an organization that is purpose driven and employee oriented. Employees perceived the green HR practices as a façade that ended up misleading employees about the importance of environmental matters and eventually about the support for eco-initiatives.

Analysis & Discussion

The purpose of this study was to better understand the microprocesses of how employees perceive and interpret the implemented green HR practices and to elucidate the potential consequences for employees' behavior toward eco-initiatives. This study revealed two contrasting overarching themes— "green matters" and "masking reality"—that show the perceptual and attributional ambiguity that employees experienced while pursuing bottom-up eco-initiatives. Whereas "green matters" describes employees' positive perceptions of green HR practices as purpose driven and employee oriented,

"masking reality" depicts employees' negative perceptions of the same practices as cost driven and economy oriented. The themes are analyzed and discussed in this section in relation to the relevant literature, and an overview of the two themes is provided in Figure 3.
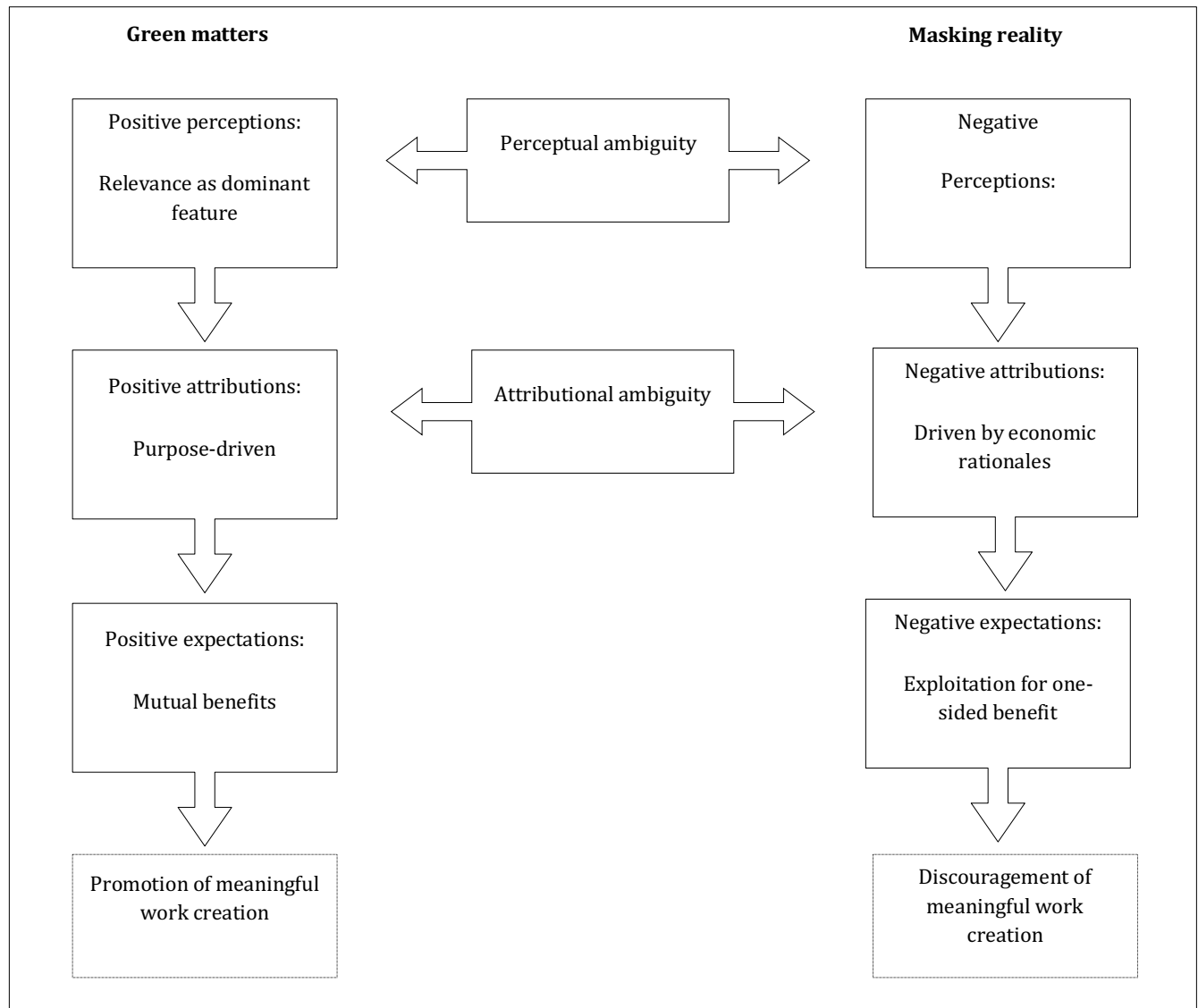
Figure 3. The two contrasting overarching themes

In the first theme, *"green matters,"* the two HR practices of environmental training and development projects and rewards for local eco-initiatives caught employees' attention and triggered positive perceptions. Hence, employees' positive perceptions of these practices encouraged positive

attributions of an organization that was committed to safeguarding employees' well-being and the environment's. It is suggested that the types of HR practices executed strongly affect these positive attributions because the implementation of green HR practices is perceived as the organization's intention of caring for environmental causes beyond financial gains and of having a strong green agenda (Rangarajan and Rahm, 2011). The study's findings showed that employees expect to benefit from such practices, which include receiving the opportunity to become involved in meaningful initiatives that provide learning opportunities and that allow for personal development, cross-functional collaboration, a break from daily routines and acknowledgment. This is in line with earlier research that revealed that individuals perceive their jobs or job tasks as meaningful if they have the opportunity for personal growth, to socialize and share knowledge with others, to create something with their own hands and to serve others, even in jobs that are not explicitly service oriented (Lips-Wiersma, 2002). The benefits that employees perceive from engaging in meaningful tasks are likely to lead to reciprocation, the wish to "give back" to the organization (Jones, 2010) and the wish to be part of "something outside of or greater than the tangible self" (Guerci *et al.*, 2018, p. 4). Perceived meaningfulness can be a strong motivator for employees to commit to organizational goal achievement (Thomas and Velthouse, 1990) and can help employees to justify making immense efforts to accomplish their goal (Cohen, 2008).

Notably, the perceived relevance of all green HR practices appeared to be an important metafeature in this study. It prevailed even if the same green HR practices were otherwise perceived negatively. The dominance of this metafeature was also observed in earlier studies, where relevance was assumed to influence visibility, validity and fairness positively (Sumelius *et al.*, 2014). Employees perceived the practices' potential value and repeatedly expressed the wish for well-functioning green practices implemented with respect to employees' needs to help them in their endeavor to pursue eco-initiatives. For instance, environmental performance measures were suggested to also be provided for line managers in production facilities to decrease gatekeeping and to accelerate the implementation of the eco-initiatives. Thus, it is suggested that green HR practices, if perceived as visible and relevant, can serve as a catalyst for employees' desire to engage in meaningful initiatives (i.e. to contribute to environmental goal achievement through eco-initiatives).

However, the findings also showed contrary perceptions of the same green HR practices, described under the second theme of *"masking reality."* When making use of the green HR practices, employees noticed that all practices were lacking consistency. Consequently, the employees tried to make sense of

why these practices did not fulfill what they promised, and this resulted in varying negative attributions. The two practices of environmental training and development projects and rewards for local eco-initiatives were viewed as highly distinctive but as lacking consistency, which was understood as a "tick-the-box effort," similarly observed by Sumelius *et al.* (2014) and interpreted as doing what has been required but putting limited effort into aligning practices with organizational structures. Employees' perceptions coincided with earlier findings in which HR managers were found to neither actively align HR practices with environmentally strategic goals nor view it as their responsibility (Harris and Tregidga, 2011). In addition, the two practices of environmental performance measures and environmental incentives were perceived to lack validity and visibility, which resulted in employees' interpretations of practices that mask reality (i.e. doing something for show to conceal other intentions, such as being driven by economic rationale or prioritizing safety issues instead). It is suggested that one reason for the perceived limited and unconvincing efforts could be due to competing interests between decision-makers. For example, HRM might face tensions when forced to fulfill parallel goals as discussed in Guerci and Carollo (2016), such as contributing to performing high safety and quality standards; thus, supporting environmental performance goals might be detrimental to achieving other goals. Along with such internal forces, it can be assumed that external stakeholder pressure promotes the development of green "window-dressing" activities (Royle, 2005), for example, to avoid consumer boycotts. It can be implied that dealing with such pressures takes focus and resources away from creating and implementing actually strong green HR practices, which are perceived as consistently supporting eco-initiatives. Furthermore, it is possible that limited efforts are rooted in a deficient knowledge of how to master the alignment of HR practices with strategic goals on the one hand, and operational processes on the other hand (see for example Haddock-Millar *et al.*, 2016).

What also contributed to employees' perceptions of practices that "mask reality" was the perceived lack of transparency and fairness. For example, employees believed that management's decision about the restricted deployment of environmental performance measures and environmental incentives was not comprehensible and did not comply with the signaled support of eco-initiatives. With regard to the award that employees perceived as unfair: Instead of promoting the awarded local eco-initiatives for global implementation equally, as expected, the resources and support for the initiatives' global implementation did not appear to follow an equality rule or any other distinguishable rule. As employees were not able to identify or understand how the award was used, they perceived that other needs or preferences that

were not visible to them drove the award. As a result, employees interpreted the award as a means of spurring competition within the organization. It can be argued that employees' perceptions of false signals reduces the signalers' quality and credibility (Connelly *et al.*, 2011), as well as the acceptability of the green HR practices (i.e. the extent to which employees contribute to and make use of these practices; (Bowen and Ostroff, 2004). The study's findings indicate issues with the acceptability of the award as an influential lever for local eco-initiatives, shown in employees' declining interest in receiving the award. However, as research on organizational justice perception argues, perceived unfairness not only influences employees' perceptions of a practice's value, but also leads to negative emotions (Rupp, 2011, Rupp *et al.*, 2006).

After all, employees seemed ambiguous about how to understand the signals that these practices sent. On the one hand, employees perceived that green matters—for example, the green HR practices— seemed relevant, as they communicated a purposive commitment and the chance to become involved in meaningful initiatives. On the other hand, employees perceived that the same HR practices were lacking authenticity and that the organization did not make a consistent effort to allow for the practices' unimpeded use. According to Bowen and Ostroff (2004), HR practices are considered to be particularly ambiguous if they are associated with perceptions of distinctiveness as well as low validity and a lack of transparency and fairness. In this situation, the signals that the HR practices send are inconclusive, being neither positive nor clearly negative, and they make it difficult for employees to make sense of the practices' "true" purpose. When faced with attributional uncertainty, employees may likely look for other sources to make sense of the situation, thus leading to undesirable sensemaking processes (Nishii *et al.*, 2008) and a loss of the feeling of control over what can be expected and what the organization expects (Rupp *et al.*, 2006). As a long-term consequence, employees' engagement in eco-initiatives, their organizational pride and their interest in working toward a common, purpose-driven goal might be at risk if the negative perceptions and attributions of the green HR practices' purpose have a chance to overshadow positive intentions.

The potential consequences of the perceived ambiguity for individual behavior toward organization-level objectives and performance imply that it is crucial to better understand the underlying mechanisms of how employees perceive and interpret organizational actions and how these perceptions and attributions guide employees' decision to engage in organizational initiatives. Opposed to traditional management thinking, employees' decisions to engage in organizational initiatives are not entirely driven

by rationality; employees do not always make the most informed decisions, either (Glavas, 2012), and thus may not act in line with managerial intentions. Instead, this study suggests, employees' decisions are guided by subjective perceptions that filter the messages sent by green HR practices regarding how visible, relevant, consistent, transparent and fair these practices seem. The subjective perceptions trigger individual sensemaking processes.

Specifically, this study highlighted the value of green HR practices as a catalyst for creating meaning in work. It has been maintained that employees need meaning-making (Lips-Wiersma and Morris, 2009). Although meaning-making is increasingly argued to be an intrinsic process (i.e. meaning has to come from inside the individual and cannot be prescribed; (Lips-Wiersma and Morris, 2009), based on this study's results, it is suggested that employees' need for meaning-making can be guided through green HR practices. Lips-Wiersma and Morris (2009) found that for one to perceive work as meaningful, it is important to communicate authentically and to allow deficiencies to show, rather than pretending to have an ideal situation. Thus, it is proposed that if the green HR practices communicate the organization's commitment to the environment and to the associated goals in authentic ways—for example, they communicate how and the extent to which the HR practices can realistically support eco-initiatives—they can potentially help to nurture the meaning of work.

Limitations and implications for HRM practice and research

The present study highlighted the ambiguity in employees' perceptions and attributions of the implemented green HR practices, as well as the resulting risk of decreasing the success rate of bottom-up eco-initiatives. Nonetheless, a few limitations in this study suggest considerations for future research. One limitation concerns the examination of a possible interrelation between the single metafeatures within the concept of HRM strength as suggested by Delmotte *et al.* (2012). Although this study focused on single metafeatures and identified a few as influential, it did not further examine this. Thus, future research could investigate how single metafeatures, such as relevance, relate to other metafeatures. Moreover, it could be valuable to examine in a comparative study how the HR practice's purpose—for instance, a commitment to environmental or social matters—might affect the "strength" of metafeatures, such as relevance. Although this study acknowledged individual variability in employees' perceptions of the same HR practices as advocated by Wright and Nishii (2007), due to small sample size, it was not possible to aggregate the variance on a group level and make statements on cross-level effects, such as

how group-level variance affects the perceived green HR practices' strength. In addition, this study focused on employees' perceptions of green HR practices, and it excluded how these perceptions impact employees' behavior. Future research could integrate this variable and investigate how employees' perceptions moderate the relation between green HR practices and employee behavior toward eco-initiatives.

Despite these limitations, the study's findings have important theoretical implications. They indicate the need to explicitly integrate the process-oriented approach to green HRM to emphasize the impact of the underlying mechanisms on green HRM performance. Moreover, drawing on the study's findings, it is suggested that linking the concepts of HRM strength to HR attributions enhances the understanding of the powerful relation between perceived HR signal strength and employees' ability to link unambiguous attributions to the organization's purpose and their final responses to organizational greening efforts, such as eco-initiatives. In addition, the revealed perceived ambiguity toward green HR practices, which may relate to the inherent tensions that HR professionals face when embedding green HR practices into an organization, suggests a change of the theoretical lens toward a paradox perspective (Guerci and Carollo, 2016) to allow for a more in-depth understanding of the potential influence of tensions on HR perceptions.

From a managerial perspective, the study's findings are important in several ways: First, they show that employees' perceptions of the green HR practices need to be considered to avoid perceptions of "window-dressing" activities (Royle, 2005). Perceptions can serve as valuable feedback to the organization regarding how effective signaling through green HR practices has been perceived (Connelly *et al.*, 2011) and regarding ambiguities and potential gaps between expectations and outcomes. In turn, decision-makers and HR professionals can use the feedback to improve the practices' strength. Knowing what employees perceive as meaningful can moreover provide the chance for organizations to create employee buy-in and trigger employees' motivation to contribute to the greater good, preserving the environment for future generations. Thus, it is suggested that green HR practices have the potential to channel employees' demand for meaningful work.

Second, the findings emphasize the need to send clear and coherent messages to employees to provide them with a clear sense of the expected behavior and outcome. HR managers are advised to carefully consider how they communicate the purpose and objective of the green HR practices. Prior research pointed out that unambiguous communication is crucial for avoiding undesirable sensemaking

processes and variability in employees' perceptions of green HR practices' meaning (Dumont *et al.*, 2017). To ensure this, decision-makers as well as HR and business units, such as environmental management, must be aligned when it comes to the purpose and desired outcomes of the green HR practices (Guerci and Pedrini, 2014). The systematic alignment of green HR practices with strategic environmental goals is essential for green HR practices' success (Haddock-Millar *et al.*, 2016) and provides employees with a mandate for actively driving eco-initiatives forward (Jabbour, 2011). However, such alignment is often not easily accomplished: It demands a clear positioning of the HR function as well as a strong intent to support the strategic environmental agenda despite paradoxical tensions and beliefs regarding the idea that green HR practices provide benefits on both an individual and an organizational level, which has yet to be substantiated as other studies have shown (e.g. Guerci and Carollo, 2016, Haddock-Millar *et al.*, 2016, Harris and Tregidga, 2011). Furthermore, it has been observed that HR responsibilities are increasingly delegated to line managers; hence, their performance of HR tasks is critical to the success of HR practices (Nehles *et al.*, 2006). Consequently, the authors argue, to ensure that line managers can perform HR tasks effectively and in a way that is beneficial for employees as well as managers, it is important to communicate about HR practices with line managers in a clear and consistent manner to foster consensus and alignment.

Third, transparency and fairness are key to ensuring that green HR practices are perceived as legitimate, good practices to support employees' eco-initiatives. Employees who perceive transparency and fair treatment are more inclined to attribute the practices to organizational commitment to environmental sustainability and to value employees' contributions. Specifically, if employees perceive the award's outcome distribution as a clear and fair process, they can predict the reward's outcome, and this will increase their feeling of being in control (Masterson *et al.*, 2000). Moreover, such positive perceptions are likely to increase the quality of the social exchange relationship with the organization and, in turn, are expected to trigger more commitment to the environment (Aguilera *et al.*, 2007).

Finally, the findings imply that green HR practices that are perceived as visible and relevant can lay a solid foundation for social exchange relationships, particularly in the context of eco-initiatives, because employees are inclined to reciprocate when they perceive a benefit (Jones, 2010). However, the data also implied that with the growing visibility of these practices, employees increasingly expect that the anticipated benefits of being involved in eco-initiatives will be realized. That is supported by Piening *et al.* (2014), who argued that with growing expectations, employees also expect HR practices to work

out as intended. Thus, it is proposed that the more salient green HR practices are perceived to be, the more organizational effort is necessary to ensure a consistent implementation and to avoid unintended sensemaking as well as attitudinal and behavioral consequences.

Conclusion

The objective of this study was to gain a clearer understanding of the underlying processes through which employees perceive, interpret and attach meaning to implemented green HR practices, as well as how these processes potentially impact employees' involvement in eco-initiatives. To achieve this objective, the perceptions of employees that were involved in eco-initiatives and of managers supporting these initiatives were examined in a manufacturing company that is headquartered in Denmark and is renowned for its environmental sustainability performance. The study revealed four green HR practices that employees perceived to target eco-initiatives. All green HR practices were perceived as relevant, and employees expressed their wish for well-functioning practices that would enable them to benefit from participating in meaningful initiatives. These expected benefits may, however, be impeded if the signals sent through the green HR practices are perceived as ambiguous. These findings indicate that the signals sent by HR practices to employees are critical, as the signal quality impacts employees' perceptions of the organization's intention to care for the environment, its sustainable solutions and its potential involvement in upcoming eco-initiatives. Based on the study's findings, it can be implied that organizations need to pay particular attention to the way in which they communicate their intentions to employees through HR practices and to the underlying mechanisms that may subsequently influence attitudes and behavior toward eco-initiatives.

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Appendix

Appendix I Overview on interview participants

Respondent title	Role of respondent	Interview date
Senior mechanic (Martin[8])	Project lead	16 May 2016 interview 30 May 2016 follow-up interview
Mechanic (Jesper)	Project member	16 May 2016 interview 30 May 2016 follow-up interview
Engineer (Pernille)	Project lead	19 July 2016 interview
Electrician (Magnus)	Project member	30 May 2016 interview
Electrician (Clemens)	Project member	30 May 2016 interview
Mechanic (Torben)	Project member	30 May 2016 interview
Technician (Per)	Project member	5 January 2016 interview
Environmental project manager (Konrad)	Project facilitator	5 January 2016 interview
Department head for quality and environment (Ruth)	Project facilitator	05 January 2016 interview, 14 June follow-up interview
Senior manager for quality and environment (Mikkel)	Project sponsor	05 January 2016 interview
Environmental project manager (Philip)	Project facilitator	16 October 2015 – 16 May 2016 three interviews
Sustainability project consultant (Victoria)	Project lead	20 May 2016 interview, 19 August 2016 follow-up interview
Sustainability consultant (Sofie)	Project member	16 August 2016 interview
Head of group sustainability (Karla)	Project sponsor	13 June 2016 interview

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[8] Names of all interview participants were changed to ensure their anonymity

Appendix II Overview of coding and categorizing of single green HR practices

Environmental trainings and development projects

Perceptions	Interpretive codes	*Visibility*	*Relevance*	*Lack of validity*	*Lack of instrumentality*
	Descriptive codes	Personal development opportunities are formally provided and accessible to most employees	Break routines, alter job profile, do something meaningful	Lack of alignment with operational structures hamper application and outcomes: acquired knowledge cannot be utilized	Opportunity to share knowledge not consequently reinforced in a timely manner
Attributions	Interpretive codes	*Employee-oriented*	*Purpose driven/ commitment focused*	*Cost-driven, "tick-the-box" effort*	
	Descriptive codes	To provide opportunities for skill enhancement to master eco-initiatives, broaden internal career perspectives	To provide opportunity to grow and stay competitive	To appear committed but to keep efforts toward eco-initiatives to a minimum/ within limits	

Rewards for local eco-initiatives

Perceptions	Interpretative codes	*Visibility*	*Relevance*	*Lack of validity/Lack of instrumentality*	*Lack of transparency and fairness*

	Descriptive codes	Formally provided to most employees throughout the organization	Rewarding ceremony: top manager personally hands over prize to employee to honor initiative	Not consequently using the reward's potential to push initiatives forward	The distribution of resources and support for the rewarded initiatives to leverage initiative at global level is not based on clear and plausible criteria
Attributions	Interpretative codes	*Purpose driven/ commitment focused*		*Driven by exploiting employees' resources*	*Driven by "hidden agenda"*
	Descriptive codes	To roll out initiatives throughout the organization, to increase awareness all the way down, to acknowledge employees' contribution, to decrease environmental footprint		"To show off": It is more the company that receives the reward, to spur competition within the organization	To promote only eco-initiatives at global level that are "en vogue" (water, energy)

Environmental performance measures

Perceptions	Interpretive codes	*Relevance*	*Low visibility*	*Lack of validity*	*Lack of transparency*
	Descriptive codes	Especially important for line managers in the production facilities that act as critical gatekeepers	Only provided to few managers, not the critical gatekeepers	Perceived as a façade: top management expects eco-initiatives but critical gatekeepers are not measured on how they support eco-initiatives	It is not clear why they are not provided to line managers in the production facilities
Attributions	Interpretive codes	*Purpose driven/ commitment focused*	*Cost-driven, "tick-the-box" effort*		

	Descriptive codes	To reinforce managers' behavior to support eco-initiatives and to show commitment to environmental matters	Limited provision to appear committed but to reduce costs and efforts to take care of other priorities		
Incentives for eco-initiatives					
Perceptions	Interpretive codes	*Relevance*	*Low visibility*	*Lack of validity*	*Lack of transparency*
	Descriptive codes	Especially important for managers and employees in the production facilities where eco-initiatives are implemented	Provided to only a few managers, not the critical gatekeepers	Critical gatekeepers in the production facilities are not incentivized to support implementation	It is not clear why managers and employees in the production units are not incentivized
Attributions	Interpretive codes	*Purpose driven/ commitment focused*	*Cost-driven, "tick-the-box" effort*		
	Descriptive codes	To encourage others to support eco-initiatives, to ensure a smooth implementation	Limited provision to appear committed but to reduce costs and efforts to take care of other priorities		

Appendix III Thematic map in development

Descriptive codes	Interpretative codes	Overarching themes	Interpretative codes	Descriptive codes

Practices formally provided to large employee group

Rewards "ceremonially conducted"

Visibility

Green matters

Employee-oriented

To provide opportunties for employee development

To provide opportunities for organizational development and to stay competetive

Important for personal development

Contribute to a meaningful organizational goal

Relevance

Purpose-driven

To raise awareness and encourage others

To roll-out initiatives throughout the organization

Masking reality

Practices provided but lack linkage to outcome

Practices miss alignment with operational structures

Lack of validity

"Tick-the box" effort

Cost-driven

To spur competition within the organization

To safe costs and resources

Practices not customized to employees' needs

Unclarity about why performance measures and incentives only provided to few managers

Lack of transparency

Who benefits

Driven by a "hidden agenda"

To promote other priorities

To hide other ambitions, goals

Selection criteria of pushing initiatives to global level not clear

Pushing eco-initiatives that are "en vogue"

Lack of fairness

CHAPTER 6: PAPER 3

Democratizing innovation processes:
personal initiative in bottom-up eco-innovation

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Abstract

Aims. Previous work on employee-driven innovation (EDI) has demonstrated the benefits of employees' proactive behavior in achieving success with innovations. This study employs the concept of personal initiative to investigate the underestimated role of employees' agency in complex processes of innovation, showing the impact of personal initiative on employees' innovation success.

Design and methodology. Based on two embedded cases of environmental bottom-up innovation in a large manufacturing company, this study examines employees' behavior in generating, championing and realizing such initiatives.

Findings. This paper provides insights into how employees succeeded, through taking initiative in generating, championing and realizing environmental initiatives despite facing high complexity and

resource constraints. Without being prompted from the top down, employees started these initiatives themselves and showed phase-specific behavior in overcoming the various challenges. Thus, self-starting behavior was found dominant in generating ideas, whereas proactive and persistent forms of behavior were found to be prevalent in championing and rolling out the initiatives.

Originality and value. Current understandings of employee-driven innovation highlight the importance of developing employees' potential capabilities and organizational-level guidance. Using an active performance perspective, this study emphasizes the importance of employees' agency in ensuring EDI success, even when conditions are not conducive to their doing so.

Keywords. Employee-driven innovation, eco-innovation, bottom-up innovation, proactive behavior, personal initiative

Introduction

Shifting the focus from a more traditional innovation approach towards democratizing the innovation process and involving non-experts in it has broadened the range of those who can contribute to innovation processes (Chesbrough, 2003, Von Hippel, 2005), as well as increased attention to the conceptual development of employee-driven innovation (Høyrup, 2010). The concept of EDI stresses the active and systematic involvement of non-managerial employees in innovation processes, as their strong involvement in daily routines provides them with in-depth and contextual knowledge that is both unique and different from that of their managers (Kesting and Parm Ulhøi, 2010). In this way, employees are capable of making a contribution to innovation processes that strengthen an organization's capacity to innovate (Kesting and Parm Ulhøi, 2010). Despite the admitted potential of employees in contributing to the innovation process, scholarly work on EDI remains limited and focused either on the conceptual development of employees' capabilities or, when empirical in nature, dedicated to individual characteristics such as intrinsic motivation and well-being (Buech *et al.*, 2010), self-efficacy (Frese *et al.*, 1999) and organizational characteristics such as managerial support (Ramus and Steger, 2000), leadership behaviour (De Jong and Den Hartog, 2007) and group climate (Axtell *et al.*, 2000), as well as how these characteristics determine – that is, facilitate or impede – the success of EDI.

While scholars have acknowledged that individual characteristics such as self-efficacy, proactivity and ownership are important for EDI success, most studies of EDI still seem to endorse a traditional performance perspective, emphasizing the importance of organizational-level guidance and expecting employees to focus on submitting innovative suggestions within a given frame of action (Holman *et al.*, 2012). In this perspective, individual agency in work processes that involve changing the frame of action remains reserved to managers and specialists (Virkkunen, 2006). In that sense, the current literature on employee-driven innovation has taken only initial steps in developing an ontology of the emancipation of employees.

Within today's fast-moving working environment, with its increasingly rapid technological developments, the need to emancipate employees and shift from the traditional view of their performance is being argued (Frese, 2008). Unlike the prevailing understanding of EDI, the concept of individual agency embraces the employee as an active agent who breaks away from the current structure and changes the frame of actions (Virkkunen, 2006). The increasing scholarly attention being given to the role of individual agency in innovation processes supports this change in perspective (Engeström, 2011, Haapasaari *et al.*, 2016, Haapasaari *et al.*, 2017).

While we are not attempting to neglect the value of management initiatives or the guidance of EDI as a condition for successful innovation, in this paper we aim to add to the EDI literature by embracing a bottom-up view of employees' agency in accordance with the findings of our empirical study. Specifically, we noticed how employees changed the frame of action, took initiative and proactively steered highly complex innovation processes independently. Thus, the objective of this paper is to conceptualize how the process of employees' transforming innovative ideas into feasible initiatives happens without being activated from the top down. In doing so, we employ the concept of personal initiative (Frese *et al.*, 1997), involving a consideration of individual agency and the proactive and dynamic facets of employee behaviour, which are particularly relevant in the critical phase of the implementation of ideas.

Environmental innovation (eco-innovation) is among the key concerns of today's manufacturing companies, in some studies even being mentioned as an essential driver of consistently high performance over time (Kindström *et al.*, 2013). Eco-innovation carries several unique challenges, including choosing the specific area in which to innovate, acknowledging the potential demand for organizational changes, and linking with and balancing between stakeholders (Horbach and Jacob, 2018). Thus, the specific

context of eco-innovation provides a relevant and critical setting to showcase employees as active agents taking initiative for a more environmentally sustainable organization (Jackson and Seo, 2010).

Consequently, this study provides an in-depth analysis of employees' initiative-taking in complex innovation processes and answers the following research question: How does personal initiative advance bottom-up innovation success and aid employees in overcoming the inherent complexities? Answering this research question, the paper contributes to the literature on EDI in three ways. First, it takes seriously an active performance approach, viewing the employee as an "active architect of the job" (Wrzesniewski and Dutton, 2001, p. 194). Strengthening the role of "underexposed" employees in innovation processes as active agents provides a counterbalance to the dominant traditional performance view. Secondly, as the paper provides empirical insights into how personal initiative provides employees with the necessary coping behavior to overcome the perceived challenges in what is a complex innovation process, it clarifies Buhl et al.'s argument (2016) that, for bottom-up innovation success, the focus on developing individual capabilities is not sufficient but requires employees' proactive and risk-taking behavior. Thirdly, this paper responds to the call for more research into the processes of EDI to help elucidate how employees' personal initiatives are dynamically reflected in emerging innovation processes, which in essence is a methodological contribution. Similar to a recent study of bottom-up innovation processes (Haapasaari *et al.*, 2017), this paper argues for a shift from a static input-output view towards a dynamic interactive view. The process approach is appropriate in this study because we follow eco-innovation as a dynamic process that encompasses different phases (Scott and Bruce, 1994). This allows the activities and experiences of individual employees to be illustrated and helps explain how employees' behavior unfolds and changes (Akgün *et al.*, 2009).

Theoretical background

This section presents the foundations of EDI and the nature of eco-innovation that position the paper in the literature and frame the research question.

The role of employees in the innovation process
Although the concept of EDI implies the active and systematic involvement of employees, the current literature is dominated by a focus on identifying the necessary employee capabilities for engaging in innovation processes, such as tacit knowledge (Høyrup, 2010), and on how management should guide

employees in creating EDI successes. This view is in line with the traditional performance concept (e.g. Hackman and Oldham, 1976), which is mainly concerned with how employees perceive and react to the fixed and objective characteristics of certain tasks. Furthermore, it assumes that employees who are satisfied with their allocated tasks will be more likely to take on additional tasks. The few existing empirical studies of employees' involvement in eco-innovation adopt this perspective (Buech *et al.*, 2010, Remmen and Lorentzen, 2000, Rothenberg, 2003). For example, Axtell *et al.* (2000) discuss employees' behavior in relation to certain job characteristics that support or impede employees' actions in the innovation process, while Veenendaal and Bondarouk (2015) investigate how managerial practices impact on employees' perceptions and behavior in the innovation process.

Scholars are increasingly calling for a change to the traditional perspective in the direction of a more contemporary view of active performance (Frese, 2008). In line with this view, the concept of transformative agency (Virkkunen, 2006) regards the employee as an active agent who questions the status quo and takes the initiative to change it (Engeström, 2011). Similarly, the concept of job-crafting argues that jobs and job tasks can actively be altered (Wrzesniewski and Dutton, 2001). Employees are motivated to craft their job tasks in order to create a more satisfying job situation, to craft a meaningful work experience, to enhance their self-image (Wrzesniewski and Dutton, 2001), to take control of their actions (e.g. Ashford and Black, 1996) and/or to redefine organizational goals in order to overcome barriers (e.g. Frese and Zapf, 1994, Hacker, 1985). Drawing on individual agency, a recent contribution explores how employees' agency can influence the process of turning initial initiatives into feasible innovation studies (Haapasaari *et al.*, 2017). Their findings indicate that employees' innovation efforts require transformative agency to turn ideas into successful innovations. Also studies of leadership behaviour in innovation processes found that the delegation of greater autonomy and responsibility to employees are important in facilitating EDI (Amundsen *et al.*, 2014, Su and Baird, 2017).

A central concept associated with the notion of active performance is personal initiative (Frese and Fay, 2001, Frese *et al.*, 1997). This entails employees' active, anticipatory and forward-looking behavior, which must be aligned with their organization's goals: "(it) is work behavior characterized by its self-starting nature, its proactive approach, and by being persistent in overcoming difficulties that arise in the pursuit of a goal" (Frese and Fay, 2001, p. 134). According to Frese *et al.* (1997) the three co-existing characteristics of personal initiative include first, self-starting behavior, which means that employees are actively pursuing a goal that is not prescribed by their role description, nor explicitly demanded. The

goal is unusual in the corresponding context and thus presupposes a high degree of mental effort to anticipate. Second, proactivity implies that employees can anticipate future demands and prepare in advance for how to cope with the expected opportunities and difficulties. Third, persistence is needed to achieve one's goal and to overcome the barriers to its realization.

Regarding how aspects of personal initiative affect the innovation process knowledge is still limited. Unsworth and Parker (2003) studied the relation between proactivity and innovation and suggested that, while a self-starting approach may be relevant for developing ideas, persistence and a change-oriented focus may be relevant for implementing them. In one of the few empirical studies of employees' innovations in the production unit of a manufacturing company, Veenendaal and Bondarouk (2015) found that production workers were generally able to contribute to the entire innovation process, but were particularly successful in contributing to the generation of ideas. In their study they draw on the conceptualization of innovation as a multi-stage process consisting of idea-generation, including opportunity exploration, idea-championing and idea realization (as in Scott and Bruce, 1994). Veenendaal and Bondarouk (2015) justify their finding that idea-championing and realization make social interaction and support from others more necessary than idea-generation. Similarly, another process-oriented study by Karlsson and Skalen (2015) found that innovation projects were most effective when employees were actively involved early in the process.

There is no empirical evidence of how facets of personal initiative relate to the different phases of the innovation process, but a few contributions suggest that proactive employee behavior constitutes a driver for innovation (Bindl and Parker, 2010, Unsworth and Parker, 2003). Relatedly, a few studies of employees' involvement in innovation indicate the need for phase-specific behavior (Axtell *et al.*, 2000, Veenendaal and Bondarouk, 2015), although this was not part of the core analysis of these papers. Personal initiative and individual innovation are related in the way they both aim to change a work situation (Parker and Collins, 2010). Individual innovation, however, emphasizes the novelty of ideas, whereas personal initiative, with its focus on a self-starting and problem-solving approach, emphasizes the implementation of ideas under less than favorable conditions (Frese and Fay, 2001).

The complexity of bottom-up eco-innovation

Eco-innovation can be defined as the "production, application or exploitation of a good, service, production process, and business method that is novel to the organization (developing or adopting it) and

which results, throughout its life cycle, in a reduction of environmental risk, pollution and the negative impacts of resource use compared to relevant alternatives" (Kemp and Pearson, 2007, p. 7). As such, eco-innovation refers to a range of innovations such as renewable energy technologies, pollution prevention schemes, waste-management equipment, eco-design products and the adoption of biological materials (Kemp, 2010).

According to Rennings (2000) there are three important characteristics that differentiate eco-innovation from conventional innovation and make eco-innovation highly complex and even ambiguous. First, the "double externality problem" concerns knowledge *and* environmental externalities. While innovation activities are generally incentivized by knowledge spill-overs, eco-innovations also entail the high costs of products and/or processes to reduce the negative environmental impacts and thus provide a disincentive to invest in them. Second and related to these externalities, Rennings (2000) argues that eco-innovations are not self-enforcing and hence need a regulatory support through for example environmental policy. Third, there is a need to pay attention to the ecological, social and economic impacts of eco-innovations such as the effect on employment. Moreover, it is maintained that the realization of eco-innovations requires extensive collaborative efforts with the organization's networks and external partners (Foxon and Andersen, 2009) and often the need to balance contradictory demands (Hall and Vredenburg, 2003). For example, eco-innovations often entail the replacement of components with eco-friendly alternatives, which might not be readily available or need adaption. Also, the development and implementation of eco-innovation is a complex process, as it requires specific knowledge and skills that can be different from the "traditional" knowledge already available (De Marchi, 2012). Representing a technological frontier, De Marchi (2012) argues that standards such as measures to evaluate the performance of eco-innovations do not yet exist. Accordingly, it remains difficult to assess the environmental benefit or value that may justify additional costs.

In such complex innovation settings, it is argued that the development of specific capabilities such as context-specific knowledge and user understanding are not sufficient (Buhl *et al.*, 2016). Employees who engage in such processes are required to take the initiative and to cope with uncertainty, inconveniences and the risk of failure (Buhl *et al.*, 2016, Chen *et al.*, 2012). Compared to conventional innovation processes, eco-innovation creates explicit paradoxical tensions that need to be taken into account, as corporate sustainability studies suggest (Hahn *et al.*, 2015). These tensions occur because successful eco-innovation requires financial and environmental value creation to be balanced in order to

align it with various stakeholder groups with contradictory demands (Hall and Vredenburg, 2003). This carries risks, such as a one-sided, overly narrow focus on the environmental benefits (Ottman *et al.*, 2006), which may eventually prevent the product from being mainstreamed and from creating market success at mass scale (Dangelico and Pujari, 2010). In the further course of action, when employees aim to champion and realize their innovative solutions (Veenendaal and Bondarouk, 2015), complexity grows, increasing the likelihood that employees need to overcome barriers, and with it the risk of their being discouraged from participating in eco-innovations (Buhl *et al.*, 2016).

The current debate on EDI follows the arguments of the rational choice approach (see for example expectancy theory in Vroom, 1964), which explains that a large number of barriers or low expectations can lead employees to abandon a desired goal. Thus, EDI can only reach its full potential if its contextual conditions are approving (Amundsen *et al.*, 2014). However, advocates of the action performance perspective argue that barriers do not necessarily lead employees to feel discouraged or to abandon their goal of innovating (e.g. Frese, 2008). Their argument is largely based on the Rubicon theory (Gollwitzer, 1993, Heckhausen and Kuhl, 1985), which states that, once an individual has formed an action plan, the intention to implement that plan and the effort to overcome barriers and reach one's goal are high. Concerning personal initiative, it has been argued that such behavior may be triggered especially when employees feel dissatisfied with the status quo and are motivated to set themselves a goal in order to overcome the anticipated barriers (Frese and Fay, 2001). Hence, as these authors maintain, employees would take the initiative to innovate without the experience of positive emotions such as satisfaction. Accordingly, the concept of intrinsic motivation does not enhance the understanding of personal initiative at work (Frese and Fay, 2001).

Using the notion of democratized innovation, the literature has taken steps to highlight the importance of a broader range of stakeholder involvement in the innovation process, including employees and their purposive involvement in innovation processes in both practice and theory. However, both generally and in relation to cases of complex innovation in particular, it remains unclear how employees actually initiate and drive such processes successfully.

Summary of central concepts

To conclude the literature review, we summarize the main concepts for the analysis. Point of departure is taken in the literature on EDI (e.g. Høyrup, 2010). Specifically, we address EDI in eco-innovation, a

setting that represents a complex innovation process and demands employees' proactive behavior (Buhl *et al.*, 2016). To understand the role of employees in complex innovation processes such as eco-innovation, this paper takes an active performance perspective (Frese, 2008) and views employees as active agents that can change the frame of action despite anticipated challenges (Virkkunen, 2006, Wrzesniewski and Dutton, 2001).

With its acceptance of employees' agency, the paper adds to the EDI literature because it broadens the scope of employees' contributions to complex innovation processes and does neither restrict their contributions to idea generation nor make them dependent on managerial guidance. To understand the role of employees in such processes, the concept of personal initiative (self-starting, proactive and persistent behaviors) (Frese and Fay, 2001, Frese *et al.*, 1997) is assumed central to the analysis of how employees engage in the phases of bottom-up eco-innovation processes.

Methods

Our qualitative case-study approach enables a holistic investigation to be conducted of individual-level processes and interactions. We follow eco-innovation processes that encompass the dynamic phases of idea-generation, idea-promotion and idea-realization (Scott and Bruce, 1994), as well as events that employees act upon. Looking at the process helps us to describe the dynamic nature of eco-innovation, thus allowing us to explore how the process is initiated, sustained and aided by personal initiative. As such, being a micro-level analysis, this study provides room for accounts of human dynamics that are important in innovation processes. The collection of contextual data from multiple sources fosters a greater understanding (Strauss and Corbin, 1998, Strauss, 1987). For instance, we were able to examine particular initiatives closely and to elucidate employees' actions, showing how these are linked to the eco-innovation process.

Case selection

Two environmental initiatives were selected as embedded cases in a focal company within the manufacturing sector. An embedded single case study offers the prospect of a broader analysis while having the advantage of providing rich insights into a single example (Yin, 2003). At the same time, using two embedded cases allows both inter- and intra-case comparisons. The company has almost

20,000 employees and is headquartered in Denmark. It has production and sales subsidiaries worldwide, and a few domestic production sites. The company has a good reputation for maintaining a high level of environmental performance and is a forerunner in organizational efforts to produce environmentally sustainable and energy-efficient products. Placed in a market with high environmental standards, there is great pressure to innovate. Thus, we anticipated that employees' awareness and participation in environmental efforts would be traceable. The two embedded cases, which we call the Motor and Pump Replacement Project (MPRP) and the Lubricants Project (LP), were selected on the basis of the following: (1) they were generated bottom-up; (2) they had been implemented; and (3) they demonstrated that they could create environmental improvements.

Data collection and data analysis

The study was carried out in 2016 over a period of five months. In order to validate the findings continuously, several sources of data were used, namely interviews, observation, e-mail correspondence and video calls with key informants, reviews of internal presentation materials, annual and sustainability reports, press releases, internal blogs and photos covering the environmental initiatives studied (see Appendix I). The informants were employees who were directly involved in the process of generating, championing or realizing the initiatives, and managers who directly or indirectly supported their employees' initiatives (see Appendix II). This multi-level approach allowed rich insights to be obtained into the underlying processes of employee perspectives (Wright and Nishii, 2007). We conducted and transcribed seventeen in-depth interviews from 30 to 60 minutes long (101 hours of material). Approximately forty hours of field observations provided insights into the production facilities, thus allowing a better understanding of the technical challenges and complexity of the initiatives. Observing the employees in their daily routines and their relations with both their colleagues and managers provided us with an impression of the enactment of environmental responsibility in an organizational reality.

The data analysis drew on the framework of Corley and Gioia (2004), illustrated stylistically in Figure 4. Regarding the employees, initial codes were assigned to the transcripts using codes such as "employee directly involved in eco-innovation"; "risk-taking"; and "strives to create long-term impact", and showing employees' actions in the environmental initiatives. The second round of coding comprised the interpretive codes, which were created by repeatedly revisiting the academic literature and the data. In this way, eight interpretative codes were created for employee behavior. Finally, on an aggregate level

the two codes "personal initiative" and "EDI in eco-initiatives" were deployed in a close relationship with the relevant literature. Regarding the organizational level, we identified perceived organizational challenges in the process of generating, championing and realizing the idea and developed appropriate codes accordingly.
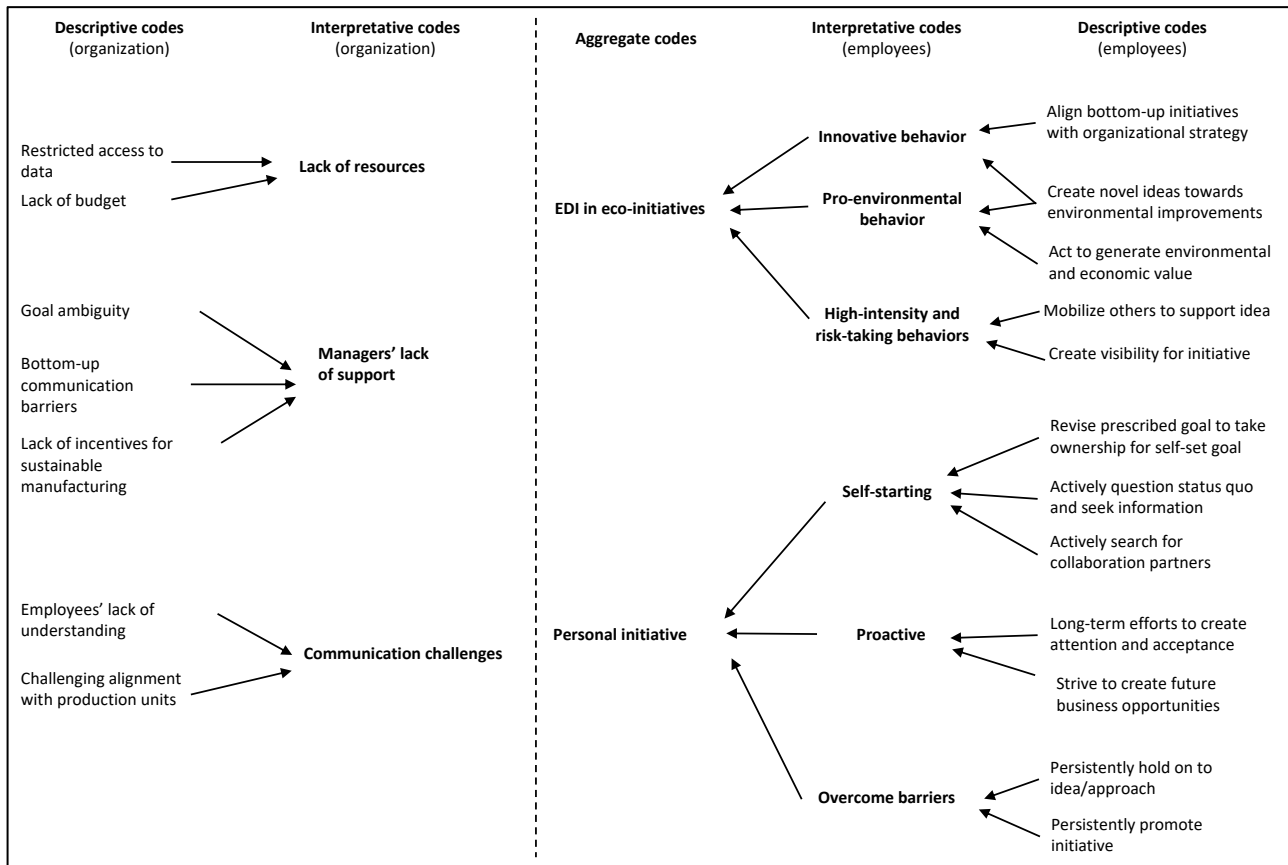
Figure 4. Coding scheme: descriptive codes, interpretative codes and aggregate codes

The coding procedure allowed us to move to the analysis, where we explored how the particular aspects of personal initiative relate to EDI in the innovation process in the two eco-initiatives. In addition, from the data it clearly appears that personal initiative was relevant in tackling the perceived organizational challenges throughout the eco-innovation process.

131

External validity

By means of this case study, we conceptualize the core dimensions of personal initiative in eco-innovation processes. Concepts are by their nature inherently concerned with general perspectives (Nørreklit *et al.*, 2016). As such, the notion of analytical generalization addresses the phenomenon of conceptual expansion. Whereas single case studies will not be generalizable to a population, they can be generalizable to either theoretical propositions (Yin, 2017) or theoretical understanding (Popay *et al.*, 1998). We make use of the "enfolding literature" to determine the fit with existing concepts (Eisenhardt, 1989), thus improving our ability to generalize from this single setting to theoretical understandings. A rich, in-depth analysis of two embedded cases, including the context of the chosen case, is also necessary (Kennedy, 1979, Stake, 1995), as it provides the reader with knowledge of the sites to which the method is being applied. In this way, a prior understanding is provided of whether it is reasonable for the reader to conclude that "generalization can, and cannot, be extended" to another setting (Payne and Williams, 2005, p. 310).

This is also explained as naturalistic generalization (Stake, 1995) which allows readers to apply depictions presented in single case studies to personal contexts so that, when rich descriptions are presented, "single case studies may prove to be more valuable to management practitioners than nomothetically oriented group studies because … group comparisons may not generalize to individual cases. It is these individual, single cases that practitioners must deal with on a day to day basis." (Luthans and Davis, 1982, p. 387). Thus, even if generalization depends on the replicability of findings, the judgement of generalizability for single case studies can be shifted to the reader or user of the case data rather than the producer of the case data (Kennedy, 1979). Thus, our concept of personal initiative in EDI processes provides us with an image that can be replicated in different contexts. We further discuss the usability and restrictions of the findings in the section on implications.

Findings

This section first presents case narratives of each eco-initiative to provide a rich insight into the innovation processes within each example. Then, we continue with a comparative analysis of the different cases to answer the research question.

The Motor and Pump Replacement Project (MPRP)

During 2011, this company's top management set a new environmental target not to emit more CO_2 than in 2008, while at the same time having ambitious growth targets. Two experienced mechanics, Martin and Tom, who work for the Danish production company decided to take on the task themselves: production should increase while at the same time energy consumption should decline. They redefined the goal as reducing energy by redesigning the production equipment and optimizing inefficient pump motors so that they consume as little as possible. While thinking about the challenges of redesigning the machinery, they also wondered how to make this initiative attractive in the longer term. Besides having the goal of saving energy and reducing CO_2 emissions in their own production, they also wanted the company to use their own products as a showcase for its customers and to create new business potential by selling not only pumps but also energy-efficient motors for pumps.

After about two years working to convince their managers of their idea, they persuaded the top management that their initiative was both environmentally and financially feasible. In fact, the initiative could contribute to an energy reduction of twenty percent in the Danish production company. Finally, the project was granted a sufficient budget to take implementation further. It also won attention from the global sustainability department, whose role is to push environmental initiatives to meet global strategic sustainability objectives.

Innovation process	Idea generation	Idea championing	Idea realization
Perceived challenges	• Goal ambiguity: long-term energy reduction versus short-term increase of pump sales	• Bottom-up communication barriers • Line managers' lack of incentives for sustainable manufacturing	• Lack of budget
EDI	• Employees develop a novel solution to reduce energy consumption in the production. • To create their idea they take the customers' perspective.	• They create attention and persuade others to support their idea. • They take the risk that their idea might be turned down.	• They integrate their idea in the production facilities.
SELF-STARTING	• Employees actively redefine the strategic goal and make it their own task. • They actively seek information and reflect upon alternative solutions.		
PROACTIVE		• Employees actively search for supporters and collaboration partners. • They anticipate customer demands, and showcase their idea to create managements' attention.	• They anticipate the importance of creating future business opportunities. • They continue to create positive attention through storytelling and showcases.
OVERCOMING BARRIERS		• They persistently and directly address decision-makers. • They maintain an ongoing dialogue with line managers and employees in affected units.	• They persistently hold on to their plan. • They cope with failures and setbacks.
Timeline	2008	2016 relaunch	2015 stopped ongoing 2017 planned

Prevalent facet of PI

Figure 5. Process overview: The Motor and Pump Replacement Project

Realizing the project's benefits locally, the sustainability department saw the potential to make the new energy-efficient motors successful globally and started to roll out the project in other European, Asian and North American subsidiaries. Although successful, the project ended in 2015 due to the company's financial difficulties. That same year the company was undergoing many organizational changes, including downsizing and the appointment of a new top management team. In 2016 the project team relaunched the initiative with the support of the global sustainability department, drawing up a new proposal and a detailed plan for a new global roll-out in the autumn of 2017. In Figure 5, the horizontal axis outlines the innovation process, while the vertical axis presents employee behavior associated with the innovation process.

The Lubricants Project (LP)

Back in 2013, Diana, a newly employed engineer, was asked to look at the cooling lubricants that were used in the production of pump parts to see if there was any potential for saving waste water. Saving water in the production process was a main strategic goal of the company's top management, yet the

134

results of taking measurements of how much water was wasted through the use of cooling lubricants were meagre.

In the event, waste water did not appear to be the actual problem. Instead, the engineer found that the waste resulting from the use of cooling lubricants mainly consisted of chemical substances. To verify this, she looked for support from interested colleagues with experience of chemical processes. In Paul she found a colleague willing and able to support her in the project's development, and her management approved his involvement. They started by redefining the project goal, since money would be saved not as a result of less water consumption but because of a reduction in the chemical waste. They formulated the project goal in terms of a reduction of eighty percent in the amount of cooling lubricants that ended up in the waste containers.

Now the team was confronted with different and sometimes outdated production equipment, for which they struggled to find sufficient data. After months of information collecting, observations and calculations, they came up with three different solutions to save lubricants in producing pump parts and thereby reducing chemical waste. Because of differences in the company's production equipment, several procedures suited to type of equipment were required: (1) equipment where it is possible to mount a timer to control the conveyer; (2) equipment where it is not possible to mount a timer but to which a tray can be attached to collect excessive lubricants for reuse; or (3) lowering the level of cooling lubricants. All suggestions were low-cost and could operate with the means currently available.

The team succeeded in implementing their idea on the local production site. However, despite the fact that they convinced the top management that the initiative was both financially feasible and a value-adding eco-initiative, and despite other European subsidiaries expressing an interest in the idea, the initiative was not extended globally. It appeared that the top management welcomed the team's effort to reduce chemical waste, but only on a small scale and at a low cost. The eco-initiative was not sufficiently prioritized because the top management's emphasis was clearly on water and not on the reduction of chemicals. The horizontal axis in Figure 6 outlines the innovation process, while the vertical axis presents employee behavior associated with the process.

Innovation process	Idea generation	Idea championing	Idea realization
Perceived challenges	• Goal ambiguity: Chemical waste reduction is an environmental goal but does not gain as much attention as energy and water.	• Restricted access to data on equipment • Lack of attention: Chemical waste is not perceived as an attractive environmental goal.	• Employees' lack of understanding • Challenging alignment with work flow in production units
EDI	• Employee develops a novel solution to reduce chemical waste in producing pump parts.	• As she changes focus she risks that her idea might be turned down. • She mobilizes others through workshops and meetings to gain support for her idea.	• Team rebuilds the equipment in the local production units.
SELF-STARTING	• She actively questions the managers' assumption and searches for information that points her to focus on chemicals instead. • She shifts focus and alters the goal and makes it her own task.		
PROACTIVE		• She actively searches for chemical experts to verify and strengthen her focus on chemicals. • Employees in affected factories are involved in planning as the team expects work flow disturbances.	• Team monitors the implementation. • As they strive to implement their idea in other subsidiaries they seek feedback to advance their solution.
OVERCOMING BARRIERS		• They are in continuous dialogue with the factories to receive relevant data. • Persistently they communicate with affected employees and inform about the changes.	• Team is in constant dialogue with affected employees to minimize work flow disturbances and enhance understanding. • Team holds on to plan despite challenges.
Timeline	2013		2017

(Left axis label: Prevalent facet of PI)

Figure 6. Process overview: The Lubricants Project

The next three findings shed light on the question: How employees use personal initiative in environmental initiatives?

Personal initiative in idea-generation

When the top management announced its strategic core ambition to keep carbon emissions constant, it remained unclear how this target could be met, and to the employees it appeared contradictory, as the level of production was set to increase. The two mechanics in the MPRP project who initiated the novel solution to decrease energy consumption were experienced in pumping equipment. They actively discussed and interpreted the communicated target and the company's situation in order to gain a better understanding. They searched for cues that would provide them with knowledge of how they could approach the task and noticed that the company was encouraging customers to save energy and to use more environmentally friendly pumps. They wondered whether this could be applied internally by replacing the old pumps in the production facilities.

> *"[Our company] tells our customers that forty per cent of the consumption used in pumps can be saved by changing to a newer, more environmentally friendly model. If you look around our own factories, why don't we do that ourselves?"* (Martin, MPRP).

Hence, the external task, which was broadly communicated by top management, quickly became a personal goal and internal task for the two employees, and they took ownership of it by actively redefining the problem and creating an action plan. In contrast, in the LP project an employee, Diana, was directly assigned the task of identifying ways of reducing waste water. She showed self-starting behavior by exploring the drilling process in order to gather information, and she actively questioned her managers' assumption that the reduction of waste water could result in major savings, figuring out instead that the wasting of chemical additives would be a more significant factor to examine. By collecting further data on the cooling lubricants, she departed from her prescribed task and redefined the task in order to develop her own plan, which resulted in reducing chemical waste.

> *"They had tried before to look into the savings concerning water because it's quite obvious that we are losing cooling lubricants into the small containers out there… I think the turning point in this project was…to focus on the chemical part because we had already looked into the water part".* (Diana, LP)

By not following her managers' expectations and main priorities, Diana took a risk but also ensured that her goal was in line with the firm's environmental strategy. In both cases, employees drove eco-innovation in the idea-generation phase, initiating and creating novel ideas directed towards environmental improvements beyond their prescribed job roles. They also ensured that their ideas were in line with the company's overall strategy and took the initial risk to create an idea that might be turned down. In both cases the employees actively redefined the organizational task and deviated from the prescribed task. The self-starting approach was found important in the idea-generation phase: to get the project started from the bottom up, to develop the project goal, to gather information and data to support goal development, and to find collaboration partners who were complementary in skills and knowledge.

Proactive and persistent behavior in idea-championing and realization
In championing these eco-initiatives, the employees proceeded systematically by creating attention and visibility for the project idea and persuading their managers to support it. For example, both project teams invested time and effort in communicating the initiatives' success stories in the internal employees'

magazine. In addition, having a market perspective and anticipating customers' needs was perceived as an important element in championing the idea; the project initiators, Tom and Martin, explained that they repeatedly took potential customers on a factory tour to demonstrate the positive effects of their initiative. Yet, championing the idea was also perceived as challenging and enduring, only being realized due to the employees' proactive behavior and their ability to recognize potential problems early on. Diana anticipated that, although the factories were generally positive regarding improvements, disturbances in their work flow would have to be tolerated while the necessary changes to the production equipment were implemented. Thus, Diana and her team were in constant dialogue with the factory workers, informing them about the changes so as to increase their understanding, as well as to gather knowledge about potential problems. The factories were involved in the planning so they could take the work flow into consideration and minimize conflicts with the employees' shifts.

> *"I think that* [we] *used quite a lot of time in the factory, and when we looked at the equipment*
> *we talked to the people down there. So they knew what was happening."* (Diana, LP)

While gathering data and drawings of the production equipment, Diana and her team were challenged when it came to obtaining accurate data from the factories. They persistently asked for the missing data, and when they made changes to old drawings, they asked the factory managers for feedback early on so as to be able to adjust the drawings. During the roll-out Diana's team were confronted with specific challenges regarding access to the production equipment and in achieving alignment with the factories' work flow, as well as more general challenges that related to the conflicting goals of meeting both economic and environmental needs. While acknowledging the priority of the business side, they held on to their plan.

> *"The main goal is to deliver pumps. We have a business going. But sometimes we also need*
> *to put some pressure on..."* (Paul, LP)

Hence, showing persistence and holding on to the project goal despite its challenges and conflicts with other goals appeared essential if the environmental initiatives were to be implemented, as the senior environmental project manager pointed out in relation to Paul, the team member in the LP project:

> *"If you say 'no' to Paul, he won't accept that. He will find another way to achieve what is a*
> *good idea. And I think you need that in the environmental projects because it's easy to say,*
> *'No, we don't have the time. We are focused on other things…' So the people who are in the*

138

organization make a difference when it comes to making a success, especially in the environment".

Similarly, in the MPRP project, the project initiators maintained an ongoing dialogue with the line managers and employees in the affected factories during the championing phase in order to increase the understanding and support for their initiative. In contrast to the LP project initiator, their long affiliation with the company helped them connect with influential sponsors and bypass the line managers, who are likely to hamper the initiative, as Martin noted:

> *"You need to have people who are capable of bypassing so you can actually address the managers who are asking for a reduction in the consumption. You need to have the scales to make it clear that if you don't do something different, it will never happen… if we didn't have the direct contact to* [our head of the sustainability group], *we would have to go through a lot of managers…and we would never succeed."*

Not only was proactive planning needed, but also persistence and endurance throughout the project, especially when championing the project idea and getting it implemented, as Tom, one of the project initiators of the MPRP project, maintained:

> *"At the organizational level, we are at the lowest end. That means that if we want to make things different it is really uphill. We have been running uphill since 2008 with this project…We are still pushing, pushing, pushing, discussing, discussing, discussing."* (Tom, MPRP)

The head of the sustainability group also acknowledged the need for this direct approach and persistent behavior, which convinced her to stand up for their initiative in front of top management.

> *"It all started when Martin and Tom thought this was such a great idea and they just kept bringing it up, and they found their way to my office as well. Because, if they had not been very stubborn and kept talking about this, it would probably never have happened."*

In both cases, proactivity and persistence were key elements in the idea-championing phase. In this phase in particular it was crucial to anticipate which challenges could potentially harm realization of the project and also to involve the employees and managers that were likely to be affected early on in the detailed planning. This enabled implementation to take place as a coordinated effort, as reflected in the LP project.

Persistent behavior, protecting one's own goals against disturbances and coping with failure and setbacks were all increasingly important at the point when the goal and the plan were communicated to

potential supporters, as well as to the factories affected by the changes. In both cases, the initiators were very much affected emotionally by the enduring process of championing their initiative.

Personal initiative to cope with organizational challenges

Lack of resources. In both projects, the respective groups of employees had to deal with a lack of resources. In the LP project, they specifically addressed the fact that the data on the production equipment they needed in order to plan the changes were insufficient and outdated. In the roll-out they experienced limited access to the production equipment where the changes should be implemented, which required much alignment with employees and managers. However, Diana and her project team anticipated these kinds of challenges and therefore invested time in being present in the factories and being in constant dialogue so they could react quickly when difficulties occurred and inform employees about the changes. Even after the project had officially been closed, they kept on monitoring the ongoing implementation to ensure its success.

> *"I think with this project, one of the success factors is that Paul* [team member] *is down there*
> *to check up on things."* (Diana, LP)

Diana had to deal with the fact that her project was not rolled out in other subsidiaries, although this would have supported the overall environmental strategy, which did not satisfy the head of the sustainability group either.

Conversely, despite having experienced resource scarcity and severe budget cuts that even forced them to stop the project for a year, the MPRP project continues globally. Compared to the LP project, we found that being a pair of innovators eases the championing of the project. In addition, the fact that energy reduction is one of the main strategic goals supports the promotion of the MPRP project. Yet, the initiators' persistent behavior throughout the process was a central project lever.

> *"If we hadn't continued pushing, pulling, pushing, pulling...if we had just sat down and*
> *waited, it would never have happened because it takes so much energy to make all that*
> *happen."* (Tom, MPRP)

Line Managers' lack of support. Specifically, in the MPRP project, the project initiators faced the challenge that the top management communicated the strategic environmental goals and set the targets such as the reduction of energy consumption, but did not provide the line managers with the necessary

budget to fulfill the targets and did not clearly communicate to the line managers that energy reduction initiatives needed promoting. Furthermore, managers in the production facilities were not measured in relation to environmental targets and had no incentives to contribute to minimizing the firm's environmental footprint. Pushing environmental initiatives forward was also perceived as challenging by the department:

> *"It is challenging for us because it's a money thing…The production manager, he doesn't really care. He likes productivity, and that's what drives him…"* (departmental head for quality and the environment)

The MPRP project team perceived the vast gap between themselves and the decision-makers as a barrier to the efficient implementation of their environmental initiative because they did not have the mandate to provide them with sufficient power to push implementation through, in spite of the fact that the line managers did not approve.

> *"If I have an argument with a leader…then he or she will consider who I am, and they will say: 'I don't know him. Who's his boss?' But that's not important. I am too far away from the top. If we were closer to the top management…then they* [the line managers] would *say:' I don't want to argue with him. I'd better listen to what he is saying…'"* (Tom, MPRP)

In addition, the project initiators found that important messages addressed to the top level were not communicated through the middle layers, which constituted a dilemma, as the top managers were interested in pursuing the initiative but could not support the initiators accordingly in the implementation, not knowing what challenges the project team was confronted with.

> *"I sometimes think that the top management should try to go out and see what works and what does not work... We have a lot of filters, a lot of different manager levels. So when we say we have a problem here, before it reaches the top it does not exist…the organization is absolutely a challenge."* (Martin, MPRP)

For that reason, the project initiators found an effective way of pushing the initiative through by using their tacit knowledge and existing network ties and addressing the project's sponsors directly.

> *"We communicate a lot directly* [with the decision-makers]. *We bypass all the filters, so they get the right information. But that's also mainly because Tom has been employed here for almost thirty years, and I have been here for 27 years. So we are not afraid of some managers*

who have been employed for a year or two... I think if you replace us with somebody else

...[then] *the project would be over and out in six months."* (Martin, MPRP)

Combined with their proactive and persistent behavior, we found this approach beneficial too for expanding the MPRP initiative, an advantage compared to the LP project initiator's lesser networking capacity.

Communication challenges. Communicating the changes to the affected employees in the production facilities was especially challenging for the LP team. Although the project initiators proactively involved many of the affected employees in the planning and informed the production facilities frequently through the line managers, they were not able to communicate face to face with all the employees. Thus, when monitoring implementation, they found that some employees neither understood nor accepted why the changes were important and did not follow the advised procedures.

> *"One of the changes was that they* [the production workers] *couldn't just turn the conveyer on to automatic to make it run all the time. But some of the people looking after the equipment and working in the production consider it best if the conveyer is running all the time. It's just a feeling they have. So how do you change that? […] I think we did quite a lot to inform them, but maybe it was not sufficient."* (Diana, LP)

Moreover, alignment with the production facilities and the responsible line managers was very necessary in planning and rolling out the changes to the production equipment. Specifically, the LP project team had problems in aligning the documents that were necessary for planning the changes to the machines and also the time schedule for the changes. In both cases, alignment was perceived as necessary for a successful roll-out, but it was also time-consuming and slowed down the idea-championing and realization.

Oriented towards the coding structure, Table 6 provides an overview of employees' behavior and the perceived challenges in the two cases studied.

Table 6. Employee behavior and perceived challenges in the two eco-initiatives

	Interpretive codes	MPRP-project	LP-project
Challenges	**Lack of resources**	• Lack of budget	• Restricted access to data
	Managers' lack of support	• Goal ambiguity: short term solution versus sustainable, quality-oriented solution • Lack of line managers' support	• Goal ambiguity: attractive goal versus less attractive goal
	Communication challenges	• Bottom-up communication barriers	• Employees' lack of understanding • Difficult alignment with production units
EDI	**Innovative behavior**	• Developing novel solution • Creating goal alignment with organizational strategy	• Developing of novel solution • Creating misalignment of redefined goal with organizational strategy
	Pro-environmental behavior	• Solution focuses on energy reduction	• Solution focuses on reduction of chemical waste
	High-intensity and risk-taking behavior	• Creating visibility through positive storytelling • Taking risks that managers will turn idea down (e.g. too expensive, no short-term wins)	• Creating visibility through ongoing presence in affected units and dialogue with affected employees • Taking risks by creating and selling an idea that is not on the managers' priority list
Personal initiative	**Self-starting**	• Redefining goal • Forming action plan	• Redefining goal • Forming action plan
	Proactive	• Seeking supporters/sponsors • Telling positive stories about successes • Seeking proactively feedback foremost from managers	• Seeking experts to legitimate idea • Involving affected units in initiative • Seeking proactively feedback foremost from units • Monitoring initiative's implementation
	Overcome barriers	• Seeking persistent dialogue with decision makers and interested units	• Seeking ongoing dialogue with affected units

Discussion and implications

Personal initiative in the individual phases of eco-innovation

The findings in this study demonstrate how employees show personal initiative throughout the innovation process and may become enablers of successful EDI activities. In fact, "employees do not just let life happen to them", as Grant and Ashford (2008, p. 4) emphasize; they take the initiative in eco-innovation processes, showing self-starting behavior and approaching the perceived challenges proactively and persistently when encountering them. While facets of personal initiative could co-occur, their prevalence varied in accordance with the inherent challenges the employees had to master. Thus, our findings

143

underpin the notion of phase-specific behavior (e.g. Veenendaal and Bondarouk, 2015). In both initiatives self-starting behavior was central in generating the employees' ideas, whereas proactivity and persistence were found to be prevalent in the championing and realization of ideas.

In respect to idea generation, the findings showed how employees were quick to set themselves a goal that appeared attractive despite the perceived challenges and to form an action plan for how to reach their goal and how to deal with the anticipated challenges. It appears that employees had formed an implementation intention (Gollwitzer, 1993) in the early stages of the innovation process that helped them to cope with and to overcome the perceived challenges in reaching their goals. The finding also supports the suggestion of Frese and Fay (2001) that, once employees have formed an implementation intention, EDI does not necessarily need to be reinforced by management, as the associated literature commonly assumes.

Employees' motives for self-starting an eco-innovation initiative may be triggered by two things. First, they perceive an opportunity to alter and enrich their job by taking on a task that provides meaning and the opportunity to take ownership of it, a finding that has been described as a basic motivation in the job-crafting approach (Wrzesniewski and Dutton, 2001). Second, employees' motivation may be strengthened by a sustainability-driven desire to innovate. It has been argued that eco-innovation naturally creates the positive attributes of a purpose- and commitment-oriented organization (Rangarajan and Rahm, 2011), which in turn triggers employees' wish to reciprocate (Jones, 2010). Drawing on the stewardship perspective, employees' approaches to environmental initiatives can be seen to be triggered by the motivation to act in a prosocial manner, providing collective goods to internal and external stakeholders who can benefit from the innovation in the long term (Hernandez, 2012, Davis *et al.*, 1997).

In the championing phase, our findings implied that employees' market orientation was decisive in bringing their initiative forward, a capability that has been considered critical in recent conceptual developments of EDI (Buhl *et al.*, 2016). Specifically, we found that employees' proactive issue-packaging, as described by Anderson and Bateman (2000), was supportive in reducing potential disturbances and setbacks. Hence, employees framed their initiatives as a highly relevant opportunity to improve the company's environmental performance and extending its business potential. In addition, they presented complex technical solutions in simple and positive messages that illustrated how the initiative is linked to the company's strategic goals, how it creates relevant impact and how it can be achieved. Then, in order to "sell" their initiative to decision-makers, employees used different influence

144

tactics (Yukl *et al.*, 1993), primarily in finding coalition partners and influential supporters to gain more authority and bypass unsupportive line managers. While the employees were in the process of communicating their idea, finding sponsors and persuading managers to support the initiative, they anticipated the risks associated with a lack of interest and support. Indeed, risk-taking is considered a necessary aspect of innovative behavior (Baer, 2012), and in the context of eco-initiatives the level of risk is likely to increase, since employees do not provide short-term gains and create less attention than innovation in other areas (Ramus and Steger, 2000). The anticipatory, change-oriented behavior seemed to help employees to predict future disturbances when planning integration into the production units, thus enabling them to detect problems early on and to plan how to manage them. This was perceived to ease the transition into integrating their idea into production in order to reduce the potential setbacks.

At the same time, in the championing phase EDI was found to be supported by a persistent dialogue that helped to draw attention to the initiatives. Notably, employees perceived line managers in particular as demonstrating a lack of attention to and support for eco-initiatives, making bottom-up communication an enduring process. As our findings revealed, one aspect preventing line managers from promoting eco-initiatives was the high level of risk, such as a lack of short-term profit generation (Ramus and Steger, 2000) and the risk of misaligning green products with customer expectations (Ottman *et al.*, 2006). Supporting such initiatives with unpredictable outcomes is perceived as less attractive, especially without the prospect of organizational acknowledgement (Ramus and Steger, 2000). Yet, our findings indicated that employees were able to handle the complexities that arose from future challenges, to show continuous persistence in attracting attention to their initiative, and to maintain an ongoing dialogue with those employees who would be affected by the changes caused by the respective eco-innovation.

In realizing and integrating the idea into the business, EDI was supported by proactive and persistent behavior. In particular, the striving for proactive feedback was perceived as important in increasing levels of consensus and alignment with the business and in advancing the initiative. Moreover, a continuous dialogue with the affected production units appeared to ensure that the initiative was realized, as employees handled disturbances and resistance through constant face-to-face communication as active listeners on several organizational levels, from the shop floor to the decision-makers. Active listening is important in effective communication and in establishing relationships and trust capable of leading to a proactive response (Brunner, 2008).

While the two embedded cases where similar concerning employees' behavior and the challenges employees faced when pursing the initiatives, they differed in the following three aspects.

Firstly, in the MPRP project two employees formed a dynamic team which took joint ownership, whereas in the LP project a single employee started to develop the idea. Being a pair of innovators eased the idea-generation and championing process, an observation shared by Halme *et al.* (2012).

Secondly, employees differed in respect to the knowledge they brought into the project. In the MPRP project, initiators were educated mechanics who were "bricoleur" types with a broad, versatile and detailed knowledge (Duymedjian and Rüling, 2010, p. 141), and an ability to overcome "functional fixedness", i.e. using an artifact for a different purpose than prescribed (German and Barrett, 2005, p. 1). Also, they had a much longer involvement in the company compared to the LP initiator, which presumably resulted in a high level of contextual, tacit knowledge. Such knowledge is crucial for EDI (Buhl *et al.*, 2016, Høyrup, 2010), as it stimulates the development of innovative ideas, and employees may identify potential that managers would not recognize to the same degree (Kesting and Parm Ulhøi, 2010). Also, in the same context, the project initiators of the MPRP project seemed to be equipped with a strong network that enabled them to cooperate across functional boundaries, to find influential sponsors and to access critical resources. As related research in entrepreneurship shows, the use of networks is crucial for the mobilization of resources and stakeholders (Di Domenico *et al.*, 2010). In contrast, perhaps due to her shorter affiliation to the company, the LP project initiator was not (yet) equipped with a strong network, hindering the allocation of support and resources.

Thirdly, the different scope of implementation of the two initiatives resulted, among other things, from their respective levels of attractiveness: whereas the LP project was aimed at chemical waste reduction, an important but less popular organizational goal, the MPRP project's goal of energy reduction was in line with the top management's own priorities.

Personal initiative in complex and ambiguous innovation processes
Our analysis of employees' behavior in the individual phases revealed that complexities and tensions increased from generating ideas and creating an action plan to when employees were about to implement their initiatives. In order to overcome the associated challenges, we found enduring proactivity and persistence to be indispensable behavioral aspects for implementation success. Earlier research acknowledged the positive impact of proactive behavior on reducing disturbances and enhancing

employees' performances (e.g. Parker, 1998, Wall *et al.*, 1992). Yet, it seems that in EDI research the ability of employees to apply these forms of behavior successfully beyond idea-generation are denied or at least treated skeptically (Veenendaal and Bondarouk, 2015). Clearly, our findings do not disregard employees' need for managerial and mutual support. However, unlike what the main EDI literature suggests, we propose that employees possess the ability to take ownership of small-scale innovations and to drive them to a great extent.

Personal initiative makes a particular contribution in more complex and ambiguous contexts. Contrary to the EDI literature, which implies that employees become discouraged when facing higher levels of complexity, we suggest that personal initiative can be triggered by complex settings, as it is driven by the desire of employees to change the frame of action, for example, if they are dissatisfied with a given status quo. This perspective relates to the concept of transformative agency (Virkkunen, 2006), which furthers the emphasis on employees' active agency. Thus, personal initiative entails anticipatory, problem-solving and change-oriented behavior, but also a readiness to take risks, which appears to be particularly relevant in ambiguous innovation settings, where conflicting goals do not provide a basis for solid sense-making processes or for the ability to control the situation.

Guided by the theoretical concepts, i.e. EDI and personal initiative, Table 7 provides an overview on how the main findings of this study relate to the discussed literature, both in terms of convergence and divergence from the literature.

Table 7. Linking the theoretical concepts, main findings and literature

Theoretical concepts	Main empirical findings	Relationship with discussed literature
Employee-driven innovation (EDI)	• Employees demonstrate the ability to take ownership of small-scale innovations throughout the innovation process and drive them to a great extent.	• The importance of employees' agency is emphasized in concepts as transformative agency (Virkkunen, 2006) and active job crafting (Wrzesniewski and Dutton, 2001). • So far employees' agency in innovation processes is overlooked in the literature (Bäckström and Bengtsson, 2019)
	• Employees use proactive issue-packaging. This may reduce potential setbacks from management.	• Agrees with Buhl *et al.* (2016) that finds those skills critical to champion an eco-initiative
	• Employees use different tactics to influence the management decision and win sponsors/supporters.	• Agrees with Yukl *et al.* (1993) that influences tactics are critical to innovation success.
	• Employees show risk-taking behavior throughout the innovation process.	• Agrees with Baer (2012) that risk-taking behavior is critical for innovative behavior.

Theoretical concepts	Main empirical findings	Relationship with discussed literature
	Considering the challenges, the risk to fail was assumed to be strong.	• Especially crucial in eco-innovation that has additional challenges such as lacking quick wins and management interest (Ramus, 2002).
Personal initiative (PI)	• PI is shown in two settings that constituted various and increasing challenges along the innovation process.	• Challenges common assumptions in the EDI literature, and promotes that PI is triggered when employees face higher levels of complexity (Frese, 2008, Frese and Fay, 2001) and to cope with challenges (Parker, 1998).
	• Facets of PI co-occurred, but their prevalence varied in accordance with the challenges the employees had to master.	• Agrees with Veenendaal and Bondarouk (2015) that phase-specific behavior exists and supports the need for a phase-specific analysis
	• Employees form an implementation intention in the early stages of the process, which helps them cope with the anticipated challenges to accomplish their initiative.	• Supports Frese and Fay (2001) that once employees have formed an intention to implement, management reinforcement is less important if at all. • Challenges the current EDI literature, which mainly focuses on top down guidance/passive strategies.
	• Employees show enduring proactivity and persistence to be indispensable behavioral aspects for initiatives' implementation success.	• Adds the importance of proactivity and persistence in EDI, specifically when championing and implementing an initiative.

Managerial implications

Even though this paper does not offer a normative contribution in itself, it remains relevant in particular to the realities of medium-sized and large companies being pressured by external and internal stakeholders to address environmental concerns through innovative solutions to enhance environmental performance. In such companies, the management's acknowledgement of the potential in employees being active job-crafters and taking initiatives is crucial because dedicated employees can realize value through bottom-up eco-innovations. Employees' personal initiatives might be needed even more in manufacturing companies with a greater environmental footprint than that observed, such as the automotive or oil industries, where eco-innovation efforts need to address different life-cycle stages such as energy consumption in order to create valuable and visible outcomes (Dangelico and Pujari, 2010).

Launching innovation projects should be spotted, and support can be targeted in each phase of the process without constraining employees' initiatives. Balancing between being open and monitoring employees' behavior is a challenging but critical management task (De Jong and Den Hartog, 2007, Mc Grath, 2001), which in a larger manufacturing company can be carried out at multiple management levels to make sure that personal initiative is not hampered. For example, our findings indicate that self-starting

behavior can decrease the complexity and ambiguity of an innovation process. Consequently, an important role for managers is to engage in creating and communicating a pro-initiative climate (Baer and Frese, 2001) in which trusting relationships and knowledge-sharing are valued (Hayton, 2005). At the same time, the encouragement and amplification of employees' self-starting behavior should be a central managerial focus.

Limitations and suggestions for future research

This study should be understood considering its limitations. One limitation of the study may be its empirical anchoring in a Scandinavian country, where, it is argued, there are distinct traditions of employee involvement. Thus, the Scandinavian practice of employee participation represents a convenient case for EDI (Amundsen *et al.*, 2014). However, in line with these authors, we argue that, although some features of EDI can be related to the Scandinavian model, they are rather general and should not diminish the possible value of the findings for other organizations in other regions. While the article provides a rich case study of how personal initiative is enacted in two environmental initiatives, this design has limitations that need to be considered in future research. Another limitation concerns the degree of scope determined by the restriction of the empirical material to one organization. A multiple case-study design including several companies is one option in assessing our findings, enabling the findings of the current paper to be validated, and strengthening our knowledge of how employees' phase-specific behavior may vary for different types of innovation.

Theoretically, our findings imply that the traditional managerial focus on how employees' innovative potential can be activated is limiting. Instead we posit that, in order to bring EDI research forward, integrating an active performance approach emphasizes employees as active agents that can change a given frame of action. We argue that the active performance approach provides a suitable framework for studying EDI because today's organizations are confronted with growing pressure and pace in developing and implementing eco-innovations; they can therefore benefit from a more inclusive understanding of employee roles in these processes. With personal initiative, the focus is on how employees take ownership of the process by proactively and persistently addressing the perceived challenges. Specifically, the implementation of eco-innovations is endangered when management support is not fully provided, meaning that personal initiative may compensate for the lack of encouragement and supports the implementation.

Conclusion

The aim of this study has been to elucidate how personal initiative advances bottom-up innovation success, specifically in complex and ambiguous eco-innovation processes. We have pursued this aim by investigating employees' behavior in two self-initiated eco-initiatives in a manufacturing company renowned for its eco-innovation success. We identified personal initiative to be a critical success factor for EDI in mastering environmental initiatives. Focusing on the individual aspects of personal initiative, our findings reinforce the need for phase-specific behavior. While personal initiative was revealed throughout the eco-innovation process, its significance changed according to the various demands of the individual phases of innovation. Moreover, employees were found to be motivated to start initiatives themselves despite anticipating challenges and tensions, to set themselves goals quickly, and to create an implementation plan that helped them overcome the anticipated challenges. We suggest that the concept of personal initiative is particularly suited to complex and ambiguous contexts of innovation. With personal initiatives, the scope for EDI is broadened by making complex and ambiguous innovation processes feasible for employees. Thus, integrating personal initiative into the concept of EDI changes the perspective of employees' innovation efforts from an economic, rationale view of how to activate or optimize their contributions towards an active performance view of how employees themselves can craft innovation if organizations provide the room for them to do so.

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Appendix

Appendix I: Overview of collected data

Case	Field notes	Internal documents (presentations, memos, photos)	Interview transcriptions
MPRP	Ca. 46 pages	14 pages presentation material	47 pages
LP	Ca. 40 pages	13 pages presentation material	30 pages
Concerning both projects		55 pages presentation material	24 pages
Overall	Ca. 86 pages	Ca. 195 pages; hereof ca. 82 pages internal presentation material, 103 pages reports and CEO blog entries, 10 photos	101 pages

Appendix II: Informants of cases

Respondent title	Case and role	Interview and other dates
Senior mechanic (Martin)	MPRP, project initiator	16 May 2016 interview 30 May 2016 follow-up interview, factory tour
Senior mechanic (Tom)	MPRP, project initiator	16 May 2016 interview 30 May 2016 follow-up interview, factory tour
Engineer (Diana)	LP, project initiator	19 July 2016 interview, project presentation, factory tour
Technician (Clemens)	MPRP, team member	30 May 2016 interview
Technician (Magnus)	MPRP, team member	30 May 2016 interview
Mechanic (Tim)	MPRP, team member	30 May 2016 interview
Senior technician (Paul)	LP, team member	5 January 2016 interview, 19 July factory tour
Senior environmental project manager, group sustainability	Project coordination and support	5 January 2016 interview
Department Head for quality and environment	Project support	05 January 2016 interview, 14 June follow-up interview
Senior manager for quality and environment	Member of steering committee	05 January 2016 interview
Head of Group Sustainability	Sustainability Projects sponsor	13 June 2016 interview, follow-up e-mail correspondence
Environmental project manager, group sustainability	Project coordination and support	16 October 2015 – 16 May 2016 three interviews, e-mail correspondence

CHAPTER 7: DISCUSSION AND CONCLUSION

In this chapter, the overall contribution of this dissertation and the contributions of the individual papers are summarized, followed by the implications of the dissertation for research in the field of green HRM and for practitioners who are confronted with the task of designing and/or implementing HR practices that link to their organizations' environmental sustainability strategies. Next, critical reflections on the findings are included, and recommendations for future research are outlined.

Individual paper and overall contributions

The first paper, "The Espoused Versus Enacted Role of HRM in Supporting Environmental Initiatives" (Chapter 4), examines how the enacted role of green HRM relates to the role that has been prescribed in the literature. Indeed, the prescribed role of green HRM has to do with the formalization, positioning and alignment of green HRM with the business strategy and other related business functions (Jabbour & Santos, 2008; Jackson & Seo, 2010). Still, empirical evidence of the prescribed role is rather limited and inconclusive (Harris & Tregidga, 2011; Zibarras & Coan, 2015), and research has shown a potential disparity between the intended (i.e., prescribed) role and the actual (i.e., enacted) role of HRM (e.g. Piening, Baluch, & Ridder, 2014). The present study in five Danish companies shows that particular HR practices are employed to support environmental sustainability goals, but contrary to what is prescribed, the enacted role of green HRM appears to be implicit, dispersed and substituted by national and organizational values that warrant employees' commitment to an organization's environmental sustainability goals. The findings imply that the prescribed role of HRM in supporting environmental sustainability may not be relevant in the same manner for all organizations and instead may be context dependent. Specifically, the paper argues that formalized green HRM systems might be less relevant in a Scandinavian working culture shaped by a trusting and participatory management style, as well as a strong reliance on heritage and values. Such cultural characteristics are assumed to lead to a generally more decentralized HRM system (Brandl, Madsen, & Madsen, 2009). Consequently, this paper contributes to the development of the green HRM concept by elucidating the gap between the prescribed and the actual role of green HRM, and by pointing out alternative strategies for HRM to contribute successfully to environmental sustainability goal achievement.

The second paper, "The Untapped Opportunity for Green HRM as a Catalyst for Meaningful Work" (Chapter 5), explores how the employees involved in environmental initiatives perceive and interpret implemented green HR practices, as well as what potential consequences these perceptions and interpretations may have for employee behavior. Employees' perceptions of implemented HRM have been highlighted as an important proximal predictor of employee attitudes and behavior (Khilji & Wang, 2006). Drawing on Bowen and Ostroff (2004) as well as Nishii, Lepak, and Schneider (2008), who have emphasized the underlying processes that impact the HRM and performance relationship, this paper emphasizes the important role of green HR practices in communicating the organization's commitment to environmental sustainability to employees. The paper's findings show that employees perceive the signals sent through green HR practices as ambiguous. On the one hand, they interpret them as the organization's commitment to the environment, and on the other hand, they interpret it as the organization's prioritization of economic interests. The findings imply that it is crucial to know how employees perceive and interpret green HR practices, as they are likely to influence employee behavior concerning environmental sustainability. Moreover, if effectively steered, green HR practices may serve as a catalyst for meaningful work.

The third paper, "Democratizing the Innovation Process – Personal Initiative in Employee-Driven Eco-Innovation" (Chapter 6), investigates employees' behavior in initiating, championing and implementing bottom-up environmental initiatives, as well as the perceived organizational challenges that come with this process. Employee-driven innovation has become an increasingly important topic in current organizations due to changes that demand a faster innovation rate and employees' active contribution (Buhl, Blazejewski, & Dittmer, 2016). Nonetheless, thus far, this research primarily emphasizes the need for managerial top-down guidance to develop employees' capabilities, which will enable them to contribute to organizational goals. The research thus underestimates employees' ability to initiate and steer complex innovation projects even without managerial guidance (Holman et al., 2012). By integrating an active performance perspective, the paper highlights the need to broaden employees' scope of action as well as the need to trust in employees' ability to steer complex innovation projects even without top-down guidance. For HRM practice, the findings imply that HRM can help to build an organizational culture that provides more autonomy for employees, encourages employees to take initiative and tolerates failure. Research in green HRM can benefit from an active performance view and from seeing employees as active agents in creating, sustaining and advancing environmental performance

without being activated or incentivized. Table 8 summarizes the research aims, methods, key findings and contributions of the three papers that are included in the dissertation.

Table 8 Overview on the three papers of the dissertation

	Paper 1	Paper 2	Paper 3
Research focus	Espoused versus enacted role of green HRM	Perceived role of green HRM	Employee behavior in environmental initiatives
Research question	What is the relationship between the espoused role of HRM in supporting environmental initiatives and the enacted HR practices used to suppor these initiatives?	How do employees perceive and interpret implemented green HR practices, and how do employees' perceptions and attributions potentially impact their involvement in environmental initiatives?	How does personal initiative advance bottom-up innovation success and aid employees in overcoming the inherent complexities?
Method and setting	Qualitative interviews in five mostly large companies in Denmark	Qualitative interviews in large manufacturing company in Denmark	Single case study with two embedded cases in large manufacturing company in Denmark
Primary data	Interviews with HR and environmental managers	Interviews with employees	• Interviews with involved employees and supporting managers • Observations
Key findings	• Gap between enacted and espoused role of green HRM • Enacted role of green HRM implicit, dispersed and substituted by national and organizational values	• Ambiguous perceptions and attributions of HR signals: green matters versus masking reality • However perceived relevance of green HR practices	• Employees show personal initiative, i.e. self-starting, proactive and persistent behavior in all phases of the eco-innovation process • Individual agency even when faced with ambiguity and constraints
Key contribution	• Integration of national and organizational context • Role of green HRM may be context dependent • Alternative strategies/roles for HRM to contribute to environmental sustainability	• Integration of HRM process approach to green HRM • Crucial role of green HRM as means to communicate environmental sustainability goals to employees • Potentially important role of green HRM as catalyst for meaningful work	• Integration of active performance perspective • Personal initiative important behavior to succeed in complex innovation processes such as environmental initiatives
Status	Presented at AOM 2019; in preparation for target journal	Accepted for BAM 2019; in preparation for target journal	Accepted for publication in European Journal for Innovation management

Overall, the dissertation contributes to green HRM research by providing a qualitative, more in-depth understanding of the role of HRM in environmental sustainability that has been argued to still be in its infancy (Dumont, Shen, & Deng, 2017). More specifically, the dissertation contributes in the

following ways: First, by focusing on the identified gap between the intended and the implemented role of HR as perceived by HR and sustainability managers, the findings indicate that the implemented role of HRM may be highly relevant but in different ways than what has been prescribed in the literature. Second, the dissertation contributes to the academic discussion on the role of HRM as an employee advocate by focusing on the employment relationship, which Van Buren, Greenwood, and Sheehan (2011) have brought attention to. Specifically, the integration of the process approach (Bowen & Ostroff, 2004) in green HRM has highlighted the crucial role of HRM as a communication mechanism in environmental sustainability goal achievement. Third, by emphasizing the influence of the national context and organizational values, the dissertation contributes to the academic discussion on the need for a contextualized HRM approach (Jackson, Schuler, & Jiang, 2014) and a differentiated understanding of the role of green HRM. Finally, by incorporating an active performance perspective on employees' behavior, the dissertation contributes to the academic debate on the adequacy of traditional performance models for modern workplaces (Frese, 2008) and highlights the need for organizations to grant employees more leeway and a greater scope of action. The findings demonstrate employees' individual ability to create and change job tasks, to take ownership and risks, and to steer through even complex and challenging demands.

Theoretical implications

The studies' findings have important theoretical implications for HRM research that focuses on the contribution to organizational environmental performance and environmental sustainability. First, the role of HRM in environmental sustainability is suggested to be complex and to lead to paradoxical tensions. Such role tensions have been argued to be common when HRM aspires and is expected to add value to strategic business goals (Sheehan, De Cieri, Greenwood, & Van Buren, 2014; Van Buren et al., 2011). Even more tensions are expected to be dealt with when organizations strive to achieve environmental sustainability goals (Hahn, Pinkse, Preuss, & Figge, 2015). Findings from the empirical studies presented in this dissertation show that HR professionals are confronted with ambiguous goals when designing and implementing green HR practices, such as developing employees' awareness of the need to engage in long-term-oriented environmental preservation efforts while also maintaining employees' performance for economic growth. This ambiguity has been demonstrated throughout the papers but is specifically reflected in employees' perceptions of green HR practices (paper two) and in

employees' self-initiating behavior in environmental initiatives (paper three). According to Jackson and Seo (2010), complexity presents an important barrier to the serious involvement of HRM in environmental sustainability. Thus, for the purpose of advancing the involvement of HRM in environmental sustainability, it has been argued that it is critical to acknowledge the inherent tensions in HRM and sustainability and to integrate a paradox perspective (Guerci & Carollo, 2016). By taking HR managers' tensions into account during the greening of the HRM system, Guerci and Carollo (2016) presented a more realistic picture of HR managers' reality. Considering the studies' findings and the benefits arising from taking a paradox perspective—for example, seeing tensions as a source of learning and innovation (Kolk & Perego, 2014)—it is suggested that this theoretical lens be explicitly integrated in green HRM research. This integration would potentially advance knowledge about HRM's contribution to environmental sustainability—knowledge that better depicts the current reality of organizations in their endeavor to create sustainable and green HRM systems as a means to promote engagement for environmental sustainability goal achievement. Moreover, the paradox lens provides valuable input for HRM scholars to refine theoretical approaches to HRM research (Putnam, Myers, & Gailliard, 2014), such as focusing on the ability of organizational actors (i.e., employees and managers) to cope with tensions as an important organizational capability (Hahn, Preuss, Pinkse, & Figge, 2014).

Second, the studies' findings imply, however, that for one to gain credibility as an advocate of environmental sustainability, it is not only important for HRM to position and align itself well with the environmental sustainability goals but also it is important to focus on the employment relationship and to play a positive role in responding to employees' needs. Thus, as Van Buren et al. (2011) suggest, HRM research needs to focus on managerial as well as employees' concerns to be perceived as legitimate among all stakeholder groups, which was emphasized by taking the employee perspective in paper two. Indeed, in paper two, employees' ambiguous perceptions of the signals sent through the green HR practices indicate the struggle that HR professionals face when aiming to balance the paradoxical needs of top management (i.e., employees' performance for economic growth) with those of employees (i.e., employees' personal development and wellbeing). Such ambiguous perceptions may weaken the impact of these practices on desired outcomes (Choi & Lee, 2013). Therefore, it is suggested to integrate the HRM process approach to gain insight into the underlying psychological processes related to how organizational actors experience implemented green HR practices to understand how such perceptions of green HR practices can develop and what subsequent attitudinal and behavioral consequences can be

expected (Dumont et al., 2017). In addition, the findings suggest the importance of linking the concepts of HRM strength (the "how") and HR attributions (the "why") as Sanders and Yang (2016) propose, as the combination of both approaches can foster an understanding of the relationship between perceived green HR signals and the individual's ability to create unambiguous attributions regarding the purpose of green HR practices and environmental sustainability goals.

Third—in line with the plea to refocus on the employment relationship, and in relation to the soft approach to HRM, where "employees are seen as creative, proactive and worthy of development" (Van Buren et al., 2011, p. 1)—the findings suggest broadening the scope of employees' potential contribution to environmental sustainability. Specifically, paper three, which adopts an active performance perspective (Frese, 2008; Frese & Fay, 2001), highlights the important role of employees as active change agents, a role that is increasingly important in organizations that are pressured to achieve superior economic and environmental performance. Similarly, concepts such as transformative agency (Virkkunen, 2006) and active job crafting (Wrzesniewski & Dutton, 2001) gain importance and challenge the traditional job concepts by assuming that job tasks are not static but can be modified by individual employees. Such active job crafting is assumed to have positive effects on the meaningfulness of work to individuals and individuals' work identities (Wrzesniewski & Dutton, 2001). Thus, it is proposed, even in complex and ambiguous settings, that one not restrict the investigation of employees' behavior to managers' views regarding job characteristics and employees' capabilities. Instead, it is necessary to take employees' viewpoints into account and to examine their actions.

Finally, the studies' findings imply that contextual factors impact the role of green HRM and employees' behavior toward environmental sustainability. Specifically, the implicit and dispersed role of green HRM found in the studied Danish companies (paper one) has been explained as being shaped by national culture and organizational values to some extent. Indeed, the lack of a formal role of HRM may be more pronounced in the Scandinavian context (Brandl et al., 2009). Also, the personal initiative that employees continuously showed in their environmental projects despite perceived constraints (paper three) may be more prevalent in the Scandinavian context, as it has been argued that Scandinavian organizations have distinct traditions of employee involvement (Grenness, 2003). Given these findings, it is proposed that contextual factors need to be taken into account—and in particular, cultural and institutional factors—when examining the role of green HRM, as they have been argued to shape and alter green HR practices (Haddock-Millar, Sanyal, & Müller-Camen, 2016), as well as impact the green

HRM and environmental sustainability relationship (Jackson & Seo, 2010). If this is done, the importance of not only studying the internal alignment of HRM systems will be highlighted, and so will the alignment of HRM with the external context.

Practical implications

The studies' findings are relevant to practitioners working in HRM or related fields in several ways. Primarily, the findings suggest that the contribution of HRM to environmental sustainability, which constitutes an increasingly important strategic goal for many organizations, provides opportunities for developing and strengthening the role of HRM. An important step in this direction can be that HRM assumes the role of a collaborator, that is, HR professionals become involved in the co-creation, development and implementation of green HR practices together with the environmental management or environmental sustainability department. When assuming this role, HR professionals would need to leave their silos and work across functional and perhaps organizational boundaries as Jackson and Seo (2010) propose. Findings from the first study in the dissertation indicate that in developing such a collaboration, an organization can learn from existing customer co-creation approaches, an observation that is reinforced in the literature (Ramaswamy & Gouillart, 2010). In a collaborator role, HRM has the opportunity to broaden their scope of action, increase their expertise and enhance their position/standing in the organization.

A second approach to developing the role of green HRM can be that HR professionals identify ways in which to promote the role as a value mediator. Consequently, HRM would have a more indirect, symbolic role in supporting the creation of an organizational culture that values environmental preservation through communicating the desired cultural values and norms to employees. This is a role that Jackson et al. (2014) argue is equally important. In this way, HRM may influence employees' personal values as well as their attitudes and behavior regarding environmental sustainability. Employees may then perceive that environmental initiatives matter and that the organization commits to long-term environmental preservation and cares for employees' wellbeing, development and engagement as shown in the second empirical study.

A third approach to developing the role of green HRM can be that HR professionals seek the opportunity to facilitate employees' desire for meaningful work. This means that HR professionals would need to pay particular attention to how they convey important messages about the organization's goals

to employees—for example, about the organization's commitment to reducing waste in the production process. When conveying such messages to employees, HR professionals would need to communicate consistently and in a clear and authentic way, as described in paper two of the dissertation. In doing so, employees are likely to perceive the signals that HRM sends as relevant. Consequently, drawing on a study from Jones (2010), employees are likely to perceive environmental sustainability goals as meaningful and will be expected to reciprocate and engage in initiatives that contribute to environmental sustainability goals. Research has pointed out that unambiguous communication is crucial for preventing sustainability from being seen as "window dressing" (Royle, 2005) and for avoiding undesirable sensemaking processes related to the purpose of green HRM and organizational intentions (Dumont et al., 2017). Thus, it is suggested that HR professionals investigate how employees perceive HRM signals to obtain valuable feedback about the quality and strength of the HR signals. In that way, HR professionals can enhance their expertise in communicating environmental sustainability goals and employees' potential contributions as meaningful, and this can evoke employees' desire to contribute to such goals. Table 9 provides an overview of the potential roles of HRM in environmental sustainability, their potential benefits and how these could be accomplished.

Finally, findings from paper three indicate that employees' personal initiative in environmental initiatives is sparked by the perceived complexity of the endeavor. This implies for HRM the need to balance being open and providing space for employees' innovative ideas to develop, as well as to trust in employees' abilities and also control and guide employees' behavior. To encourage employees to take initiative, HRM can create and communicate a pro-initiative climate (Baer & Frese, 2001). Although this balance between being open and control might be a challenging task for HRM, it can be critical to employees' success (De Jong and Den Hartog, 2007, Mcgrath, 2001), specifically in projects that demand employees' innovative, self-starting, proactive and persistent behavior. Moreover, it is suggested that HRM transition from the traditional job design thinking, where employees are deemed resources that need to be developed, guided and incentivized, toward an active performance approach that views employees as active architects of their job tasks (Frese, 2008). Furthermore, the findings indicate that employees need targeted support relating to the specific challenges encountered along the process of developing and implementing environmental initiatives.

Table 9 Potential roles for HRM in environmental sustainability

HRM roles in environmental sustainability (ES)	Potential benefits for HRM	Potential benefits for organization	How
Collaborator	Credibility, visibility for HRM	Enhanced environmental performance	Cut across boundaries, abandon silo thinking
	Learning and innovation		Learn from customer co-creation approaches
Value mediator	HR perception as "cultural champion"	Employees' commitment and engagement for ES goals	Communicate organisational values consistently in clear and open ways through various channels
	Authenticity of HR professionals		HR professionals need to reflect on personal and organisational values
Catalyst for meaningful work	HR perception as "employee advocate"	Employees' perceptions of purpose-driven organization	Identifying employees' needs for purpose-driven tasks
		Prevent employees' negative perceptions of organizations' ES goals as "window-dressing"	Facilitate and steer employees' desire for meaningful work
		Employees' commitment and engagement for ES goals	Dosed provision of incentives for employees

Limitations and avenues for future research

Linking green HR perceptions to employees' behavior: Although paper two examines employees' perceptions of green HR practices, which provides knowledge of the potential impact on employees' behavior regarding environmental sustainability goals, paper three investigates employees' behavior in environmental initiatives that aim to contribute to environmental sustainability goals. Still, the empirical papers did not explicitly link employees' green HR perceptions to their behavior. Investigating this link is, however, relevant, particularly because prior research has demonstrated a relation between HR perceptions and innovative behavior (Sanders & Yang, 2016). In addition, innovative behavior shares many commonalities with personal initiative[9]. In particular, Sanders and Yang (2016) link HRM strength

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[9] Innovative behavior and personal initiative have been argued to complement each other: Although innovative behavior highlights the creation of new ideas, personal initiative emphasizes the implementation of new ideas (Frese & Fay, 2001). Moreover, innovative behavior and personal initiative share common behavioral facets, such as risk-taking behavior (Baer,

to innovative behavior and found that if employees perceive HR signals as strong (i.e., highly distinctive, consistent and consensual) and thus as intended by management, this stimulates employees' innovative behavior. Accordingly, it is proposed that green HR perceptions may influence behavioral patterns. Contrary to Sanders and Yang (2016), the findings from the dissertation suggest that facets of personal initiative may be encouraged when HR signals are not perceived as entirely strong or even ambiguous. This suggestion is derived from the assumption grounded in the active performance perspective—that perceived barriers, such as ambiguous HR perceptions, do not inevitably lead employees to abandon their goal of implementing their innovative ideas (Frese & Fay, 2001). Instead, if employees feel dissatisfied with the status quo, they may intend to overcome these perceived barriers and make efforts to change the status quo (Gollwitzer, 1993).

Addressing paradoxical tensions: The empirical studies of the dissertation have referred to the paradoxical tensions that HR professionals may face when designing and implementing green HR practices (paper two), and that top managers face when implementing the environmental sustainability strategy (paper three). However, these studies have not examined how these tensions interrelate and how they impact employees' perceptions of green HR practices and employees' behavior related to environmental sustainability. For future research, it is therefore recommended to follow the argumentation of Aust, Brandl, and Keegan (2015) as well as the implications of Guerci and Carollo (2016) and to apply a paradox perspective to further investigate these paradoxical tensions. Clarifying the impact of the perceived paradoxical tensions contributes to the academic debate on providing a more realistic picture of current organizational life (Jackson et al., 2014). More specifically, this debate addresses the need to shift toward a more flexible and agile organization that broadens the job concept and that allows employees to take initiative beyond their prescribed tasks to proactively contribute to organizational goals (Boswell, 2006).

Conducting longitudinal studies to capture the dynamic nature of green HRM. The empirical studies of the dissertation are of a cross-sectional nature as is the case with many studies in the field of green HRM (Shen, Dumont, & Deng, 2016), with few exceptions (e.g. Wagner, 2011, 2013). However, cross-sectional studies cannot capture the dynamic nature and temporal aspect of the HRM and performance relationship (i.e., the implementation of HRM systems changes employees' attitudes and

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2012), which is especially relevant when one is creating environmental initiatives that carry a high level of risk of failure (Ramus & Steger, 2000).

behavior, which, in turn, alters organizational performance as the changes unfold over time) (Piening et al., 2014). In recent studies, the need to capture how, when and why green HR practices affect employee- and organizational-level outcomes has been recognized, and there has been an increased call for a longitudinal perspective on green HRM (Dumont et al., 2017; Shen et al., 2016). Thus, to contribute to advancing knowledge in green HRM, future research should use longitudinal studies to examine the role of green HRM.

Conducting multi-level studies to capture the complexity of green HRM systems. Although the empirical studies of the dissertation take organizational-level factors, such as the national and organizational contexts, into account, the examined outcomes are on the micro/individual level (i.e., managers' perceptions, employees' perceptions, employee behavior). Currently, few scholars have performed a multilevel analysis of green HRM research, and it appears that these contributions mainly come from organizational psychology scholars when they are investigating employee green behavior (e.g. Bissing-Olson, Fielding, & Iyer, 2015). However, given the complexity of HRM systems, that is shaped by market dynamics and stakeholder demands (Paauwe & Boon, 2018). the need exists to integrate macro- and micro-level analysis and to take individual- and organizational-level outcomes into account (Shen et al., 2016). Along with the acknowledgment of the need to conduct multilevel studies in the green HRM research field (Dumont et al., 2017), future research should explore the relationship between green HR practices and employees' behavior at both the employee and organizational levels.

Conclusion

The dissertation addresses the increased focus on the role of HRM in supporting the organizational achievement of environmental sustainability goals. Most of the literature remains normative, and empirical evidence regarding the actual role of HRM in environmental sustainability is somewhat inconclusive or mixed and predominantly quantitative. The general aim of the dissertation was to clarify the actual and perceived role of HRM in supporting environmental sustainability goal achievement and how this role is enacted. For the purpose of addressing this aim, a series of qualitative studies were designed and conducted at companies known for their environmental reputations. Overall, these studies show that the actual and perceived roles of HRM differ from what is prescribed in the literature and that employees can play a far more active role in contributing to environmental goal achievement than so far acknowledged in the respective literature. The findings suggest that despite the identified gap between

the actual and the prescribed role of HRM, the involvement of HRM in environmental sustainability provides new opportunities for developing the role of HRM. Moreover, the findings imply that HRM can function as an important means of communicating an organization's environmental sustainability goals and thus may impact employees' commitment to contributing to these goals. Finally, the findings suggest that HRM needs to move toward active performance thinking, where employees are encouraged to take initiative, and such an individual agency seems particularly important in organizations that strive to build environmentally sustainable organizations.

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This declaration concerns the following article/manuscript:

Title:	The espoused versus enacted role of HRM in supporting environmental initiatives
Authors:	Josefine Weigt-Rohrbeck, Frances Jørgensen

The article/manuscript is: Published ☐ Accepted ☐ Submitted ☒ In preparation ☐

If published, state full reference: *AOM 2019*

If accepted or submitted, state journal:

Has the article/manuscript previously been used in other PhD or doctoral dissertations?

No x Yes ☐ If yes, give details:

The PhD student has contributed to the elements of this article/manuscript as follows:
- A. Has essentially done all the work
- B. Major contribution
- C. Equal contribution
- D. Minor contribution
- E. Not relevant

Element	Extent (A-E)
1. Formulation/identification of the scientific problem	A
2. Planning of the experiments/methodology design and development	A
3. Involvement in the experimental work/clinical studies/data collection	A
4. Interpretation of the results	A
5. Writing of the first draft of the manuscript	B
6. Finalization of the manuscript and submission	B

Signatures of the co-authors

Date	Name	Signature
07/05/19	Frances Jørgensen	

In case of further co-authors please attach appendix

Date: *10/05/19*

Signature of the PhD student

*As per policy the co-author statement will be published with the dissertation.

Declaration of co-authorship*

Full name of the PhD student: Josefine Weigt-Rohrbeck

This declaration concerns the following article/manuscript:

Title:	Democratizing innovation processes – personal initiative in bottom-up eco-innovation
Authors:	Josefine Weigt-Rohrbeck, Mai S. Linneberg

The article/manuscript is: Published ☐ Accepted ☐ Submitted X In preparation ☐

If published, state full reference:

If accepted or submitted, state journal: *European Journal of Innovation Management*

Has the article/manuscript previously been used in other PhD or doctoral dissertations?

No X Yes ☐ If yes, give details:

The PhD student has contributed to the elements of this article/manuscript as follows:
- A. Has essentially done all the work
- B. Major contribution
- C. Equal contribution
- D. Minor contribution
- E. Not relevant

Element	Extent (A-E)
1. Formulation/identification of the scientific problem	A
2. Planning of the experiments/methodology design and development	A
3. Involvement in the experimental work/clinical studies/data collection	A
4. Interpretation of the results	B
5. Writing of the first draft of the manuscript	A
6. Finalization of the manuscript and submission	C

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In case of further co-authors please attach appendix

Date: 10/05/19

Signature of the PhD student

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