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# Synergistic partners: How HRM and leadership climate shape employees' ambidextrous behavior



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**Abstract:** Recent advancements in ambidexterity research suggest that HRM plays a vital role in shaping contextual ambidexterity. Building on social information processing theory, the present study extends this literature by putting the spotlight on two fundamental, yet often implicit assumptions of contextual ambidexterity. First, we examine how HRM practices that are specifically designed to promote ambidextrous cues (i.e., ambidexterity-oriented HRM [A-HRM] practices) are related to contextual ambidexterity. Second, we address the premise that such HRM practices actually affect all employees in an organization. In addition, we introduce transformational leadership (TFL) climate as a critical boundary condition that helps to translate paradoxical signals of A-HRM practices to the employees. We tested these relationships in a multi-source sample of 16,740 employees from 94 organizations and found support for the proposed interaction effect of A-HRM and TFL climate on employees' ambidextrous behavior and, in turn, organizational performance (i.e., indirect effects). Our study contributes to a better understanding of creating contextual ambidexterity and the important role of leaders in the implementation of A-HRM practices.



**Keywords:** a-hrm, ambidexterity, transformational leadership, organizational change, exploitation, exploration

**Synergistische Partner: Wie Personalmanagement und Führungsklima das ambidextre Verhalten der Mitarbeitenden prägen**

**Zusammenfassung:** Jüngste Fortschritte in der Ambidextrie-Forschung zeigen, dass HRM eine entscheidende Rolle bei der Gestaltung kontextueller Ambidextrie spielt. Die vorliegende Studie baut auf der Social-Information-Processing Theorie auf und erweitert diesen Forschungsstrang, indem sie zwei grundlegende, jedoch oft

implizite Annahmen von kontextueller Ambidextrie beleuchtet. Zum einen untersuchen wir wie HRM-Praktiken, die speziell auf die Förderung von Ambidextrie ausgerichtet sind (d.h. Ambidextrie-orientierte HRM-Praktiken [A-HRM]) mit kontextueller Ambidextrie zusammenhängen. Zum anderen adressieren wir die Prämisse, dass solche HRM-Praktiken tatsächlich alle Mitarbeitenden in einer Organisation beeinflussen können. Darüber hinaus führen wir das Klima der transformationalen Führung (TFL) als entscheidende Rahmenbedingung ein, die dazu beiträgt paradoxe Signale von A-HRM-Praktiken für Mitarbei-

tende zu übersetzen. Wir haben diese Zusammenhänge in einer multi-source Stichprobe mit 16.740 Mitarbeitenden aus 94 Organisationen getestet und fanden Bestätigung für den vorgeschlagenen Interaktionseffekt von A-HRM und TFL-Klima auf das ambidextre Verhalten der Mitarbeitenden und folglich auf die Unternehmensleistung (d. h. indirekte Effekte). Unsere Studie trägt zu einem besseren Verständnis der Etablierung von kontextueller Ambidextrie und der wichtigen Rolle von Führungskräften bei der Umsetzung von A-HRM-Praktiken bei.

**Stichwörter:** Personalmanagement, Ambidextrie, transformationale Führung, organisationaler Wandel, Exploitation, Exploration

## 1. Introduction

The capability to act efficiently while simultaneously being adaptive to environmental changes has become a necessity for organizational success (Raisch & Birkinshaw, 2008), making it a key quest in research to find ways to establish organizational ambidexterity in firms (March, 1991; Raisch & Birkinshaw, 2008).

Existing literature distinguishes two main internal strategies for pursuing the contradictory demands, namely structural and contextual ambidexterity (Cao et al., 2009). Structural ambidexterity refers to a functional separation of exploratory and exploitative activities into different units (O'Reilly & Tushman, 2008; Raisch & Tushman, 2016). Contextual ambidexterity, in contrast, refers to the establishment of an organizational context in which all employees can focus their energies on both activities simultaneously (Patel et al., 2013) and, as such, is also practicable for SMEs that do not possess vast resources.

Recently, scholars have started to explore the role of HRM practices in shaping a context for ambidexterity (Mom et al., 2019; Patel et al., 2013). Although this work has enlightened the understanding of this linkage to a significant extent, it did not specifically address two fundamental premises underlying contextual ambidexterity theory. First, contextual ambidexterity builds on the tenet that an organizational environment (including a firm's HRM practices) provides paradoxical cues that foster the simultaneous enactment of exploitative and explorative behavior patterns. Extant work, however, "borrowed" bundles of HRM practices from the HR literature (e.g., high-performance work systems) which, by definition, were not designed to promote ambidextrous behavior (Mom et al., 2019; Patel et al., 2013).

Second, applying top management team (TMT) ratings of organizational ambidexterity (Patel et al., 2013) or focusing on operational managers' ambidextrous behavior (Mom et al., 2019), prior studies were not able to examine the basic presumption that such HRM practices actually affected the ambidextrous behavior of all employees in an organization (cf. Gibson & Birkinshaw, 2004). Taken together, this raises an important question: how do HRM practices designed to foster ambidextrous behavior shape the behavior of all employees in an organization?

There are good reasons to believe that the establishment of 'standalone' A-HRM practices (i.e., a system of HRM practices specifically targeted towards exploration and exploitation activities) does not automatically translate into employee ambidextrous behavior. Zimmermann et al., (2018) proposed, in this regard, that complex exploration-exploitation tensions cannot be solved by stable solutions, but rather require dynamic

shaping and reshaping of the organizational context (Zimmermann et al., 2018). Recent developments in the HR literature provide fruitful theoretical impulses for solving these structural tensions. More specifically, HR theorists have pointed to the critical role of collective leader involvement, in particular via transformational leadership (TFL) climate (Huettermann & Bruch, 2019), in the implementation of HRM practices (Kehoe & Han, 2020). This raises an important second question: how do A-HRM and leadership climate interactively shape the employees’ ambidextrous behavior?

Drawing on social information processing theory (Salancik & Pfeffer, 1978; Schad et al., 2016), we aim at developing a more comprehensive picture of the HRM – contextual ambidexterity link. To this end, we propose transformational leadership climate as contingency factor of A-HRM (van de Voorde & Boxall, 2014), arguing that the positive effects of A-HRM on employees’ ambidextrous behavior and, in turn, organizational performance are only achieved at high levels of TFL climate (Figure 1).

We test the above propositions in a multi-source sample of 16,740 employees from 94 German SMEs, aiming to make three key contributions. First, by investigating HRM practices that are specifically designed to promote employees’ ambidextrous behavior (i.e., A-HRM practices), we answer calls for research that uncovers the effects of targeted HRM systems, rather than universal HRM bundles (Lepak et al., 2006). In so doing, we also contribute to the literature on antecedents of contextual ambidexterity (e.g., Havermans et al., 2015; Zimmermann et al., 2015). Second, to our knowledge, we are the first to explicitly address the often-implicit assumption that organizations can establish a context, in which all employees are encouraged to behave ambidextrously (Gibson & Birkinshaw, 2004). Third, we shed light on the contingency factors of the HRM – ambidexterity link, highlighting the crucial role of TFL climate as a ‘synergistic partner’ of A-HRM practices. In doing so, we create novel insights for organizational decision-makers who seek to establish an organizational context that empowers all employees to contribute to both a firm’s exploitation and exploration activities (Gibson & Birkinshaw, 2004).

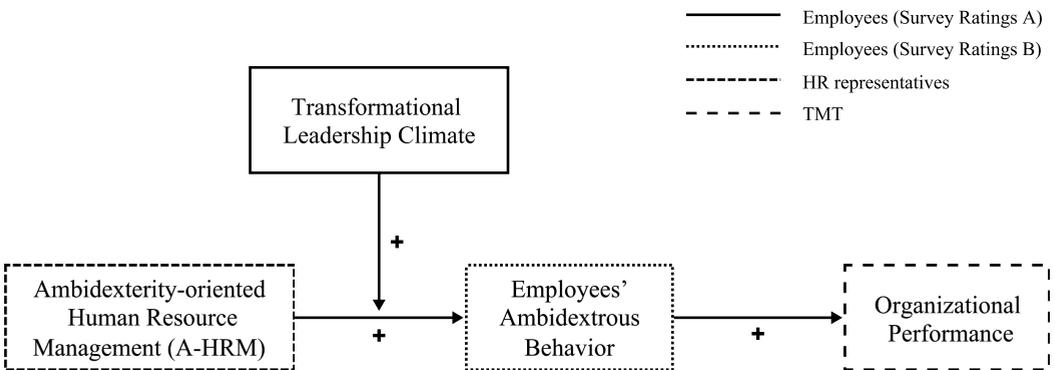


Figure 1. Conceptual model and data sources.

Note. HR = human resources. TMT = top management team. Box frames represent the respective data sources. All data is cross-sectional.

## 2. Theory and Hypotheses Development

### 2.1. Ambidexterity-oriented HRM

As noted above, we define A-HRM as a system of HRM practices that are specifically targeted towards fostering ambidextrous behavior throughout an organization. What is more, we propose that A-HRM manifests itself in four distinct, yet related HRM practices<sup>1</sup>: (1) recruitment and selection, (2) training and development, (3) performance appraisals and (4) compensation policies. In their fundamental study, Lepak and Snell (2002) identify these four functions as core to HRM activities. As further depicted in Table 1, our approach is targeted towards the organizational goal to create an ambidextrous context, thereby accounting for the multiplication of exploration-oriented and exploitation-oriented HRM practices in each dimension. Consequently, both focus areas need to be maximized simultaneously to achieve A-HRM. We disagree with the assumption that HRM practices can focus on exploration or exploitation only. Rather, we argue that A-HRM practices create paradox cues that stimulate employees to engage in both activities simultaneously. In regard to individual requirements for dealing with these opposing demands it is a crucial requirement for success to work through the paradoxes by embracing them and actively learning to cope with tensions and ambiguity, instead of suppressing or ignoring them (Miron-Spektor et al., 2018). As described by Beletskiy and Fey (2021), we follow most research on HRM and ambidexterity to date, by treating A-HRM as an antecedent to ambidextrous behavior in organizations.

Table 1. *A-HRM Activities.*

Ambidexterity-oriented HRM practices		
	<i>Exploration-oriented HRM practices</i>	<i>Exploitation-oriented HRM practices</i>
Recruitment and Selection	New Employees require creative skills	New employees require efficiency-oriented skills
Training and Development	Development programs on innovation and creativity methods	Development programs on time management, target setting, structuring
Performance Appraisals	Positive feedback on e.g., the creation of products or innovative collaboration methods	Positive feedback on e.g., the reduction of resources for packaging or cost-cutting for traveling
Compensation Policies	Variable earning structures incentivize the creation of new business	Variable earning structures incentivize the efficient execution of existing business

### 2.2. A-HRM and Employees' Ambidextrous Behavior

In order to establish the relationship between A-HRM practices and employees' ambidextrous behavior, we draw from social information processing theory (Salancik & Pfeffer,

1 We are aware that HRM systems were conceptualized differently in other studies (e.g., Mom et al., 2019; Patel et al., 2013). We followed the seminal approach by Lepak & Snell (2002), given its clear focus on four key activities of HRM that can be translated into concrete practical strategies in organizations.

1978). Social information processing theory builds on the tenet that individuals interpret their own behavior according to cues from their immediate social environment and adapt their perceptions, attitudes, and behavior accordingly (Jiang et al., 2017). In the HRM context, Nishii and Wright (2008, p. 239) argued, accordingly, that “social processes surely play a role in what aspects of the HRM practices employees attend to, how they are interpreted, and the reactions that they feel are appropriate.” Building on this work, we propose that ambidextrous cues (i.e., focused on exploitation and exploration) are established through each of the four A-HRM dimensions introduced earlier.

First, *recruitment and selection* refer to the entire process of hiring new employees and integrating them in the organization. This process includes formulating a list of criteria, job advertisement, screening of applicants, assessment, and so forth. Since all employees across the organization are required to display explorative and exploitative behaviors simultaneously<sup>2</sup>, hiring employees with an existing propensity for pronounced innovative as well as efficiency capabilities is essential. Both types of behavior are therefore equally important in the selection process. (Gibson & Birkinshaw, 2004; Patel et al., 2013). Moreover, as these employees are onboarded and start working in their respective positions, they may perceive high levels of person-job fit and hence, find it easier to behave ambidextrously (Edwards, 1991). Over time, this tendency will develop naturally when colleagues start to attract candidates with similar behavior and capabilities (Bryne, 1971). As a consequence, a social environment is created, in which the desired ambidextrous behavior is increasingly prevalent among coworkers who influence each other.

Second, *training and development* practices provide employees with the opportunity to develop mastery in their roles and tasks and in turn behave in line with the organization’s objectives. In addition to hiring new personnel according to desired skills, training the existing workforce should further enhance the level of ambidextrous behavior across the organization. In line with the dual orientation of ambidexterity, training initiatives need to focus on both sides: risk taking, experimentation, quickness in responds to upcoming opportunities, innovation, challenging the status quo, and intrapreneurship; as well as refinement, choice, production, efficiency, selection, implementation, and execution (March, 1991). Based on social information processing theory, it is expected that focusing training practices on ambidexterity sends cues to employees about expected skills and highlights the importance of behaving accordingly.

*Performance appraisals* refer to processes in which employees and their supervisors agree on a specific set of goals and evaluate the employees’ achievements after a specific time frame (Lepak & Snell, 2002). Appraisals also play an important role when thinking about internal promotion and career paths. In the context of A-HRM practices, feedback processes are focused on employees’ ambidextrous behavior. Hence, each employee has the opportunity to learn from his or her past behavior (Salancik & Pfeffer, 1978), which helps him or her to improve in the future according to the standards. More specifically, employees do not only receive feedback on their explorative and exploitative behavior, but also on the extent to which they managed to engage in both activities simultaneously (Gibson & Birkinshaw, 2004). This, in turn, will motivate the employees to develop

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2 We note that the concept of ambidextrous behavior does not imply that all employees are required to display explorative and exploitative behavior at the same time, all the time, to the same extent. Rather, in line with contextual ambidexterity theory, the context should set stimuli that, on average and over time, foster ambidextrous behavior throughout the organization.

strategies for the pursuit of both behavior patterns, which ultimately will result in higher levels of ambidextrous behavior.

Fourth, with regard to *compensation policies*, there is strong evidence that financial incentives are a powerful source for shaping employees' behavior (Jenkins et al., 1998). Higher payment can present a strong extrinsic incentive to adjust the behavior according to organizational guidelines (Gerhart et al., 2009). Similarly, we expect that employees are more likely to behave ambidextrously when they realize that both types of behavior are needed to receive the full bonus. For example, if an employee only focuses on the exploitation of existing products, he or she will understand that explorative activities are also necessary to receive the entire compensation. Furthermore, individuals obtain additional hints via social comparison (Festinger, 1954) to the compensation of colleagues, which then fosters their own ambidextrous behavior. The feedback obtained through compensation policies and appraisals also gives employees the confidence that they are acting according to the firm's interests and thereby shapes a social climate with clearly communicated organizational expectations (Faisal Ahammad et al., 2015).

Taken together, we propose that high levels of A-HRM (i.e., manifested in recruitment, training, performance appraisal, and compensation practices) will create an organizational context that encourages and enables all employees to behave exploitative and explorative simultaneously (Gibson & Birkinshaw, 2004). Hence:

*Hypothesis 1. Ambidexterity-oriented HRM (A-HRM) is positively associated with employees' ambidextrous behavior.*

### 2.3. The Moderating Role of Transformational Leadership Climate

Leaders arguably play a critical role in influencing and building an organizational context that shapes employee behavior (Carmeli et al., 2009; Ghoshal & Bartlett, 1994). Accordingly, strategic HRM researchers have highlighted the influence of managers on employees' perceptions of HRM practices (Jiang et al., 2017), suggesting that unequivocal information from the environment is crucial for the establishment of individuals' attitudes and behaviors (Salancik & Pfeffer, 1978)

Concerning ambidextrous behavior, Andriopoulos and Lewis (2009) highlight in their research that exploration-exploitation tensions are synergistic and interwoven polarities, which should not be eliminated, but integrated instead. That means helping and encouraging employees in their pursuit of following paradoxical demands becomes a shared responsibility. On top of that, exploration-exploitation tensions are ever-changing and thus require the continuous shaping of the organizational context by constantly focusing on both antagonistic tendencies (Zimmermann et al., 2018). This description highlights the importance of all organizational leaders across one firm to translate the complex and paradoxical demands of A-HRM on employees. Therefore, we propose that the positive relationship of A-HRM and employees' ambidextrous behavior depends on the signals sent by all organizational leaders, making high levels of TFL *climate* a necessary prerequisite for A-HRM to foster ambidextrous behavior (cf. Jansen et al., 2008). TFL climate is defined as the shared degree of TFL behavior that the leaders within an organization collectively direct towards their immediate followers (Walter & Bruch, 2010; for details on the emergence of TFL behavior to TFL climate, see, e.g., Menges et al., 2011).

As we further outline below, we argue that TFL climate supports the employees in understanding the challenging demands introduced by A-HRM.

The key behavior of transformational leaders is oftentimes associated with six main categories (Bass, 1985; Podsakoff et al., 1990): acting as an appropriate *role model*, identifying and articulating a *vision* for the future, setting *high performance expectations*, fostering the *acceptance of common goals*, and providing *intellectual stimulation*, and *individualized support* for their followers (Bass et al., 1987; Podsakoff et al., 1996).

By acting according to the A-HRM policies and leading the way, leaders across the hierarchy *provide a role model* to employees, which they can directly emulate in their own behavior (Bass et al., 1987). Similarly, when transformational leaders *articulate the vision* of the firm and paint a clear picture of the future, they can explain why acting according to paradoxes is important for organizational viability and performance (Podsakoff et al., 1996). Through the *communication of high-performance expectations*, leaders demonstrate confidence in the followers' ability to reach the demanding goals of performing opposing activities (Menges et al., 2011). In addition, employees better understand what is required of them, and that they need to put forth a great effort to reach the demands set by A-HRM (N. S. Hill et al., 2012). By *fostering the acceptance of common goals*, leaders throughout the firm develop a strong social context that makes the employees understand that ambidextrous behavior patterns are expected also from their co-workers (Jansen et al., 2008). Through *providing intellectual stimulation*, organizational leaders can engage employees in finding new solutions to handle the presented contradictions through creative problem solving and outside the box-thinking (Walter & Bruch, 2010). This way, leaders enable employees to break out of established modes of thinking and help to find new ways in dealing with the presented demands of A-HRM practices. Finally, given that each employee has unique challenges (e.g., some employee may prefer explorative activities over exploitative activities and vice versa) in response to A-HRM practices, *providing individualized support* of transformational leaders also promotes employees' self-confidence and reinforces their endeavor to act in an ambidextrous manner.

In sum, TFL climate helps employees in processing the paradoxical cues sent by A-HRM practices, thus enhancing employees' ambidextrous behavior. In contrast, in organizations with only low levels of TFL climate, A-HRM may not be sufficient to foster the targeted behavior. Hence:

*Hypothesis 2. Transformational leadership climate moderates the association between ambidexterity-oriented HRM and employees' ambidextrous behavior in such a way that the relationship is more positive under high as compared to low levels of the moderator.*

## 2.4. A-HRM and Organizational Performance

We further hypothesize employees' ambidextrous behavior as a mediator of the relationship between A-HRM and organizational performance (Raisch & Birkinshaw, 2008). Existing research has supported the organizational ambidexterity–performance linkage in different study contexts and using different performance conceptualizations (He & Wong, 2004; Junni et al., 2013; Lubatkin et al., 2006). Consequently, it seems plausible that A-HRM through the ambidextrous behavior of employees can indirectly increase organizational performance. Combined with our above considerations that portray TFL

climate as a moderator in the relationship between A-HRM and employees' ambidextrous behavior, this results in the following moderated mediation hypothesis:

*Hypothesis 3. Ambidextrous-oriented HRM is related to organizational performance via conditional indirect effects, such that its relationship is moderated by transformational leadership climate and mediated by employees' ambidextrous behavior.*

### 3. Methods

#### 3.1 Data and Sample

Data for this study was collected from SMEs as part of a larger benchmarking project. The benchmarking agency invited companies to participate through a marketing campaign mainly based on print advertisements and direct mailing. The data for the present study was obtained from four unique sources to avoid potential common source issues (Podsakoff et al., 2012). First, every employee was invited via email to voluntarily participate in the study. The email entailed information regarding the background of the study, the study target, data protection, and the link to the online survey. Within the employee survey, a split-sample design (also referred to as planned missingness design, see, e.g., Zhang & Yu, 2021 for further details) was applied, randomly directing each employee to one of four different survey versions. For this study, we utilized Survey Version A (TFL climate) and Survey Version B (employees' ambidextrous behavior) (see also Figure 1). Regardless of the survey version, all employees responded to general questions about demographic and vocational characteristics (i.e., age, gender, tenure). Overall, 54 percent of the participating employees were men, averaging 40 years of age ( $SD = 11.87$ ), with an average company tenure of 9 years ( $SD = 9.08$ ).

In addition to the two employee surveys, the top HR manager of every firm provided information on the firm's A-HRM and important control variables. Finally, TMT members responded to questions about organizational performance.

#### 3.2 Measures

The online survey was conducted in German with 5-point Likert-scales ( $1 = strongly disagree$ ,  $5 = strongly agree$ ) for the measures, if not indicated differently.

Our conceptual model focuses exclusively on the organizational level of analysis. Therefore, some measures had to be aggregated to the level of the organization. To support the aggregation, we analyzed intra-class correlation coefficients ( $ICC_1$  and  $ICC_2$ ; Bliese, 2000).

#### Ambidexterity-oriented Human Resource Management (A-HRM)

HR executives evaluated the ambidextrous orientation of their organizations' HRM practices. As pointed out by Lepak and colleagues (2006), HR representatives are the most valid and reliable source for evaluating a firm's HRM practices. Specifically, building on work by Lepak and Snell (2002), we asked HR representatives to consider their company's (1) personnel selection processes, (2) training activities, (3) performance evaluation, and (4) compensation policies. They were inquired to indicate the extent to which the four HR activities were oriented on innovative capabilities and creative behavior, as well as on high efficiency and target achievement. Following prior research, we operationalized A-HRM as the product of the orientation towards exploration and towards exploitation

(S. A. Hill & Birkinshaw, 2014; Mom et al., 2009). The internal consistencies were  $\alpha = .71$  (exploration) and  $\alpha = .65$  (exploitation).

### **Transformational Leadership Climate**

TFL climate was measured with the scale by Podsakoff et al. (1990, 1996). Drawing on work by Chan (1998) and James et al. (2008), a direct-consensus model was adopted to measure organization's TFL climate. In line with preceding empirical analyses on TFL climate (Menges et al., 2011), employees were inquired to evaluate their direct leader's TFL behavior. The measure consists of twenty-two items that reflect specific leader behavior such as providing a role model, articulating a vision, communicating high performance expectations, fostering the acceptance of common goals, providing intellectual stimulation, and providing individualized support. Aggregation statistics justified aggregation of employees' TFL ratings at the firm level ( $ICC_1 = .14$ ;  $ICC_2 = .84$ ;  $p < .001$ ). The internal consistency was  $\alpha = .97$ .

### **Employees' Ambidextrous Behavior**

Employees' ambidextrous behavior was measured using the instrument developed by Kostopoulos and Bozionelos (2011) (see also Jansen et al. 2016). Participants were asked to what extent they agreed with three items on exploratory behavior (e.g., "Experimenting with new and creative ways for accomplishing work") and three items on exploitative behavior (e.g., "Implementing standardized methodologies and regular work practices"). Following prior research, and in line with the measurement of A-HRM, we operationalized ambidextrous behavior as the multiplicative interaction of exploration and exploitation (S. A. Hill & Birkinshaw, 2014; Mom et al., 2009). For the subsequent aggregation of individual responses to the organizational level, we applied a direct-consensus model (Chan, 1998). Aggregation was statistically justified ( $ICC_1 = .08$ ;  $ICC_2 = .82$ ;  $p < .001$ ). Internal consistency was  $\alpha = .91$  for exploratory behavior and  $\alpha = .71$  for exploitative behavior.

### **Organizational Performance**

Following Combs and colleagues (2005), we measured organizational performance by differentiating between operational and organizational performance. Without the availability of objective performance data (mostly privately owned SMEs in our sample), we relied on the subjective assessment of the TMT members. Similar to previous work (e.g., Boehm et al., 2014; Huettermann & Bruch, 2019), TMT members were asked to assess three items on organizational performance (i.e., overall company performance, company growth, financial performance) and three items on operational performance (i.e., employee productivity, efficiency of business procedures, employee retention and fluctuation). In accordance with previous studies applying subjective performance measures (e.g., Rogers & Wright, 1998; Wall et al., 2004), TMT members had to benchmark the performance of their firm in comparison to their direct industry competitors on a 7-point Likert-scale ( $1 = \textit{far below average}$ ;  $7 = \textit{far above average}$ ). Aggregation to the organizational level was supported ( $ICC_1 = .29$ ;  $ICC_2 = .51$ ;  $p < .001$ ) and the internal consistency was  $\alpha = .87$ .

## Control Variables

To avoid omitted variable bias, we used several control variables (Becker et al., 2016). First, we controlled for competitive pressure and technological turbulences in the firms' markets because these environmental factors may influence the firms' ambidextrous orientation and performance (Huselid, 1995). Competitive pressure was assessed with 5 items rated by the HR executives (e.g., "The competition in our industry is murderous";  $\alpha = .73$ ). HR executives also evaluated 4 items about technological turbulences in their firm's industry ("The technology in our industry is changing very fast";  $\alpha = .76$ ). Both measures were taken from Jaworski and Kohli (1993).

Second, we controlled for the firm's industry affiliation because industry trends may affect a firm's focus on exploration and/ or exploitation activities (He & Wong, 2004). Third, we included firm age (= years since founding date) because older firms are more likely to be stuck in organizational inertia (Tushman & O'Reilly, 1996), hence yielding potential negative impacts on their exploration capabilities. The age of firms was log-transformed to minimize skewness in the distribution of the construct. Finally, we also included firm size (measured as the logarithm of number of employees; Walter & Bruch, 2010) because size affects a firm's resources, and hence their choice of strategy in pursuing ambidexterity (Patel et al., 2013; Zimmermann et al., 2015).

### 3.3 Analytical Techniques

We applied multiple linear regression analysis to test our hypotheses on the organizational level. To facilitate interpretation, predictors were mean centered prior to analysis (Aiken & West, 1991). Moreover, we plotted the interaction effect at low (1 *SD* below the mean) and high (1 *SD* above the mean) values of the moderator (TFL climate).

The moderated mediation hypothesis, in turn, was tested based on product-of-coefficient procedures (Preacher et al., 2007). Particularly, we analyzed the indirect effects at different values of the moderator TFL climate (i.e., 1 *SD* below, mean, and 1 *SD* above), and tested significance of indirect effects of the independent on the dependent variable via the mediator by applying bootstrapping procedures (5,000 bootstrap samples) to check for significance (Preacher et al., 2007).

## 4. Results

### 4.1 Descriptive Statistics

Means, standard deviations, and correlations among the variables are presented in Table 1. As expected, A-HRM correlated with employees' ambidextrous behavior, which in turn was correlated with organizational performance.

### 4.2 Hypothesis Testing

The results of the regression analyses are presented in Table 2. First, we examined whether A-HRM is positively associated with employees' ambidextrous behavior. After running a controls-only model with employees' ambidextrous behavior as dependent variable, we included A-HRM in the second step. Here we found a positive relationship between A-HRM and employees' ambidextrous behavior, hence supporting Hypothesis 1.

In the third step, we investigated the moderation effect formalized in Hypothesis 2. Therefore, we included TFL climate as well as the interaction term of A-HRM and TFL climate as predictors of employees' ambidextrous behavior. The significant positive effect of the interaction term provides support to Hypothesis 2 and furthermore, explains a significant amount of additional variance in employees' ambidextrous behavior. To gain a deeper understanding of the moderation effect we computed simple slopes at low (- 1 SD;  $\beta = -.00$ , n.s.), average ( $\beta = .08$ ,  $p < .01$ ), and high (+ 1 SD;  $\beta = .15$ ,  $p < .01$ ) levels of TFL climate and plotted the interaction (Figure 2); the pattern of the moderation effect was in line with our theoretical predictions.

In the last step, we investigated the conditional indirect relationship between A-HRM and organizational performance specified in Hypothesis 3. Bootstrapping analyses indicated that the indirect association between A-HRM and organizational performance is positive and significant at high levels of TFL climate ( $B = .03$ , BootSE = .01, Boot95%CI = [0.00, 0.06]), becoming weaker at mean levels ( $B = .01$ , BootSE = .01, Boot95%CI = [0.00, 0.03]) and negative and non-significant at low levels of TFL climate ( $B = -.00$ , BootSE = .01, Boot95%CI = [-0.01, 0.01]). Thus, Hypothesis 3 was supported.

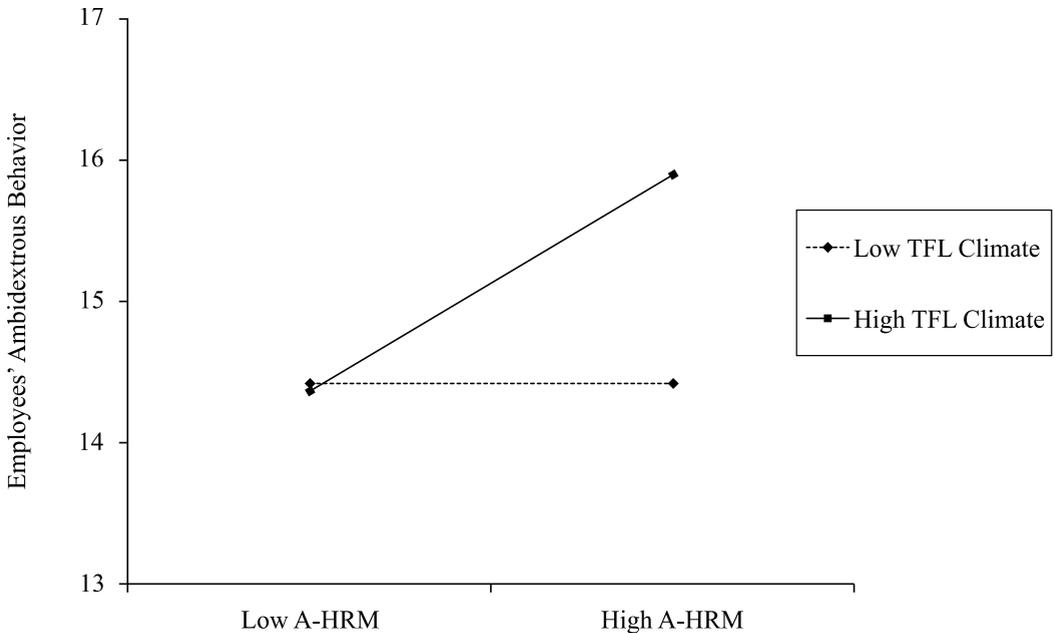


Figure 2. Moderation plot for TFL climate.

Note. TFL = transformational leadership. Low (high) values are 1 SD below (above) mean values.

Table 2. Means, standard deviations, and correlations.

Variables	M	SD	min	max	1	2	3	4	5	6	7
1 Company Size (log)	2.30	.50	55	2025							
2 Company Age (log)	1.54	.40	5	92	.44**						
3 Competitive Pressure	2.62	.71	1.80	4.80	.02	-.14					
4 Technological Turbulences	3.61	1.02	2.25	4.25	.13	-.25*	.23*				
5 Ambidexterity-oriented Human Resource Management (A-HRM)	13.95	5.03	5.06	22.56	.21*	.02	.07	.26*			
6 Transformational Leadership Climate	3.60	.32	1	5	-.32**	-.47**	.03	.22*	.16		
7 Employees' Ambidextrous Behavior	12.23	1.23	2	25	-.18	-.34**	-.04	.10	.21*	.45**	
8 Organizational Performance	5.26	.86	3	7	-.14	-.18	.01	.11	.31**	.30**	.31**

Note. N = 94 organizations. \*  $p < .05$ , \*\*  $p < .01$ . Company size M = 350, Company age M = 30.

Table 3. Results of regression analyses.

Variables	Employees' Ambidextrous Behavior			Organizational Performance	
	Step 1	Step 2	Step 3	Step 1	Step 2
<i>Control</i>					
Company Size (log)	-.03	-.02	-.11	-.13	-.11
Company Age (log)	-.28*	-.17	-.20	-.28*	-.21
Industry Service	-.17	-.15	-.22	-.17	-.13
Industry Finance	-.18	-.19	-.22	.05	.10
Industry Production	-.27	-.22	-.21	.13	.20
Competitive Pressure	-.09	-.07	-.03	-.09	-.07
Technological Turbulences	.03	-.06	-.10	.03	.03
<i>Predictor</i>					
Ambidexterity-oriented Human Resource Management (A-HRM)		.27**	.31**	.34**	.27**
<i>Moderator</i>					
Transformational Leadership Climate			.29**		
A-HRM x Transformational Leadership Climate			.31**		
<i>Mediator</i>					
Employees' Ambidextrous Behavior					.24*
$\Delta R^2$		.13**	.07**		.05*
R <sup>2</sup>	.17	.29	.36	.21	.26
Adjusted R <sup>2</sup>	.10	.21	.28	.14	.18

Note. N = 94 organizations. Predictors were mean centered prior to analysis. Standardized beta coefficients are reported. Statistical tests are based on two-tailed test.

\*  $p < .05$ , \*\*  $p < .01$ .

## 5. Discussion

### 5.1 Theoretical Implications

In the beginning of this study, we posed two questions which we will now reconsider. The first question asked how HRM practices specifically designed to foster ambidextrous behavior (A-HRM) affect the ambidextrous behavior of all employees in an organization. From what we have studied, existing theorizing and empirical research cannot answer this question because it largely focused on broader HRM bundles, which were not designed to promote paradoxical ambidextrous behavior (Mom et al., 2019; Patel et al., 2013) In line

with our theorizing, we found that firms may use A-HRM practices to foster the ambidextrous behavior of all employees and, by extension, the organization's performance.

Our research interest for A-HRM follows the postulation by Lepak and colleagues (2006) to target HRM systems specifically towards the strategic goals of an organization. By considering HRM practices oriented towards the dual opposing activities of ambidexterity, we follow this direction and thus distinguish the study from prior work. By shaping an environment that requires employees to engage in high explorative and exploitative behavior simultaneously, A-HRM creates 'paradoxical demands' and 'paradoxical challenges' for employees (Tushman & O'Reilly, 1996). Through shaping the immediate social environment of employees and interpreting their past behavior, employees receive cues from A-HRM to adapt their behavior according to the requirements of ambidexterity (Salancik & Pfeffer, 1978). By investigating the behavior of all employees, this study builds closely upon behavioral models of ambidexterity (Simsek et al., 2009). Employees are not only the main source of competitive advantage (Collins & Clark, 2003), but their behavior is also essential for the ambidextrous orientation of a firm. The ambidextrous behavior of all employees throughout every hierarchy level follows the idea that firms can achieve ambidexterity when demonstrating alignment with existing opportunities, while simultaneously adapting to changing markets. This conceptualization also contributes to the growing research interest in bottom-up initiations of organizational ambidexterity, which argues for a timelier response to changing market conditions (e.g., alliance relationships, competition, technology) by employees that are in direct contact with external stakeholders (Zimmermann et al., 2015, 2018).

The second question asked if and how A-HRM and TFL climate interactively can shape employees' ambidextrous behavior. Scholars have called for studies that examine the 'contingency factors' that help to translate and explain the challenging demands of ambidextrous behavior induced by A-HRM (Andriopoulos & Lewis, 2009; Zimmermann et al., 2018). Our study extends this work by demonstrating that organizational leaders displaying high levels of transformational leadership are valuable for the implementation of A-HRM.

In contrast, in organizations with low levels of TFL climate, the ambidextrous behavior of employees cannot be fostered. In the ambidexterity literature, the capacity to explain, translate, and provide support has been described as the "ultimate advantage and challenge for organizations" (Andriopoulos & Lewis, 2009, p. 709). Consistency in the signals sent by the organizational environment (A-HRM and TFL climate) is important for employees' understanding of organizational policies, practices, and procedures (Zalesny & Ford, 1990) and can only be achieved when leaders throughout the organization exhibit high levels of transformational leadership. The insights into the TFL climate – A-HRM interaction also build a valuable contribution to the role of leader involvement in the successful implementation of HRM practices (Kehoe & Han, 2020), and thereby show that HR and leadership complement each other to shape employees' ambidextrous behavior.

## 5.2 Managerial Implications

Regarding managerial implications, our analysis highlights the potential benefits of initiating a comprehensive system of ambidexterity-oriented HRM practices. A-HRM should incorporate HRM practices that emphasize exploration and exploitation simultaneously. When personnel selection, training activities, performance evaluation, and compensation

policies are focused on both parts of ambidexterity, A-HRM is most effective. The most important take away in this regard is that organizations avoid hiding the potential paradoxes accompanied by A-HRM, but instead help employees to understand them and actively implement them. Thus, the exploitation-exploration paradox can unleash highly energizing potential for organizations when it is managed effectively. That means creatively capturing both extremes of ambidextrous behavior (Andriopoulos & Lewis, 2010). Moreover, leaders play an essential role in the context of A-HRM. Transformational leadership, in particular, contributes to employees' perception and understanding of potentially paradoxical A-HRM practices. In this sense, transformational leaders across an organization are highly influential in explaining and translating the contradictory demands posed by A-HRM on employees. Hence, high levels of transformational leadership climate should become a priority for firms that aim to become ambidextrous. Leadership development programs, selection in accordance with adequate personal characteristics, and establishing an appropriate culture represent possible approaches (Bono & Judge, 2004; Walter & Bruch, 2010).

In conclusion, our study suggests that, by establishing an HRM system that fosters exploitation and exploration simultaneously (i.e., A-HRM), organizations can foster ambidextrous employee behavior and reap performance benefits – but only if leaders throughout the organization display strong transformational leadership to translate the paradoxical cues of the A-HRM system.

### 5.3 Limitations and Future Research

Despite methodological strengths, including the large-scale, multi-source data collection, this study is not without limitations. One of these limitations is linked to the cross-sectional nature of the data. Although we tried to alleviate this issue by utilizing different data sources, and by drawing on established theory to develop our hypotheses, we cannot fully rule out reversed causality issues. Second, the assessment of A-HRM is singularly grounded on HR executives' evaluation. With this approach we tried to reduce potential same source bias and thereby referred to prior research that point to HR executives as reliable source (Huettermann & Bruch, 2019). Considering future research, it could be of additional value to also include employees' perceptions of the organizational HR activities towards ambidexterity. Finally, there are limitations related to the measurement of firm performance. For our sample of SMEs, objective information was not available because most firms were privately owned without legal disclosure requirements. Consequently, we used subjective TMT member assessments. While this approach presents potential weaknesses, it has been argued to be adequate in prior research (Boehm et al., 2014; Combs et al., 2005; Huettermann & Bruch, 2019).

Beyond limitations, this manuscript also points in several directions for future research. While we focused on the antecedents of employees' ambidextrous behavior, future studies might try to improve the understanding of the paradoxical demands for employees and how to cope with them. An interesting future avenue could be the paradoxical mindset of employees (Miron-Spektor et al., 2018). Thus, we see further research potential in investigating, how HRM practices could foster such a paradox mindset in the context of ambidexterity.

Lastly, future research could also examine how more critical viewpoints toward leadership (e.g., accounting for the power and politics structures in the organization; e.g.,

Sutherland et al., 2020) can inform research on the effectiveness of contextual ambidexterity (as, for example, fostered by A-HRM).

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