

The influence of human resource management systems on employee job crafting: An integrated content and process approach

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Abstract

Although job crafting has many beneficial outcomes for organisations, research on the antecedents of this behaviour is lacking. Through a two-wave study including 87 managers and 342 employees of nine Chinese firms, an integrated content and process model of human resource management (HRM) systems is developed and used to demonstrate that HRM systems have a crucial influence on employee job crafting. The results of multilevel structural equation models reveal that implemented HRM systems can increase employee task and relational crafting through the mediating effect of perceived HRM systems. Furthermore, the HRM system features of distinctiveness, consistency and consensus positively moderate the strength of the relationship between implemented and perceived HRM systems, as well as the indirect effect of implemented HRM systems on employee task and relational crafting.

KEYWORDS

HRM content and process, human resource management system features, human resource management systems, job crafting

1 | INTRODUCTION

Globalisation and a rapidly changing organisational environment have caused today's work to become increasingly complex, non-routine and diverse. In this context, traditional top-down job design is insufficient to adapt to the rapidly changing nature of modern jobs (Zhang & Parker, 2019). Therefore, research on job design has shifted from

Practitioner Notes**What is currently known?**

- The effects of HRM systems on the task, relational and cognitive facets of job crafting are unclear
- It is unclear how HRM system features moderate the relationship between HRM system content and the three facets of job crafting

What this paper adds?

- This paper expands the research on the antecedents of job crafting
- This paper develops the body of knowledge on the relationship between HRM systems and job crafting

Implications for practitioners

- Managers should be aware of the importance of both HRM content and process in the implementation of HRM systems
- Managers should be aware of how to promote employee task and relational crafting by effectively implementing HRM content and process

the traditional top-down job design of job characteristics to bottom-up approaches that encourage employees to proactively design their own jobs, such as job crafting. Job crafting refers to employees proactively changing the task, relational and cognitive boundaries of their work (Wrzesniewski & Dutton, 2001). Previous research has shown that job crafting is related to many beneficial employee outcomes, such as performance (Niessen et al., 2016), work engagement (Meijerink et al., 2020) and person-organisation fit (Kim et al., 2018). This makes it important to understand how organisations can stimulate employees to successfully engage in job crafting.

However, previous studies have mostly focused on the effects of individual and job characteristics on job crafting, not on the bigger picture of practices at the organisation level, such as human resource management systems (Rudolph et al., 2017). Human resource management (HRM) systems are a synergistic set of mutually reinforcing HR practices implemented by organisations, and they are one of the most systematic organisational influences on employees' behaviour (Chang et al., 2014). Although many studies have shown the positive effect of HRM systems on employee behaviours such as innovation, organisational citizenship behaviour and job performance (Katou et al., 2014; Sanders & Yang, 2016), the potential influence of HRM systems on job crafting is not well understood. Only Meijerink et al. (2020) and Guan and Frenkel (2018) have explored the impact of HRM systems on job crafting. Meijerink et al. (2020) focused on the HRM content approach, which answers the question of which HR practices are effective in helping the organisation achieve a specific objective, such as improving organisational performance or eliciting positive employee behaviours (Sanders et al., 2014). They found that employees' perceptions of high-commitment HRM systems positively influenced their job crafting. Guan and Frenkel (2018) focused on the HRM process approach, which answers the question of how an HRM system is effectively communicated to employees, specifically the three features that affect whether employees understand and interpret the meaning of HRM systems in the way expected by managers: distinctiveness, consistency and consensus (Bowen & Ostroff, 2004). They found that these three features of HRM systems positively influenced job crafting.

While these two studies have taken an important step in revealing the relationship of HRM systems with job crafting, their contributions are still limited because they only utilise either the content or the process approach to study this relationship. This one-sided approach may obfuscate the true effect of HRM systems on employee job crafting because content and process are two inseparable aspects of any HRM system. Only the effective integration of both aspects can reveal a comprehensive picture of the relationship between HRM systems and

employee behaviour (Bowen & Ostroff, 2004; Katou et al., 2014). Thus, our research integrates these two approaches to explore the complete influence of HRM systems on employee job crafting.

Furthermore, research has shown there are three types of job crafting: task, relational and cognitive crafting. Task crafting refers to employees taking the initiative to change the number, scope and form of job tasks. Relational crafting refers to employees changing their interpersonal relationships at work, and cognitive crafting refers to employees proactively changing their views on work (Niessen et al., 2016). These three types are the core components of job crafting and are beneficial to both organisations and employees (Zhang & Parker, 2019). However, most empirical studies on the antecedents of job crafting have combined these three types into a composite index (Kim et al., 2018). This approach prevents researchers from exploring whether each facet of job crafting has any unique antecedents.

Therefore, our study explores the combined content and process influences of HRM systems on the three facets of job crafting. First, based on the conservation of resources (COR) theory, we use the content approach to examine the influence of implemented HRM systems (i.e., HRM systems implemented by managers) on employee task, relational and cognitive crafting, as well as the mediating role of perceived HRM systems (i.e., HRM systems perceived by employees). Second, we explore how HRM system features moderate the relationship between implemented and perceived HRM systems, as well as the indirect effect of implemented HRM systems on employee task, relational and cognitive crafting via perceived HRM systems. Our theoretical model is shown in Figure 1.

Our research makes three theoretical contributions. First, we advance research on the antecedents of job crafting by exploring the multilevel influence of HRM systems on employee job crafting. By adopting a multilevel perspective, we explain whether and how HRM systems at the organisation level influence employee job crafting, thereby extending the research on the antecedents of job crafting to the organisation level (Rudolph et al., 2017). In addition, by exploring the influences of implemented HRM systems on three separate facets of job crafting, we provide insight into the unique explanatory processes for each facet of job crafting.

Second, we develop the body of knowledge on the relationship between HRM systems and job crafting in two important ways. On one hand, by integrating both HRM content and process approaches, we move beyond the current research which only utilises either the content or process approach to study this relationship (Guan & Frenkel, 2018; Meijerink et al., 2020). On the other hand, by considering both implemented and perceived HRM systems to explore the HRM systems–job crafting relationship, we expand the research of Meijerink et al. (2020). Although Meijerink et al. (2020) have used the content approach to examine this relationship, their study only focused on the effect of perceived HRM systems on job crafting, while ignoring the effect of implemented HRM systems.

Third, we shed new light on the boundary conditions between implemented and perceived HRM systems by exploring how HRM system features moderate the relationship between implemented and perceived HRM systems. Prior studies used the management perspective to explain the boundary conditions between implemented and perceived HRM systems (Den Hartog et al., 2013; Zhang et al., 2018). However, our research uses the HRM process perspective to show how the HRM features of distinctiveness, consistency and consensus can bring implemented and perceived HRM systems closer together. This moderating effect has implications for any research which explores how HRM systems influence employee attitudes and behaviour.

2 | THEORETICAL BACKGROUND AND HYPOTHESES

2.1 | Integrating HRM content and process approaches

HRM systems are a synergistic set of mutually reinforcing HR practices aimed at achieving organisational goals (Boon et al., 2019). Although the specific HR practices included in HRM systems vary across countries and studies, it is generally believed that HRM systems should include ability-enhancing practices (such as selection and training), motivation-enhancing practices (such as compensation management and internal labour markets) and opportunity-enhancing practices such as information sharing and participative management (Jiang et al., 2012). Because our

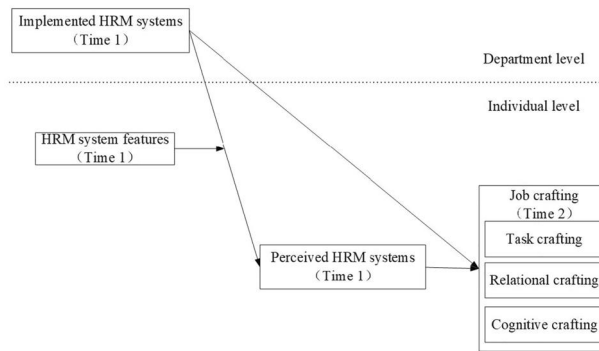


FIGURE 1 Theoretical model. HRM, human resource management

research was conducted in China, we measured an HRM system commonly used by Chinese firms. This system includes the HR practices of rigorous selection, extensive training, compensation management, internal labour markets, competitive mobility and regulatory enforcement, results-oriented performance appraisals, information sharing, and participative management. This type of HRM system is widely considered to be a high-performance HRM system for Chinese firms (Su, 2010).

Research on HRM systems can generally be classified into two approaches: content and process (Ostroff & Bowen, 2016). The content approach focuses on empirically proving the link between the content of HRM systems and organisational performance (e.g., Jiang et al., 2012) or employee outcomes (e.g., Jensen et al., 2013). Although many studies show a positive relationship between HRM systems and organisational performance, some critical research casts doubt on this relationship (Boon et al., 2019). Similarly, although research focusing on employee outcomes generally shows that HRM systems can increase employee commitment and satisfaction, some studies have found that HRM systems increase employee anxiety and role overload (Jensen et al., 2013). These conflicting results have led researchers to question whether the content perspective alone is sufficient to completely explain how HRM systems influence organisational performance and employee outcomes. To address this question, HRM research has shifted towards the process approach in the last several years (Sanders et al., 2014).

The process approach emphasises the way that individual employees make sense of HR practices, specifically the three features of the HRM system that affect whether employees understand the meaning of HR practices in the way expected by managers: distinctiveness, consistency and consensus. Distinctiveness refers to the features of the HRM system that attract employees' attention. Consistency refers to the consistency of the system and its practices across different times and contexts, while consensus refers to the consensus among decision-makers about the targets and values of the system (Bowen & Ostroff, 2004). Research has demonstrated that HRM system features are positively related to employees' affective commitment, vitality and organisational performance (Sanders et al., 2014). However, these studies have only focused on the HRM system process, which 'may produce erroneous results due to mis-specification regarding the guiding factors of the HRM-performance relationship' (Katou et al., 2014, p. 528). Therefore, scholars have called for future research into the effects of HRM systems on employee behaviours to combine both content and process approaches (Sanders & Yang, 2016). Our study responds to these calls by integrating HRM content and process approaches to explore whether and how HRM systems influence the three facets of job crafting.

2.2 | Implemented HRM systems and job crafting

COR theory provides a theoretical framework for exploring the influence of HRM systems on job crafting. According to COR theory, individuals strive to obtain resources, which may include objects, personal characteristics,

energies and social resources (Hobfoll, 1989). These resources are valued by individuals as a means to achieve their desired goals (Halbesleben et al., 2014). In the organisational context, a resource is anything which helps an individual achieve work goals or promote work growth and development (Halbesleben et al., 2014). According to COR theory, the more resources an individual already possesses, the more he or she will engage in proactive behaviour to avoid resource loss and increase resource gain (Hobfoll et al., 2018). As a system of management practices designed to increase employee abilities, motivation and opportunities to contribute, implemented HRM systems provide employees with many resources that create a fertile environment for their proactive behaviour. Job crafting is one such proactive behaviour, and research shows that as available resources increase, employees will engage in more job crafting to protect existing resources and gain new ones (Hu et al., 2019). Based on this, we believe that implemented HRM systems will have positive effects on job crafting.

First, we expect implemented HRM systems to increase employee task crafting. When managers implement HRM systems, employees will have more autonomy and ability to craft their tasks. For example, when managers provide employees with extensive training, employees are more able to craft their tasks. This is because training enables employees to master the domain-relevant skills and competence needed to craft tasks. Berg et al. (2010) found that the more training employees receive, the more likely they are to engage in task crafting. Participative management practices increase employee autonomy, which allows them more freedom to change the nature and scope of job tasks (Rudolph et al., 2017). Frequent performance appraisals set the stage for employees to bring up desired changes to their job tasks and ask their supervisor's opinion. Although employees initiate job crafting by themselves, they will often discuss desired job changes with a supervisor to gain the supervisor's assistance and guidance in making the changes (Berg et al., 2010; Zhang & Parker, 2019).

Second, implemented HRM systems can give employees more opportunity to engage in relational crafting. For example, companies with a strong internal labour market allow employees to move both horizontally and vertically in the company, providing more opportunities for employees to seek out and establish new interpersonal relationships at work. Similarly, employees have the chance to proactively move out of a position where they must interact with a disliked co-worker or supervisor, while remaining within the company. Performance assessments can also provide opportunities for employee relational crafting. When employees receive frequent assessments focused on their career development, they have more chances to proactively shape the relationship with their supervisor (Cappelli & Tavis, 2016).

Third, implemented HRM systems can give employees the opportunity to re-frame their cognitions regarding the job. For example, information-sharing practices give employees a sense of how they fit into the 'big picture' and contribute to organisational goals. When employees can see how their individual work contributes to the company's success, or to the satisfaction and well-being of their company's clients, they may find a greater sense of purpose and meaning in their work (Wrzesniewski & Dutton, 2001). Opportunities for promotion within the company are also resources which help employees view their job in a different light. When an employee knows that opportunities for promotion exist, they will be more likely to view an unsatisfactory job as a stepping stone to future opportunity and remain in the organisation instead of quit as soon as a better job comes along. Based on this, we expect:

Hypothesis 1: *Implemented HRM systems are positively related to (a) task crafting, (b) relational crafting and (c) cognitive crafting.*

2.3 | The mediating role of perceived HRM systems

Previous studies have found that a single implemented HRM system may be (and most often will be) perceived in different ways by different employees, thus forming different perceived HRM systems (Liao et al., 2009). However, this does not mean implemented and perceived HRM systems are unrelated. Implemented HRM systems provide

the context for employees to form their own perceptions of the HRM system (Liao et al., 2009). Supporting this, Den Hartog et al (2013) found that implemented and perceived HRM systems are significantly related. Thus, we expect that implemented HRM systems are positively associated with perceived HRM systems.

The implementation of an HRM system with practices such as extensive training, participative management, internal labour markets and information-sharing will enable employees to perceive that the organisation provides them with a large number of HRM resources. According to COR theory, when employees feel existing resources are abundant, they are more likely to engage in behaviours aimed at gaining additional resources, such as job crafting (Hobfoll et al., 2018; Hu et al., 2019). In addition, prior research has shown that perceived HRM systems may have a more proximal impact on employee outcomes and are generally viewed as a mediator in the causal chain between implemented HRM systems and employee outcomes (Den Hartog et al., 2013). Therefore, we expect:

Hypothesis 2: *Perceived HRM systems mediate the relationship between implemented HRM systems and (a) task crafting, (b) relational crafting and (c) cognitive crafting.*

2.4 | The moderating role of HRM system features

Bowen and Ostroff (2004) proposed that the HRM system features of distinctiveness, consistency and consensus have a key impact on how employees interpret the meaning of implemented HRM systems, which in turn affects the relationship between implemented HRM systems and employee outcomes. However, few empirical studies have tested their proposition. To remedy this, we explore these HRM system features as a moderator of the relationship between implemented and perceived HRM systems, and as a moderator of the indirect effect of implemented HRM systems on employee job crafting through perceived HRM systems.

High levels of HRM system features may facilitate the linkage between implemented and perceived HRM systems. Specifically, high distinctiveness means that HRM systems are salient, visible and understandable (Sanders & Yang, 2016). When HRM systems have high levels of distinctiveness, employees can not only clearly see which HR practices are implemented by managers, but also easily understand their functions and benefits. Both aspects will help employees more accurately interpret implemented HRM systems. Furthermore, high consistency means that HR practices in the system are complementary, as well as implemented consistently for all employees (Bowen & Ostroff, 2004). Such an HRM system will convey unambiguous and consistent information to employees, which allows employees to accurately understand implemented HRM systems. Finally, high consensus means that employees can see that all decision-makers in the organisation agree on the meaning and value of HRM systems (Bowen & Ostroff, 2004), which can help employees more accurately interpret implemented HRM systems. In summary, the higher that an HRM system is in distinctiveness, consistency and consensus, the more likely it is that employees will interpret the meaning of implemented HRM systems in the manner expected by managers. Therefore, we believe that when HRM system features are high, the relationship between implemented and perceived HRM systems should be strong.

On the contrary, low levels of HRM system features may cause a disconnect between implemented and perceived HRM systems. Low distinctiveness means that HRM systems are not visible in the organisation, so employees pay little attention to them (Bowen & Ostroff, 2004). When HRM systems are not distinctive, employees do not know exactly which HR practices are implemented by managers, nor do they understand the content of these practices. In this situation, it will be difficult for employees to interpret the meaning of implemented HRM systems in the way expected by managers. Furthermore, low consistency means that HR practices in the system are contradictory and inconsistent (Sanders & Yang, 2016). Such an HRM system will convey ambiguous, unclear and even contradictory information to employees. When this happens, employees will interpret the meaning of an implemented HRM system according to their own idiosyncratic criteria and experience different perceived HRM systems. Finally, low consensus means that the significance, values and goals of HRM systems are not agreed upon by managers (Bowen & Ostroff, 2004), which leads employees to interpret the meaning of implemented HRM

systems in their own way. To sum up, the lower that an HRM system is in distinctiveness, consistency and consensus, the less likely it is that employees will interpret the meaning of implemented HRM systems in the manner expected by managers. Based on this, we expect:

Hypothesis 3: *HRM system features positively moderate the relationship between implemented and perceived HRM systems, such that this relationship is stronger when HRM system features are high than when HRM system features are low.*

Previously we described how HRM systems can promote employee job crafting. However, individuals will only view HRM systems and the HR practices they include as valuable resources for job crafting if they receive clear information regarding how these resources can be invested in a job crafting effort (Halbesleben et al., 2014). In support of this, research has shown that the less ambiguous organisational policies and procedures are, the greater clarity employees have about which aspects of their job can be crafted (Berg et al., 2010). An HRM system high in distinctiveness, consistency and consensus allows employees to clearly understand the value of the system and how to invest resources the system provides into job crafting efforts. When HRM features are high, employees will clearly know how various HR practices can be useful for crafting different aspects of their job. In contrast, if the system is low in distinctiveness, employees may not even be aware some HR practices exist, so these practices cannot be useful for job crafting. If some HR practices are implemented inconsistently, employees cannot be sure those HR practices will be implemented in a way favourable for their job crafting. If employees see managers and co-workers disagreeing about the value of HRM systems, they will be likewise conflicted about whether HRM systems can be beneficial to their proactive efforts to craft their job, or even doubt that the HRM system is useful to employees at all. Therefore, we hypothesise that:

Hypothesis 4: *HRM system features positively moderate the indirect effect of implemented HRM systems on (a) task crafting, (b) relational crafting and (c) cognitive crafting through perceived HRM systems, such that this indirect effect is stronger when HRM system features are high than when HRM system features are low.*

3 | METHOD

3.1 | Participants and procedures

Our data were collected from 87 department managers and 342 employees of nine Chinese firms in various industries including manufacturing, finance and software development. We collected data at two points in time spaced two months apart. At time 1, we distributed questionnaires to 110 department managers and 600 employees. Department managers reported demographic information and rated implemented HRM systems. Employees reported demographic information and rated perceived HRM systems as well as HRM system features. We received valid questionnaires from 87 department managers and 521 employees. At time 2, we distributed questionnaires to employees who had filled out questionnaires at time 1, asking them to report task, relational and cognitive crafting. From these, we obtained 342 valid questionnaires. Therefore, our final sample consisted of 87 department managers and 342 employees.

We ran dropout analyses to test whether our results were biased by the lack of responses from those who did not complete both surveys. We compared the data from the 179 employees who only completed the time 1 survey with the final sample of 342 who completed both surveys. Results indicate that our data was not biased by employees dropping out of the survey.

In our sample of managers, 34.3% were female, 57.5% had obtained a bachelor's degree and 52.9% had been working in their organisations for more than 5 years. Among employees, 46.5% were female, 54.1% had obtained a bachelor's degree and 21.6% had been working in their organisations for more than 5 years.

3.2 | Measures

All items were answered with 5-point scales (1 = *completely disagree*, 5 = *completely agree*).

3.2.1 | HRM systems

Because our research was conducted in China, we used Su's (2010) 28-item, 8-dimension scale, which was developed specifically to represent the practices that constitute an effective HRM system for Chinese firms. Specifically, the dimensions include rigorous selection (four items, e.g., 'the company has implemented rigorous selection procedures including tests and interviews'), extensive training (three items, e.g., 'the company invests more time and money on training than competitors do'), compensation management (three items, e.g., 'the company provides monetary incentives for performance, such as bonuses'), internal labour markets (three items, e.g., 'the company has a system for employee career development'), competitive mobility and regulatory enforcement (five items, e.g., 'the company has implemented internal competition for important job positions'), results-oriented performance appraisal (four items, e.g., 'assessments in the company are based on results'), information sharing (three items, e.g., 'employees in my company receive timely information regarding departmental goals and work progress'), and participative management (three items, e.g., 'in the company, employees participate in management committees'). Department managers and employees rated implemented and perceived HRM systems, respectively. Cronbach's alphas for the implemented and perceived HRM systems scales were both 0.94.

3.2.2 | HRM system features

We used the 16-item, 3-dimension scale from Bednall et al. (2014). Sample items include: 'The procedures and practices developed by HR are easy to understand' (distinctiveness); 'In our company there is clear consistency between words and deeds of the HR department' (consistency); and 'The people in our company responsible for HR have a mutual agreement about how to deal with employees' (consensus). Alpha for this scale was 0.89.

3.2.3 | Job crafting

Niessen et al.'s (2016) scale was used, which has nine items and three dimensions corresponding to task, relational and cognitive crafting. Sample items include: 'So that the job I do suits me, I undertake or seek for additional tasks' (task crafting); 'So that the job I do suits me, I look for opportunities to work together with people whom I get along well with at work' (relational crafting); and 'So that the job I do suits me, I find personal meaning in my tasks and responsibilities at work' (cognitive crafting). Cronbach's alpha for the task, relational and cognitive crafting scales were 0.84, 0.80 and 0.82, respectively.

3.2.4 | Control variables

Based on related research (Niessen et al., 2016), we controlled for gender, education level and organisational tenure of managers and employees.

3.3 | Analysis strategy

Our employees ($N = 342$) are nested in departments ($N = 87$), which are nested in firms ($N = 9$). Because variance in implemented HRM systems between firms was less than 5% of the total variance, the firm level was not considered. However, variance in perceived HRM systems, task crafting, relational crafting, and cognitive crafting between departments were all greater than 5% of the total variance, so the department level should be considered (LeBreton & Senter 2008). As a result, in this study we consider both the department and individual levels of analysis, using two-level hierarchical linear modelling to process our data.

We used Mplus 7.4 to conduct confirmatory factor analysis to examine the discriminant validity of employee-level variables. Following the method of Williams et al. (2009), we treated the aggregated scores of each dimension of the perceived HRM systems and HRM system features as a single observed item. Results indicated that the fit of the five latent factor model including perceived HRM systems, HRM system features, task crafting, relational crafting and cognitive crafting displayed an adequate fit with our data ($\chi^2/df = 2.18$, RMSEA = 0.06, CFI = 0.93, TLI = 0.91). We also tested alternative models with a reduced number of factors (for perceived HRM systems and HRM system features on the same factor, $\chi^2/df = 4.21$, RMSEA = 0.11, CFI = 0.83, TLI = 0.78; for perceived HRM systems, HRM system features and task crafting on the same factor, $\chi^2/df = 5.06$, RMSEA = 0.13, CFI = 0.75, TLI = 0.71; for perceived HRM systems, HRM system features, task crafting, and relational crafting on the same factor, $\chi^2/df = 7.87$, RMSEA = 0.19, CFI = 0.52, TLI = 0.47; for all variables on the same factor, $\chi^2/df = 9.13$, RMSEA = 0.17, CFI = 0.45, TLI = 0.39). These results indicated that the proposed five-factor model fit significantly better than alternative models with a reduced number of factors.

4 | RESULTS

Descriptive statistics are displayed in Table 1. We used the multilevel structural equation modelling methods described by Preacher et al. (2011) and Mplus 7.4 software to test our hypotheses.

The results of Hypothesis 1a–1c are shown in Table 2. Results show that implemented HRM systems are positively related to task crafting ($\beta = 0.50$, $p < 0.001$, 95% CI = [0.27, 0.74]) and relational crafting ($\beta = 0.40$, $p < 0.01$, 95% CI = [0.17, 0.63]), supporting Hypothesis 1a and 1b. However, the main effect of implemented HRM systems on cognitive crafting is not significant ($\beta = 0.04$, $p > 0.05$, 95% CI = [−0.37, 0.46]), so Hypothesis 1c is not supported.

The results of hypothesis 2a–2c are shown in Table 3. Results show that implemented HRM systems have a significant indirect effect on task crafting through perceived HRM systems ($\beta = 0.25$, $p < 0.001$, 95% CI = [0.12, 0.37]), supporting hypothesis 2a. Likewise, implemented HRM systems have a significant indirect effect on relational crafting through perceived HRM systems ($\beta = 0.22$, $p < 0.001$, 95% CI = [0.10, 0.35]), supporting hypothesis 2b. However, perceived HRM systems do not mediate the relationship between implemented HRM systems and cognitive crafting ($\beta = 0.07$, $p > 0.05$, 95% CI = [−0.01, 0.15]), so hypothesis 2c is not supported.

The results of Hypothesis 3 testing are shown in Table 4. Implemented HRM systems are positively related to perceived HRM systems ($\beta = 0.39$, $p < 0.001$). The interaction of implemented HRM systems and HRM system features on perceived HRM systems is significant ($\beta = 0.27$, $p < 0.01$), supporting Hypothesis 3. This interaction effect is graphically displayed in Figure 2.

The results of our moderated mediation hypotheses are shown in Tables 5 and 6. Results in Table 5 show that the higher HRM system features are, the stronger the indirect effects of implemented HRM systems on task and relational crafting through perceived HRM systems are, supporting Hypothesis 4a and 4b. Specifically, when values of HRM system features are 1 or 2, the indirect effects are not significant. When values of HRM system features are 3, 4 or 5, the indirect effects are positive and significant, increasing in magnitude as values of HRM system features

TABLE 1 Descriptive statistics

Variable	M	SD	1	2	3	4	5	6	7
Individual-level/Within level									
1. Employee gender	1.46	0.50	-	-	-	-	-	-	-
2. Employee education level	2.58	0.81	0.03	-	-	-	-	-	-
3. Employee organisational tenure	3.12	0.97	-0.18**	-0.05	-	-	-	-	-
4. HRM system features	3.67	0.59	0.08	0.09	0.02	-	-	-	-
5. Perceived HRM systems	3.49	0.58	0.03	0.16**	-0.04	0.42**	-	-	-
6. Task crafting	3.94	0.73	-0.01	0.12*	0.02	0.49**	0.54**	-	-
7. Relational crafting	3.84	0.66	0.07	0.17**	-0.01	0.51**	0.52**	0.79**	-
8. Cognitive crafting	3.29	0.68	-0.01	0.05	0.02	0.36**	0.13*	0.24**	0.30**
Department-level/Between level									
1. Manager gender	1.33	0.47	-	-	-	-	-	-	-
2. Manager education level	2.75	0.66	0.07	-	-	-	-	-	-
3. Manager organisational tenure	3.34	0.79	-0.13*	0.01	-	-	-	-	-
4. Implemented HRM systems	3.59	0.55	-0.10	0.11*	0.01	-	-	-	-

Note: Individual-level $N = 342$; Department-level $N = 87$.

Abbreviation: HRM, human resource management.

* $p < 0.05$, ** $p < 0.01$.

TABLE 2 Multilevel path analysis of the direct relationships between implemented HRM systems and job crafting facets

Path	Path coefficient		95% bootstrapping confidence interval	
	β	SE	Lower	Upper
Between level				
Implemented HRM systems $\rightarrow$ Task crafting (H1a)	0.50***	0.12	0.27	0.74
Implemented HRM systems $\rightarrow$ Relational crafting (H1b)	0.40**	0.12	0.17	0.63
Implemented HRM systems $\rightarrow$ Cognitive crafting (H1c)	0.04	0.21	-0.37	0.46

Abbreviation: HRM, human resource management.

** $p < 0.01$, *** $p < 0.001$.

increase (shown in Table 6). In contrast, no matter whether HRM system features are high or low, the indirect effect of implemented HRM systems on cognitive crafting through perceived HRM systems is not significant, so Hypothesis 4c is not supported.

5 | DISCUSSION

Our research has three main findings. First, implemented HRM systems are significantly and positively related to task and relational crafting, but not to cognitive crafting. Second, perceived HRM systems play a mediating role in the link between implemented HRM systems and task and relational crafting. Third, HRM system features

TABLE 3 Multilevel mediated path analysis of the indirect relationships between implemented HRM systems and job crafting facets

Path	Path coefficient		95% bootstrapping confidence interval	
	β	SE	Lower	Upper
Between level				
Implemented HRM systems → Perceived HRM systems → Task crafting (H2a)	0.25***	0.07	0.12	0.37
Implemented HRM systems → Perceived HRM systems → Relational crafting (H2b)	0.22***	0.06	0.10	0.35
Implemented HRM systems → Perceived HRM systems → Cognitive crafting (H2c)	0.07	0.04	−0.01	0.15

Abbreviation: HRM, human resource management.

*** $p < 0.001$.

TABLE 4 Multilevel test of moderation by HRM system features

Path	β	SE
Between level		
Implemented HRM systems → Perceived HRM systems	0.39***	0.10
Implemented HRM systems × HRM system features → Perceived HRM systems (H3)	0.27**	0.11
Within level		
HRM system features → Perceived HRM systems	0.41***	0.05

Abbreviation: HRM, human resource management.

** $p < 0.01$, *** $p < 0.001$.

positively moderate the relationship between implemented and perceived HRM systems, such that the higher the HRM system features are, the stronger the positive effect of implemented HRM systems on perceived HRM systems is. Furthermore, this moderating effect extends to the indirect relationships between implemented HRM systems and task and relational crafting, such that the higher HRM system features are, the stronger the indirect effects of implemented HRM systems on task and relational crafting through perceived HRM systems are.

5.1 | Theoretical implications

Our research makes several theoretical contributions. First, we add to the literature on the antecedents of job crafting by showing that implemented HRM systems are positively related to task and relational crafting, and that these relationships are mediated through perceived HRM systems. This implies that organisations can implement HRM systems to stimulate employees to successfully engage in job crafting. These findings extend the antecedents of job crafting from the individual-level to the organisational-level, providing a multilevel perspective on job crafting antecedents.

In addition, although our study finds that implemented HRM systems are significantly related to task and relational crafting, they are not associated with cognitive crafting. These findings are somewhat different from those suggested by COR theory. We used COR theory to predict that implemented HRM systems would be significantly and positively associated with task, relational, and cognitive crafting. The non-significant relationship between implemented HRM systems and cognitive crafting may be explained by action identification theory, which

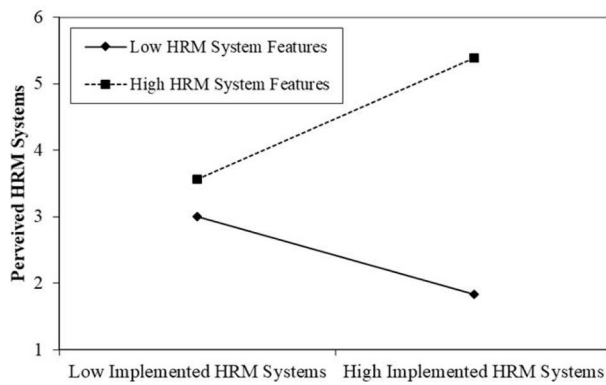


FIGURE 2 Interaction of implemented HRM systems and HRM system features on perceived HRM systems. HRM, human resource management

TABLE 5 Moderated indirect effects of implemented HRM systems on job crafting facets: at high and low levels of HRM system features

Path	HRM system features level	Conditional indirect path coefficient		95% bootstrapping confidence interval	
		β	SE	Lower	Upper
Implemented HRM systems $\times$ HRM system features $\rightarrow$ Perceived HRM systems $\rightarrow$ Task crafting (H4a)	High	0.36***	0.11	0.18	0.60
	Low	0.24**	0.10	0.07	0.48
Implemented HRM systems $\times$ HRM system features $\rightarrow$ Perceived HRM systems $\rightarrow$ Relational crafting (H4b)	High	0.31***	0.10	0.15	0.53
	Low	0.22**	0.10	0.07	0.43
Implemented HRM systems $\times$ HRM system features $\rightarrow$ Perceived HRM systems $\rightarrow$ Cognitive crafting (H4c)	High	0.09	0.08	-0.04	0.26
	Low	0.06	0.07	-0.03	0.23

Note: High = one standard deviation above the mean, low = one standard deviation below the mean.

Abbreviation: HRM, human resource management.

** $p < 0.01$, *** $p < 0.001$.

posits that individual actions can be represented at both higher (an abstract action, such as changing the meaning of one's job) or lower (a more concrete action, such as performing a specific job task) cognitive levels (Vallacher & Wegner, 1987). Cognitive crafting is a higher-level action of employees (Niessen et al., 2016). Vallacher and Wegner (1987) proposed that because individuals have greater self-understanding of their higher-level actions, these actions are less subject to contextual influence than lower-level actions. Therefore, implemented HRM systems, as an important contextual factor of the organisation, have little influence on cognitive crafting.

These findings further confirm that it is necessary to consider job crafting as a three-dimensional construct when exploring its antecedents. Combining the three facets of job crafting into a composite index may obfuscate any differential relationships between these three facets and an antecedent variable. Therefore, our findings extend existing studies on the antecedents of job crafting, which have regarded job crafting as a unidimensional construct and combined different types of job crafting into a composite index to explore its antecedents (Zhang & Parker, 2019).

Second, our research advances the study on the relationship between HRM systems and job crafting in two important ways. On one hand, we find that high levels of HRM system features strengthen the indirect effects of

TABLE 6 Moderated indirect effects of implemented HRM systems on job crafting facets: at different values of HRM system features

Path	HRM system features values	Conditional indirect path coefficient		95% bootstrapping confidence interval	
		β	SE	Lower	Upper
Implemented HRM systems $\times$ HRM system features $\rightarrow$ Perceived HRM systems $\rightarrow$ Task crafting (H4a)	1	0.04	0.11	−0.15	0.28
	2	0.13	0.11	−0.04	0.37
	3	0.23**	0.10	0.07	0.47
	4	0.33***	0.11	0.16	0.57
	5	0.43***	0.12	0.24	0.69
Implemented HRM systems $\times$ HRM system features $\rightarrow$ Perceived HRM systems $\rightarrow$ Relational crafting (H4b)	1	0.06	0.10	−0.11	0.28
	2	0.13	0.10	−0.02	0.35
	3	0.21**	0.10	0.06	0.43
	4	0.29***	0.10	0.13	0.51
	5	0.37***	0.10	0.20	0.60
Implemented HRM systems $\times$ HRM system features $\rightarrow$ Perceived HRM systems $\rightarrow$ Cognitive crafting (H4c)	1	0.03	0.06	−0.03	0.19
	2	0.04	0.06	−0.02	0.21
	3	0.06	0.07	−0.03	0.23
	4	0.08	0.08	−0.04	0.26
	5	0.10	0.08	−0.05	0.29

Abbreviation: HRM, human resource management.

** $p < 0.01$, *** $p < 0.001$.

implemented HRM systems on task and relational crafting through perceived HRM systems, while low levels of HRM system features weaken these indirect effects. This demonstrates that HRM content and process have synergistic effects on job crafting and should be considered together. Therefore, our findings extend existing research that only utilises either the content or the process approach to study the HRM systems–job crafting linkage (Guan & Frenkel, 2018; Meijerink et al., 2020). According to COR theory, these findings show that while HRM systems can potentially provide employees with many resources to use in their job crafting efforts, employees will only utilise these resources if they understand that the resources have value, as well as how to invest them in job crafting efforts. An HRM system high in distinctiveness, consistency and consensus allows employees to clearly understand the value of the system and its practices.

On the other hand, our research shows that both implemented and perceived HRM systems directly affect task and relational crafting, and implemented HRM systems also indirectly affect task and relational crafting through perceived HRM systems. These findings extend the research of Meijerink et al. (2020), which only considers the influence of perceived HRM systems on job crafting. This is an important development because implemented HRM systems not only provide a contextual cue for perceived HRM systems but are also one of the most systematic contextual factors that affect employee behaviour (Chang et al., 2014). Our findings also confirm the necessity of simultaneously considering both implemented and perceived HRM systems when exploring the influence of HRM systems on job crafting. Previous research has found that implemented HRM systems have effects on employee behaviour which are not mediated through perceived HRM systems (Liao et al., 2009). By including implemented

HRM systems, we are able to capture these effects and get a more complete picture of how HRM systems influence job crafting than would be apparent if only employee perceptions were measured. Including implemented HRM systems also allows us to show how strong HRM system features can bring manager and employee views on HRM systems closer together.

Third, our research enriches the study of the boundary conditions between implemented and perceived HRM systems. Only two studies to date have empirically explored the boundary conditions between implemented and perceived HRM systems. These two studies focused on the management perspective and found that line managers' goal congruence (Zhang et al., 2018) and the quality of managers' communication (Den Hartog et al., 2013) positively moderated the relationship between implemented and perceived HRM systems. Unlike these two studies, our research focuses on the HRM process perspective and finds that the higher HRM system features are, the stronger the relationship between implemented and perceived HRM systems becomes. This finding expands the research on the boundary conditions between implemented and perceived HRM systems from the management perspective to the HRM process perspective. Our demonstration that strong HRM system features bring implemented and perceived HRM systems closer together indicates that content (implemented and perceived HRM systems) and process (HRM system features) are two inseparable aspects of HRM systems.

5.2 | Practical implications

First, our research has important practical implications for how organisations should implement HRM systems. Managers must pay attention to both the content (what kinds of HR practices will be effective in achieving organisational goals?) and the process (how can we create a system high in distinctiveness, consistency and consensus?). Although much research has shown that HRM systems can lead to increased firm performance and positive employee outcomes, the quality of implementation varies tremendously between organisations (Bowen & Ostroff, 2004). Therefore, in situations where management finds that HRM systems are ineffective at producing the expected employee behaviours, before coming to the conclusion that HRM systems are ineffective, employee opinions about the distinctiveness, consistency and consensus of the HRM systems should be solicited. Minor tweaks to improve these three HRM features can lead to a great increase in the reception to and effectiveness of HRM (Ostroff & Bowen, 2016).

Second, our findings suggest that managers can motivate employees to engage in task and relational crafting by effectively implementing both HRM content and process. On one hand, managers should implement HRM systems that include practices such as training, information sharing and participative management. This kind of HRM system can motivate employees to craft the task and relational aspects of their jobs. On the other hand, in order to maximise the incentive effect of HRM systems on task and relational crafting, managers should make sure that HRM systems are high in distinctiveness, consistency and consensus.

5.3 | Limitations

First, a major limitation is that we used the aggregate score of HR practices to measure HRM systems and the aggregate score of distinctiveness, consistency and consensus to measure HRM features. Although most existing studies have adopted this method (e.g., Den Hartog et al., 2013; Katou et al., 2014), it does pose weakness to this research.

Second, although we employed a two-wave time-lagged design, owing to concerns about taking up too much of the respondents' time, we were not able to measure all variables at each point in time. This means we cannot control for baseline levels, nor ascertain whether change has occurred in the variables over time. Thus, we cannot draw definitive conclusions about the causal relationship between HRM systems and job crafting.

Third, an HRM system is a very broad concept, so we can only claim the specific HRM system we measured is related to employee job crafting. However, this system includes practices common to other conceptualisations of high-performance or high-commitment HRM systems such as training, employee participation, financial incentives and performance appraisal. Therefore, we believe that other systems including such practices may also influence job crafting.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to report.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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