

RESEARCH ARTICLE

A needs–supplies fit perspective on employee perceptions of HR practices and their relationship with employee outcomes

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Abstract

This study explores the employees' views on the effectiveness of HR practices for their job performance, drawing from a needs–supplies (N–S) fit approach. Findings based on 465 employees show a positive association between the N–S fit of present HR practices (i.e., employees perceiving supplied practices as needed) and engagement and proactive behaviour. The N–S fit of absent HR practices (i.e., employees indicating they do not need the non-offered practices) is positively associated with engagement and negatively with proactive behaviour. Additionally, proactive behaviour and engagement are higher when employees experience present practices as effective and absent practices as irrelevant for their functioning. Also, these outcomes are higher when employees experience supplied practices as effective while missing essential practices, than when the supplied practices are ineffective and absent practices are irrelevant. Organisations can use this approach to revisit HR practices that waste organizational resources and introduce HR practices that improve employee functioning.

Abbreviations: CFA, confirmatory factor analysis; CFI, comparative fit index; D-A fit, demands-abilities fit; HR, human resource; HRM, human resource management; N–S fit, needs–supplies fit; NSF-E-A, need supplies fit of absent practices; NSF-E-P, need supplies fit of present practices; PE-fit, person–environment fit; RMSEA, root mean square error of approximation; SHRM, strategic human resource management; SRMR, standardized root mean square residual; TLI, Tucker-Lewis index; WLSMV, weighted least squares mean and variance.

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KEYWORDS

effectiveness of HR practices, employee perceptions of HR practices, engagement, needs–supplies fit, proactive work behaviour

Practitioner notes**What is currently known about the subject?**

- Employees as key recipients of HR practices are seen as an important source of information regarding the contribution of HR practices to employee outcomes.
- There is evidence for the positive relationship between HRM and perceived performance from an (HR) management perspective. However, evidence on how employees perceive the effectiveness of present and absent HR practices for their work performance is currently lacking in SHRM literature.

What this paper adds?

- By adopting a needs–supplies fit perspective on employee perceptions of HR practices, results show that employee engagement is higher when employees perceive supplied practices as needed and indicate that they do not need those that are not supplied.
- Proactive work behaviour increases when employees perceive supplied practices as helping them work effectively but also when employees indicate they miss practices they would have needed to perform better.
- Proactive work behaviour and engagement are higher when employees experience present practices as effective while missing essential practices than when the present practices are ineffective and absent practices are perceived as irrelevant.

Implications for practitioners

- Organisations and employees should consider the extent to which employees perceive existing and missing HR practices as needed to help them work effectively.
- Rather than aiming for a large number of available HR practices, HR professionals should strive for making the best possible use of HR practices by considering whether practices that are currently offered lack added value for employees, as well as by considering adding practices where this would enable employees to function better.

1 | INTRODUCTION

The underlying premise in HRM research is that implemented HR practices are perceived by employees so that they contribute to individual job performance and, in turn, organizational performance (see e.g., Den Hartog et al., 2013; Liao et al., 2009). However, even though studies have found a positive relationship between perceptions of available HR practices and job performance, we do not know to what extent employees, as key recipients, and therefore crucial assessors of HR practices, perceive these as effective for their functioning (Edgar & Geare, 2014). This is important to investigate, as scholars have argued that if HR practices are expected to contribute to improved individual performance, it is essential that the HR practices match the employee's personal goals to work effectively (Nishii & Wright, 2008). We herewith join other authors stating that a universalistic approach -assuming that HR practices are experienced as effective by all employees- is not likely, but rather that the perceived effectiveness of present and absent HR practices depends on the fit with the individual worker context to affect employee outcomes (Kinnie

et al., 2005). Therefore, this study explores employees' views on the effectiveness of present and absent HR practices for their job performance. To this end, we address three research gaps in more detail.

First, studies to date which have included evaluative measures of employee perceptions of HR practices have mainly focussed on attitudinal measures of perceptions of HR practices, such as the perceived satisfaction with, fairness of, or meaningfulness of the HR practices in place (e.g., Heffernan & Dundon, 2016; Kinnie et al., 2005). As such, our understanding of non-attitudinal evaluative measures of employee perceptions of HR practices and how they impact employee outcomes is still limited. More specifically, it is essential to ask employees about the effective contribution of HR practices to their job performance (Van Beurden et al., 2020). The few studies that measured effectiveness perceptions of HR practices in their research are unclear as to what outcome criterion employees are asked to evaluate the effectiveness of the HR practices for (e.g., their performance, well-being, justice etc.) (see e.g., Chang, 2005). This state of research is surprising, given the large number of studies that have examined the effectiveness of HR practices in terms of organizational performance from the perspective of other informants than employees, such as (HR) managers (Guest & Conway, 2011). We, therefore, contribute to the literature on evaluative employee perceptions of HR practices by explicitly focussing on the effectiveness perceptions of HR practices for employee's own functioning (Van Beurden et al., 2020).

The second research gap concerns that most existing studies examining a particular conceptualisation of employee perceptions of HR practices lack a clear theoretical perspective in which the employee perceptions of HR practices construct is anchored (Edgar & Geare, 2014; Van Beurden et al., 2020). More specifically, studies tend to focus on the relationship between perceptions of HR practices and employee outcomes without clearly explaining how a theoretical perspective can elucidate the construct of employee perceptions of HR practices. Consistent with the argument of Nishii and Wright that "individuals perceive HR practices through different lenses and make varying conclusions about the extent to which the practices satisfy their needs" (p. 13), and with the idea that HR practices are sets of organizational supplies (Peccei et al., 2013), we rely on a needs-supplies (N-S) fit perspective (Edwards, 1991). Specifically, we examine the attitudinal and behavioural consequences of perceived fit between present and absent HR practices and the needs that employees have concerning functioning effectively at work. In addition, we examine the extent of (in)congruence in the fit between employees' needs to function effectively and organizational supplies in terms of HR practices (Kristof-Brown et al., 2005).

Third, building on the theoretical ideas from the N-S fit perspective, we propose that the positive effect of present HR practices on job performance (see e.g., Den Hartog et al., 2013; Liao et al., 2009) is more favourable if employees perceive the present HR practices as contributing to functioning well at work. In addition, we propose that the negative effect of absent HR practices on job performance is less negative if the absent HR practices are not missed to function well (Van Vianen, 2018). By consulting the individual worker on how effective present *and* absent HR practices are perceived in terms of facilitating or hindering employees' work performance (Van Beurden et al., 2020), we aim to provide new insights about (a) how there might be a waste of organizational resources via ineffective HR practices and (b) how the absence of valuable HR practices may have prohibited better functioning at work. We do this by studying two indicators that are considered highly relevant in today's work context, that is, work engagement and proactive behaviour, and that have been shown to have an important impact on organizational performance in previous research (Parker & Bindl, 2016; Van De Voorde et al., 2012).

1.1 | A needs-supplies fit perspective on employee perceptions of HR practices

The starting point of our study is the employment relationship (Tsui et al., 1997), that is, the employer's expectations about specific contributions from employees (work performance) and the inducements (HR practices) that the employer offers to affect such desired contributions. Following recent attention to the idea that individuals experience HR practices through different lenses and therefore evaluate HR practices differently, depending on the extent to which the practices satisfy the individual's needs (Lepak & Boswell, 2012; Nishii & Wright, 2008), we propose

to build on insights from the N–S fit perspective (Edwards, 1991) to better understand the construct of employee perceptions of HR practices.

N–S fit can be defined as “the comparison between the psychological needs (i.e., desires, values, goals) of the person and the environmental supplies that serve as a reward for the needs” (Edwards et al., 2006, p. 804). Different types of fit are distinguished based on whether attributes are present or absent at work and how they relate to employees' personal needs (Van Vianen, 2018). Thus, drawing from the N–S fit approach, we distinguish between (1) the extent to which employees perceive present HR practices as effective for their functioning and (2) the extent to which employees perceive absent HR practices as not missed for their functioning at work (Idson et al., 2000). In addition, we use a molar approach, that is, a direct measure of need-supply fulfilment, by focussing on the extent to which employees evaluate the HR practices as fitting with their need to work effectively (Cable & DeRue, 2002; Edwards et al., 2006). We focus on this type of measure as previous studies have shown that a molar approach captures the most proximal predictors of individual outcomes (Kristof-Brown et al., 2005).

More precisely, we consider the extent to which employees experience the supplied HR practices as sufficient and necessary for their performance, that is, the extent to which there is a fit or match between the HR practices supplied by the organization and the employees' need to work effectively. The first part of this equation (are practices offered necessary?) aims to ensure that existing practices do not waste organizational resources (including employees' time and energy) and will be referred to as the N–S fit for the effectiveness of present practices (hereafter NSFE-P). The latter part (are practices offered sufficient?) aims to ensure that the organization is not missing out on practices that would have been useful or beneficial for employees' functioning at work. This will be referred to as the N–S fit for the effectiveness of absent practices (hereafter NSFE-A). For example, for NSFE-P, consider a firm where supervisors provide regular performance reviews. For employees who believe such reviews contribute to their work performance (i.e., they are necessary to work effectively), the NSFE-P will be high. For employees who believe such reviews make no such contribution (i.e., they are unnecessary), the NSFE-P will be low. Now, assume a firm where supervisors do not conduct periodic performance reviews. For employees who believe such reviews would improve their performance, the NSFE-A will be low (i.e., the employee's need is not being met, and the firm's provision is insufficient). For employees who believe such reviews would not contribute to their performance, the NSFE-A will be high (i.e., the employee evaluates the performance review practice as not essential for their functioning, it is not missed by them).

In our study, we include a set of HR practices that can be seen as organizational supplies, that employees can relate to their functioning, and that is most often studied in the SHRM literature (Boselie et al., 2005): that is, practices in the realms of employee training and (career) development, performance management, job design, participation, communication/information sharing, and rewards (Boon et al., 2011). We excluded recruitment and selection practices from our study, as these focus more on human capital than on employee experiences as a path towards performance improvement and are mainly functional for the organization and/or team level (Wang et al., 2008). In addition, employees are typically not (all) involved in recruitment and selection in their team on a routine basis. They are therefore unlikely to be able to adequately attribute their individual functioning to such HR practices (Den Hartog et al., 2013).

We examine two potential outcomes of the effectiveness of present and absent HR practices relevant in the context of individual functioning and crucial for organizational success (Parker & Bindl, 2016; Van De Voorde et al., 2016). Proactive work behaviour is defined as “self-directed action to anticipate or initiate change in the work system or work roles” (Griffin et al., 2007, p. 329). It is an essential indicator of job performance in today's context of an increasingly complex and uncertain workplace, pressure for innovation, and changing career structures (Parker & Bindl, 2016). Work engagement is an active form of well-being characterised by vigour, dedication, and absorption at work (Schaufeli et al., 2006). This construct is positively related to job performance and predicts job performance over and above other job attitudes such as job satisfaction, organizational commitment, and job involvement (Christian et al., 2011).

1.2 | The relationship between NSFE-P and NSFE-A and employee outcomes

To explain how NSFE-A and NSFE-P result in employee outcomes, we use the guiding principles associated with the person-environment fit literature, and the sub stream within that literature on needs-supplies fit. These guiding principles are that (1) fit is a more powerful predictor of individual outcomes than the person (e.g., employees' needs) or the environment alone (e.g., supplies), (2) outcomes are most optimal when personal attributes and environmental attributes are congruent regardless of the level of the attributes, and (3) discrepancies or misfits between personal and (absent) environmental attributes decrease positive outcomes regardless of the direction of the mismatch (Van Vianen, 2018). Applying these principles, we expect that effectiveness perceptions of the present and absent HR practices combined are a more powerful predictor of work engagement and proactive work behaviour than merely asking employees to check the presence of HR practices and that these outcomes are higher when the present HR practices are perceived as contributing to employees' functioning and the absent HR practices are not missed to function well, compared to when present HR practices lack in contribution to performance and absent practices are missed to function well (Cable & DeRue, 2002; Edwards et al., 2006).

Empirical evidence has found support for the guiding principles associated with needs-supplies fit and employee outcomes. In particular, research has shown that fit between the person and the environment is indeed a more powerful predictor than the person or environment alone (Kristof-Brown et al., 2005). Second, studies have confirmed that a fit between the employees' needs and the supplies offered by the organization is related to more favourable outcomes than a misfit between needs and supplies (Cao & Hamori, 2020). That is, employees, show higher levels of employee outcomes such as engagement at work when they perceive a fit between the supplies provided by the organization and their own needs (e.g., Edwards et al., 2006; Travagianti et al., 2016; Verquer et al., 2003; Vogel et al., 2020). In addition, studies focussing on specific work characteristics such as the N-S fit of autonomy (as part of job design practices) have shown a positive impact on proactive work behaviour (Yu & Davis, 2016). Finally, research has shown that absent attributes at work that are perceived as needed or preferred are negatively related to employee outcomes (Idson et al., 2000).

In sum, studies have argued that a high fit between present environmental attributes and employees' needs results in higher employee outcomes compared to a low fit and that a high fit between absent environmental characteristics that employees do not perceive as needed results in more positive employee outcomes compared to absent environmental attributes that employees perceive as needed (De Goede et al., 2013; Idson et al., 2000; Van Vianen, 2018). Following this line of reasoning, we argue that a high NSFE-P—that is, a perception that all organizational supplies are needed to work effectively—will be associated with higher proactive work behaviour and employee work engagement, compared to a low NSFE-P (a sense that some supplies are not needed). Furthermore, we hypothesise that a high NSFE-A (where employees feel that the practices that are not supplied are not needed) will be associated with higher employee engagement and proactive work behaviour, compared to a low NSFE-A (where practices are perceived as useful for functioning well but are not supplied) (Kristof-Brown et al., 2005). Formally, we propose:

Hypothesis 1: Employee perceptions of the NSFE-P are positively associated with proactive work behaviour (1a) and employee engagement (1b).

Hypothesis 2: Employee perceptions of the NSFE-A are positively associated with proactive work behaviour (2a) and employee engagement (2b).

1.3 | Congruence and incongruence of NSFE-P and NSFE-A in relation to employee outcomes

In case it does matter that a firm's HR practices are not entirely necessary and/or sufficient, the next question becomes which has the more significant detrimental impact—the waste of time and other supplies because of

superfluous, unnecessary practices; or the absence of valuable practices that would have supported better performance? We align with P-E fit literature arguing that the work environment should be explored in terms of both the NSFE-P and NSFE-A simultaneously, for which we suggest assessing combinations of employee perceptions of HR practices (HR practices seen as both necessary and sufficient) (Idson et al., 2000; Van Vianen, 2018). Following the P-E fit literature, we explore, next to considering the effects of NSFE-P and NSFE-A directly, whether concurrent high or low scores on both types of fit impact employee outcomes. In addition, we explore the extent to which employee outcomes are affected by situations in which the score on one of the fits is higher than the score on the other fit: NSFE-P > NSFE-A, or NSFE-P < NSFE-A (Yang et al., 2008).

We consider first the two extreme congruence conditions (high vs. low). Drawing from the N-S fit approach, we first argue that a high N-S fit for both present and absent HR practices will lead to better outcomes than a low fit for both types (Kristof-Brown et al., 2005). More specifically, where the N-S fit is high for both present and absent practices, existing practices are seen as both necessary and sufficient. In this case, employees who feel that their needs to work effectively are fully met by the HR practices supplied by the organization, and herewith do not miss out on any HR practices, are especially likely to reciprocate with favourable attitudes and behaviours towards the organization (Verquer et al., 2003).

Prior research has shown positive outcomes for a high N-S fit in terms of work characteristics on proactive work behaviour (Yu & Davis, 2016) and work engagement (Travagianti et al., 2016). Therefore we also expect to find positive outcomes for high NSFE-P and NSFE-A. In the alternative case, when an employee experiences low N-S fit for both sets of practices (offered practices are neither wholly necessary nor sufficient and practices not offered would have been considered an improvement), employees feel that they are not receiving the support they need to function well. At the same time, they are also asked to waste time and energy on unnecessary activities. We expect reduced work engagement and proactive work behaviour in this case, as misfit occurs for both N-S fits. Based on the preceding, we propose:

Hypothesis 3: Employee perceptions of congruence between the NSFE-P and NSFE-A are associated with higher (lower) proactive work behaviour (3a) and work engagement (3b), when NSFE-P and NSFE-A are high rather than low (low rather than high).

We now consider incongruence between NSFE-P and NSFE-A and its relationship with employee outcomes. Incongruence can exist when NSFE-P is high, that is, when employees feel that their needs to work effectively are met by the HR practices supplied by the organization, but the NSFE-A is low, that is, they are not receiving the critical HR practice they need to function well. On the opposite, NSFE-P can be perceived as low, that is, employees are asked to spend time and energy on unnecessary practices, but the NSFE-A is high, that is, employees perceive they do not miss out on any HR practices. In both situations, a misfit occurs for only one of the two types of N-S fit of HR practices perceptions (Edwards, 1991).

From the SHRM literature, we know that organisations where employees perceive that the organization offers more HR practices to them (i.e., invest in the employment relationship) outperform organisations where employees do not perceive much HRM investment (Den Hartog et al., 2013; Liao et al., 2009). Whereas more investment is likely accompanied by better employee outcomes, this does not tell the full story. More specifically, prior N-S fit research argues that it is important to differentiate between the (mis)fit of personal values with present and absent attributes at work (Idson et al., 2000; Van Vianen, 2018). Empirical evidence shows that employee outcomes are higher when employees encounter present attributes they do not prefer at work, than when employees with a need for organizational attributes do not receive these from their organization (Van Vianen, 2018). Extrapolating this to our study, we expect that employees will exhibit higher engagement and proactive work behaviour when the NSFE-P is higher than NSFE-A, meaning that existing practices are all useful but are not sufficient, compared to the opposite case, where nothing is missing but employees must waste time and energy on superfluous activities.

Hypothesis 4: Employee perceptions of incongruence between the NSFE-P and NSFE-A are associated with higher (lower) proactive work behaviour (4a) and engagement (4b), when the NSFE-P is higher (lower) than the NSFE-A.

2 | METHOD

2.1 | Sample and procedure

This study used a quantitative research design. An online questionnaire was sent to a sample of Dutch employees working in various sectors. Employees were selected through a network of master's students in HR studies as part of their thesis project, under close supervision of the authors. The employees received an invitation via e-mail with a link to the digital questionnaire, a set of instructions, and an introductory statement. Informed consent was obtained from the respondents through a digital form in the questionnaire. The institution's Ethics Review Board gave permission and confirmed that the respondents' privacy and rights were sufficiently taken into account (No. EC-2018.43). A reminder was sent by e-mail after a week to increase the response rate.

In total, 827 employees were approached to participate in the research, and 470 returned completed questionnaires (a response rate of 56.8%). Five respondents were removed due to incomplete data, yielding a final sample of 465. The majority of respondents worked in business services (34.4%), education (8.1%), production (9.4%), government (4.3%), and healthcare (21.5%). Of the final sample, 63.4% were female, and the average age was 32 years. About employment type, 57.2% of the respondents had a permanent contract, 28.3% a temporary contract, and 9.6% a zero-hours contract. A zero-hours contract is a common type of employment contract in the Netherlands where the employee has no fixed working hours.

2.2 | Instruments

Our survey measures captured the N-S fit of HR practices, work engagement, and proactive work behaviour. As we developed the measurement of N-S fit of HR practices based on existing scales examining employee perceptions of the present and absent HR practices, we first describe our procedure for operationalising this construct.

Employee Perceptions of Present and Absent HR practices were measured for six functional HRM areas: employee training and (career) development, performance management, job design, participation, communication/information sharing, and rewards. We adapted 20 items from existing scales measuring the presence of HR practices (Boon et al., 2011; Den Hartog et al., 2013). For each item, we first asked respondents to indicate whether the HR practice was present or absent (a sample item: "My performance is periodically assessed by my supervisor"). To ascertain as clearly as possible whether the employee perceived the activity to be present (Bal et al., 2013), we used a dichotomous indicator for these items (0 = 'no' and 1 = 'yes', for absent or present, respectively).

Next, we employed follow-up questions to examine the **N-S Fit of Present and Absent HR Practices**, that is, the fit between employees' perceptions of HR practices needed versus those supplied. These questions differed depending on whether the employee perceived the practice as present or absent. For example, the item "My performance is periodically assessed by my supervisor" led to these follow-up questions for present and absent, respectively: "My work results have improved in the last year as a result of periodic assessments from my supervisor"; "My work results would have improved in the last year had I received periodic assessments from my supervisor." These follow-up questions were answered on a 5-point Likert scale (1 = totally disagree, 5 = totally agree). A high score on a 'present' item means the employee perceived the HR practice as meeting the need to work effectively. For the 'absent' items, scores were recoded such that a high score means the employee perceived the HR practice as not meeting the need to work effectively.

In the following step, for each participant, we calculated two overall fit scores based on that participant's perceptions of HR practices needed versus those supplied. For the *NSFE-P*, we calculated a sum score of all follow-up questions of present HR practices, and we divided this score by the number of present HR practices. For the *NSFE-A*, we created a sum score based on all follow-up questions of absent HR practices, and we divided this score by the number of absent HR practices. A high *NSFE-P* score means a high fit between what the employee thinks he or she needs to function effectively at work and what the organization supplies in terms of HR practices. A high *NSFE-A* score means a high fit between what the employee thinks he or she does not need to function effectively at work and what the organization does not supply in terms of HR practices. Appendix A provides an overview of the item construction and scoring for the N-S fit measures, and Appendix B provides a list of the concrete items.

To examine the validity of our measures, we performed confirmatory factor analysis (CFA) using Mplus (version 8.3) and robust weighted least square (WLSMV) estimation. Evaluating the model fit of the N-S fit scales in the traditional manner is not possible, as the mix of the *NSFE-P* and *NSFE-A* items across the scales varies from one employee to the next, based on the presence/absence indicated and the follow-up questions they filled in. Therefore, we could only evaluate the model fit of the presence/absence of the HR practices scale. Following the recommendation of Hu and Bentler (1998), we used multiple indices of fit, including the Tucker-Lewis index (TLI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). For the TLI and CFI, values of 0.90 are acceptable, and values of 0.95 or higher indicate a good fit; and for the RMSEA and SRMR, values of 0.08 or lower are acceptable, and values below 0.05 indicate a good fit (Hu & Bentler, 1998). These analyses used the six HR practices as first-order factors and the overall HR system as a second-order factor. The results showed sufficient model fit, validating use of the present/absent HR practice measures to create overall HR system N-S fit scores (CFI = 0.95, TLI = 0.95, RMSEA = 0.04, SRMR = 0.09). Cronbach's alpha for this scale was 0.75.

Other measures. To measure *work engagement*, a nine-item version of the Dutch Utrecht Work Engagement Scale was used (Schaufeli et al., 2006). Answers were given based on a 7-point Likert scale (1 = never, 7 = always). A sample question: "At my job, I feel strong and vigorous." Cronbach's alpha for this scale was 0.92.

Proactive work behaviour was measured with the three-item scale of Griffin et al. (2007). Answers were given on a 7-point Likert scale (1 = never, 7 = always). A sample item was: "How often in the past month did you come up with ideas to improve the way in which your core tasks are done?". Cronbach's alpha for this scale was 0.87.

Control variables. We controlled for employees' *job proficiency*, *gender* (0 = male, 1 = female), *age* in years (a continuous variable), *sector*, and *the number of HR practices* (a sum score of the 20 dummy variables). Sector, including business services, education, production, government, and healthcare, was measured with four dummy variables (business services, education, production, and government), using healthcare as the reference category. We measured job proficiency using the three-item version of Griffin et al. (2007). Answers were given on a 7-point Likert scale (1 = never, 7 = always). A sample question was: "How often in the past month did you carry out the core parts of your job well?". Cronbach's alpha for this scale was 0.81. We included job proficiency to control for common method bias and as a type of self-serving bias to work performance evaluations (Greenberg, 1991). Previous research has shown that gender affects employee behaviours (Kidder, 2002) and that the effect of HR practices on employee outcomes varies with age (Kooij et al., 2013). Empirical research has also identified differences in how employees in different sectors perceive HR practices (Boselie et al., 2005). Finally, we controlled for the *number of HR practices*, as empirical evidence showed a positive relationship between the presence of HR practices and employee outcomes (Den Hartog et al., 2013). Controlling for this variable enabled us to test whether the *NSFE-P* and *NSFE-A* explain additional variance beyond these practices' mere presence.

2.3 | Data analysis

Given that the data are from the same source (employees), we performed a one-factor test to examine the different constructs' distinctiveness and check for common source bias (Podsakoff et al., 2003). Of the four constructs in the

current study (NSFE-P, NSFE-A, proactive work behaviour, and engagement), the principal factor on the scale scores explained only 39.62% of the variance, well under 50%. Thus, these results support the discriminant validity of the measures. In addition, we checked for common method bias using the common latent factor technique (Podsakoff et al., 2003). An additional latent variable was added to the CFA, where all paths were constrained to be equal and the variance to be 1. The factor loadings of the CFA with only the studied variables showed very small differences in factor loadings, compared to the CFA with the additional common latent factor, suggesting that common method bias is not a serious concern.

To test Hypotheses 1 and 2, we conducted multiple regression analyses in SPSS. For Hypotheses 3 and 4, we used polynomial regression analysis in combination with response surface analysis. This technique tests whether the level and direction of congruence/incongruence influences outcomes and are considered an appropriate way to analyse fit data based on perceptions (Edwards, 1994; Yang et al., 2008). The use of this combined technique is justified as long as the predictor variables fall into the same conceptual domain and are measured on the same Likert scale (Edwards, 1994; Shanock et al., 2010). In our study, both assumptions are met: our predictor variables represent the same latent construct, that is, HR practices, for NSFE-P and NSFE-A, and both are measured on a 5-point Likert scale.

The equation below represents the polynomial regression for the (in)congruence between the two types of N-S fit (the control variables are removed here for the sake of simplicity):

$$Y = b_0 + b_1P + b_2A + b_3P^2 + b_4(PXA) + b_5A^2 + e,$$

where Y refers to the employee outcomes (proactive work behaviour and work engagement), *p* represents NSFE-P, and A represents NSFE-A. We scale-centred both predictor variables to remove multicollinearity issues, following Edwards's (1994) recommendation.

Surface response analysis was used following the regression to analyse the (in)congruence between the two types of N-S fit for effectiveness (Shanock et al., 2010). This analysis uses the coefficients of the polynomial regression to test the slopes and curvatures along two lines. The first line is the congruence or fit line ($P = A$) used to test Hypothesis 3, and the second is the incongruence line ($P = -A$) used to test Hypothesis 4. These lines are used to visually present the effects of (in)congruence in a three-dimensional graph (see Figures 1 and 2). We conducted our analyses using weighted scores (ranging from 10 = midpoint of the 20 HR practices, to 1 = only 1 HR practice reported as either absent or present) based on the number of HR practices variable, allowing us to include a more balanced assessment, and to correct for the reliability of the scores of respondents with fewer observations, either as to absent practices or as to present practices.

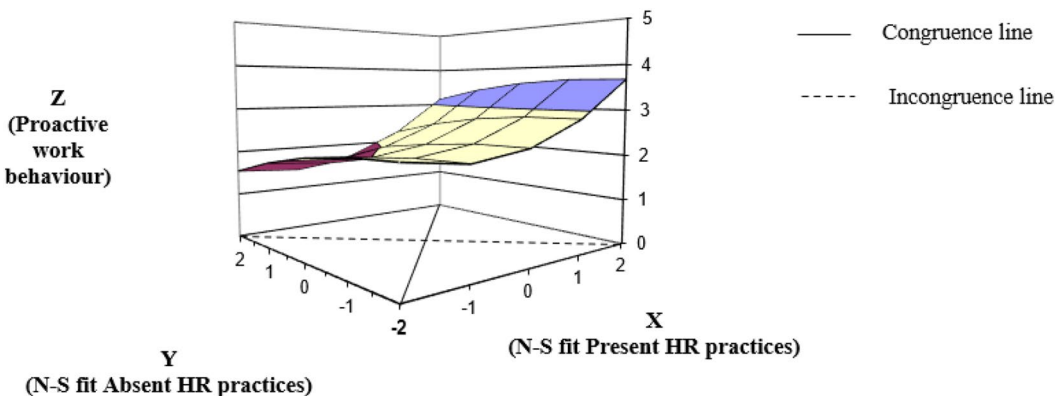


FIGURE 1 Response surface analysis for employee perceptions of N-S fit of present HR practices and N-S fit of absent HR practices on proactive work behaviour [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1748-8883.12499)]

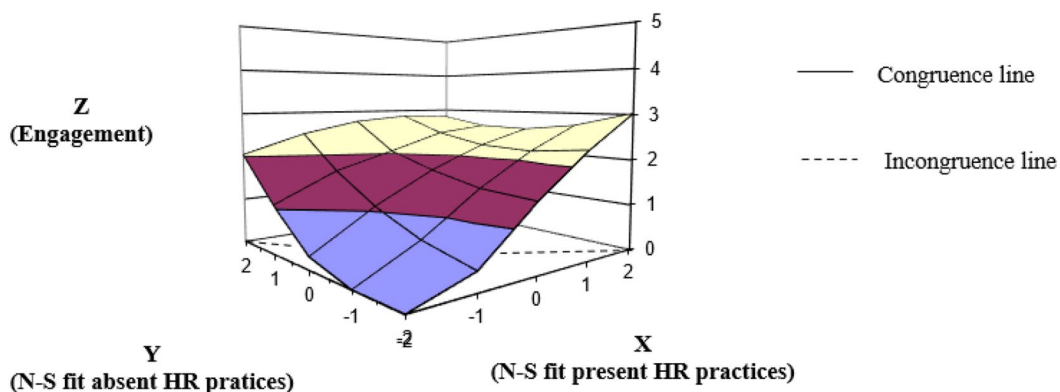


FIGURE 2 Response surface analysis for employee perceptions of N-S fit of present HR practices and N-S fit of absent HR practices on engagement [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1748-8883.12499)]

3 | FINDINGS

3.1 | Descriptive statistics

Table 1 summarises the descriptive statistics for all variables, including their means, standard deviations, and correlations. NSFE-P and NSFE-A are negatively correlated ($r = -0.05, p > 0.05$), supporting the idea that the two N-S fit scales capture different constructs. Employee perceptions of NSFE-P are positively correlated with engagement and proactive work behaviour ($r = 0.27, p < 0.01, r = 0.25, p < 0.01$ respectively). In other words, the more employees feel the HR support they are receiving is necessary for their functioning, the more engaged and proactive they are likely to be. Employee perceptions of the NSFE-A are positively correlated with engagement ($r = 0.30, p < 0.01$). The more employees feel the HR support they are not receiving is not missed to function well, the higher their engagement.

3.2 | Hypothesis testing

Table 2 summarises the results of the multiple regression analyses for both outcome variables. Consistent with Hypotheses 1a and 1b, these results show that employee perceptions of the NSFE-P are positively associated with proactive work behaviour ($B = 0.47, p < 0.01$) and employee engagement ($B = 0.45, p < 0.01$). As to Hypothesis 2, the NSFE-A was positively associated with engagement ($B = 0.28, p < 0.01$), supporting Hypothesis 2b. However, the findings show a significant negative association between NSFE-A and proactive work behaviour ($B = -0.17, p < 0.01$). Thus, Hypothesis 2a is rejected.

For Hypothesis 3, we analyse the relationship between congruence in the perceived NSFE-P and NSFE-A and employee outcomes. We expect that congruence between the two measures of N-S fit will be associated with higher (lower) engagement and proactive work behaviour when the N-S fit for both measures is high rather than low (low rather than high). The results are presented in Table 3. With respect to proactive work behaviour, Table 3 shows that the slope of the congruence line is positive and significant, but the curvature is not significant (slope = 0.21, $p < 0.05$, curvature = 0.13, $p < 0.05$). As depicted in Figure 1, the surface along the congruence line is linear. In other words, proactive work behaviour is high when employees experience high levels of both types of N-S fit compared to low levels of both. Hypothesis 3a is therefore supported.

Furthermore, as can be seen in the table, there is a positive slope and significant curvature along the congruence line for engagement (slope = 0.90, $p < 0.01$, curvature = -0.18, $p < 0.05$). These results indicate that congruence between the NSFE-P and NSFE-A has a positive non-linear association with engagement, meaning that engagement

TABLE 1 Descriptive statistics

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	1.63	0.48												
2. Age	33.85	12.40	-0.19**											
3. Sector ¹ (hc.)	0.28	0.45	0.34**	0.15**										
4. Sector ¹ (bus. serv.)	0.44	0.50	-0.23**	-0.13**	-0.55**									
5. Sector ¹ (education)	0.11	0.31	0.08	-0.10	-0.31**	-0.31**								
6. Sector ¹ (prod.)	0.12	0.32	-0.19**	0.11*	-0.33**	-0.13*	-0.13**							
7. Sector ¹ (gov.)	0.06	0.23	0.00	-0.03	-0.22**	-0.08	-0.09	-0.09						
8. HR presence	13.15	3.49	-0.20**	0.20**	0.06	-0.08	0.04	-0.07	-0.07					
9. Job proficiency	5.65	0.74	0.10*	0.04	-0.07	0.09	0.05	-0.08	-0.02	0.02				
10. NSFE-P	3.44	0.50	0.01	-0.14**	-0.07	-0.02	-0.00	0.01	0.22**	-0.02	-0.02			
11. NSFE-A	3.25	0.75	0.10**	0.16*	-0.11*	-0.04	0.07	-0.04	0.20**	0.12**	-0.05	-0.05		
12. Engagement	4.77	1.08	0.08	0.22**	-0.20**	0.07	0.02	-0.15**	0.41**	0.21**	0.27**	0.30**	0.30**	
13. Proactive work behaviour	4.59	1.11	-0.08	0.13**	0.04	0.04	-0.02	-0.05	0.29**	0.15**	0.25**	-0.05	0.29**	0.30**

Note: N = 465; *p < 0.05; **p < 0.01. Bus. serv. = business services; gov. = government; hc = healthcare; prod. = production.

TABLE 2 Multiple regression analyses of proactive work behaviour and work engagement

	Proactive work behaviour				Work engagement			
	Model 1		Model 2		Model 1		Model 2	
	B	(s.e.)	B	(s.e.)	B	(s.e.)	B	(s.e.)
Constant	2.76**	(0.23)	2.21**	(0.22)	1.99**	(0.19)	1.92**	(0.19)
Gender	-0.12*	(0.05)	-0.10*	(0.05)	0.22**	(0.05)	0.18**	(0.04)
Age	0.01**	(0.00)	0.01**	(0.00)	0.01**	(0.00)	0.01**	(0.00)
Sector (bus. serv.)	0.08	(0.06)	0.14*	(0.06)	-0.49**	(0.05)	-0.36**	(0.05)
Sector (education)	0.23**	(0.08)	0.28**	(0.08)	-0.04	(0.07)	0.05	(0.06)
Sector (production)	-0.11	(0.08)	-0.09	(0.08)	-0.35**	(0.07)	-0.32**	(0.06)
Sector (government)	-0.09	(0.10)	-0.05	(0.10)	-0.82**	(0.08)	-0.75**	(0.08)
HR presence	0.09**	(0.01)	0.08**	(0.01)	0.11**	(0.01)	0.08**	(0.01)
Job proficiency	0.10**	(0.03)	0.14**	(0.03)	0.17**	(0.03)	0.17**	(0.03)
NSFE-P			0.47**	(0.04)			0.45**	(0.04)
NSFE-A			-0.17**	(0.03)			0.28**	(0.03)
R ²	0.09**		0.15**		0.24**		0.32**	
Δ R ²			0.06**				0.08**	

Note: $N = 465$. * $p < 0.05$; ** $p < 0.01$.

Healthcare was used as the reference category. Unstandardised regression coefficients are reported.

increases along the congruence line. In addition, engagement decreases more sharply as both NSFE-P and NSFE-A become lower. Figure 2 shows that engagement increases from the front corner of the figure to the back corner on the respective surfaces, supporting Hypothesis 3b.

Hypothesis 4 suggests that incongruence between the perceived NSFE-P and NSFE-A will be associated with higher (lower) proactive work behaviour and engagement when the N-S fit of present HR practices is higher (lower) than that of absent practices. For proactive work behaviour, Table 3 shows a positive significant slope and no significant curvature (slope = 0.53, $p < 0.01$, curvature = 0.10, $p > 0.05$). Furthermore, results show a positive slope and significant curvature along the incongruence line for engagement (slope = 0.25, $p < 0.01$, curvature = 0.20, $p < 0.01$). As shown in Figures 1 and 2, proactive work behaviour and engagement increase as NSFE-P increases to equal NSFE-A (from the left corner to the incongruence point) and when NSFE-P is higher than NSFE-A (from the congruence point to the right corner). Furthermore, as depicted in Figure 2, the surface along the incongruence line is curvilinear, suggesting a non-linear effect of the incongruence line between NSFE-P and NSFE-A on engagement. In other words, engagement is relatively high when employees experience either high N-S fit of present HR practices and low N-S fit of absent HR practices or vice versa. Hypotheses 4a and 4b are therefore both supported.

4 | DISCUSSION

This study adopted a needs-supplies fit approach (Edwards, 1991; Kristof-Brown et al., 2005) towards employee evaluations of HR practices (Lepak & Boswell, 2012; Nishii & Wright, 2008) to explore how proactive work behaviour and work engagement are influenced by employees' perception of the effectiveness of present and absent HR practices, using a direct fit measure.

Our findings show that a high fit between employees' needs to function effectively and offered HR practices is positively associated with proactive work behaviour and work engagement. This builds on the idea that fit between

TABLE 3 Results of the polynomial regression analyses

	Proactive work behaviour		Work engagement	
	B	(s.e.)	B	(s.e.)
Constant	2.20**	(0.23)	1.73**	(0.19)
Polynomial terms				
N-S fit–Present (P)	0.37**	(0.06)	0.57**	(0.05)
N-S fit–Absent (A)	-0.16**	(0.04)	0.33**	(0.03)
P ²	0.16**	(0.06)	-0.08	(0.05)
A ²	-0.05	(0.03)	0.09**	(0.03)
P X A	0.02	(0.05)	-0.19**	(0.04)
HR presence	0.08**	(0.01)	0.08**	(0.01)
Job proficiency	0.13**	(0.03)	0.19**	(0.03)
Gender	-0.10*	(0.05)	0.19**	(0.04)
Age	0.01**	(0.00)	0.01**	(0.00)
Sector ¹ (bus. serv.)	0.14*	(0.06)	-0.35**	(0.05)
Sector ¹ (education)	0.29**	(0.08)	0.05	(0.06)
Sector ¹ (production)	-0.08	(0.08)	-0.30**	(0.06)
Sector ¹ (government)	-0.04	(0.10)	-0.75**	(0.08)
R ²	0.15**		0.33**	
Congruence line (P = A)				
Slope	0.21*	(0.09)	0.90**	(0.08)
Curvature	0.13	(0.08)	-0.18*	(0.08)
Incongruence line (P = -A)				
Slope	0.53**	(0.06)	0.25**	(0.04)
Curvature	0.10	(0.08)	0.20**	(0.05)

Note: N = 465; * $p < 0.05$; ** $p < 0.01$.

Analyses performed while controlling for age, gender, sector¹ (healthcare is the reference category), HR presence, and job proficiency; unstandardised regression coefficients reported.

the person and environment is a more powerful predictor than the person or environment alone (Van Vianen, 2018). In line with prior research on this issue outside HRM, employees are more engaged and more proactive at work when they perceive existing organizational HR practices as helping them work effectively (Travaglianti et al., 2016; Yu & Davis, 2016). Furthermore, following N-S fit in terms of discrepancies between personal and (absent) environmental attributes, results show that a high NSFE-A—that is, a perception that practices which are not supplied are also evaluated as not needed for effective functioning—is positively associated with work engagement and negatively associated with proactive work behaviour. We know from the N-S fit literature that a dearth of resources is associated with diminished employee well-being, while the perception of not missing out on practices is associated with well-being (Vogel et al., 2020). Thus, the organization can interpret higher engagement in employees with high NSFE-A as indicating that they do not feel they miss out on any useful or beneficial practices. Contrary to our expectations, proactive work behaviour was negatively associated with NSFE-A, meaning that employees show less proactive work behaviour when they are not missing out on HR practices to work effectively. In this case, employees might not feel the need to engage in self-starting, future-oriented behaviour aimed to change their work situation, as they do not miss out on practices to work effectively (Parker et al., 2006).

Turning to the effects of congruence between the two fit measures, our analyses show that employee engagement is higher when NSFE-P and NSFE-A are both high rather than both low. In other words, engagement is higher when the HR practices in a firm are clearly both necessary and sufficient. These results align with previous findings showing a relationship between N-S fit of general work characteristics and employee engagement (Travaglianti et al., 2016; Verquer et al., 2003). In addition, engagement decreases more sharply as both NSFE-P and NSFE-A become lower (a significant negative curvilinear relationship), meaning that engagement drops significantly when employees' needs are met poorly, and HR resources provided by the firm are neither wholly necessary nor sufficient. Concerning proactive work behaviour, we found that employees are more proactive when the NSFE-P and NSFE-A are both high rather than both low. In other words, it appears that employees are more proactive when their needs are fully met, and HR resources provided by the firm are both necessary and sufficient.

Finally, we found incongruence between NSFE-P and NSFE-A to be related to higher proactive work behaviour and engagement, but only when the NSFE-P is higher than NSFE-A. In addition, the reverse is also true: proactive work behaviour and engagement are lower when NSFE-P is lower than NSFE-A. This means that employees work more proactively and are more engaged when they have to make up for the absence of resources that would have improved their functioning, compared with the case where nothing was missing, but the resources supplied included unnecessary and wasteful extras (Verquer et al., 2003).

Our findings extend previous HRM research by (1) introducing a fit assessment of what employees perceive in terms of HR practices for the extent to which these practices may contribute to job performance, and (2) by exploring the impact of employees' (mis)fit evaluations of present and absent HR practices and their concurrent impact on employee outcomes. This approach informs other areas of HRM. First, studies on HR systems mainly focus on the availability or presence of HR practices (e.g., Den Hartog et al., 2013; Kooij et al., 2013) and herewith adopt a more universalistic approach to HRM for individual employees. Our study advocates for a fit approach rather than a universalistic approach to individual-level HRM. Our findings show that a larger amount of present HR practices does not always result in higher employee outcomes (see e.g., Ho & Kuvaas, 2020), and that a lack of practices is not always harmful to employee outcomes. It depends on the extent to which employees experience the supplied HR practices as sufficient and necessary for their performance. In addition, research on adopting a person-job or person-organization fit perspective in SHRM literature (e.g., Boon et al., 2011) can benefit from the fit approach adopted in this study. Finally, our study contributes to the debate on the psychological approach to HRM research, in such a way that we show the importance of studying the employee's view on the effectiveness of both present and absent HR practices for employee outcomes (Troth & Guest, 2020). Taking a more micro perspective, we offer insights into implementing effective HR practices, understanding employee-centred outcomes, and applying PE-fit theory to HRM. In sum, HR scholars can look beyond the universalistic approach of exploring the supply in HR practices by using a fit evaluation to examine employee perceptions of HRM. In addition, they can simultaneously pay attention to the effectiveness of both present and absent HR practices by adopting a congruence perspective.

4.1 | Limitations and suggestions for future research

The present study is not without limitations. First, the measures in this study were collected from the same source, that is, employees, and were all self-reported, using a cross-sectional research design. Although this design was required by our study aims (examining employees' subjective fit perceptions), it is subject to potential common method and common source biases (Podsakoff et al., 2003). We conducted a Harman's one-factor test and performed the common latent factor technique (Podsakoff et al., 2003) to test for common method bias and built upon validated scales. In addition, the correlations among the survey variables in our model were rather modest, ranging from -0.05 to -0.30 , countering the assumption that common method variance is a universal inflator of correlations (Spector, 2006). Finally, we cannot draw any conclusions about causality. Future studies could use a longitudinal research design in which questions about the N-S fit of HR practices and employee outcomes are separated in time. For

example, to investigate whether N-S fit for effectiveness changes over time and how this affects employee outcomes (Wright et al., 2005).

Second, we drew our data from employees' reports on the HR practices they perceived as present in their firms, meaning we do not know how well practices were implemented. We, therefore, cannot draw any conclusions about the quality of implementation of the HR practices. This is not a problem for our study, as our concern was with the extent to which employees experience HR practices (supplied and unsupplied) as sufficient and necessary for their job performance. Nonetheless, future studies could examine how the results of this study account for the actually implemented practices and the quality of the implementation (Den Hartog et al., 2013). Another issue for future research would be investigating how our findings might be biased by individual differences in performance and personal characteristics. In the current study, we controlled for employees' job proficiency as this may have played a role in measuring NSFE-P and NSFE-A. However, it might also be that other factors such as self-serving bias, locus of control, or growth mindset influence this measure (Greenberg, 1991). We, therefore, recommend exploring such variables in future studies.

Third, in this study, we focussed on a N-S fit perspective as most of the HR practices in SHRM literature are identified as a form of supplies rather than as a form of demands (Boon et al., 2011). However, the fit between a person and the work environment can also be understood as the match between job demands and employee abilities (demands-abilities fit) (Edwards, 1991; Kristof-Brown et al., 2005). Demands-abilities (D-A) fit refers to the correspondence between the individual's knowledge, skills, and abilities and the work required. We argue that including the D-A perspective is worthwhile considering for future research. From this perspective, other types of (human capital-enhancing) HR practices may be considered, such as selective recruitment and selection (selective) talent developments (Wang et al., 2008). Additionally, as we used direct measures for NSFE-P and NSFE-A, we could not evaluate which parts of the N-S equation, that is, the needs or the supplies (or both), influence the lack of need fulfillment. Therefore, future studies could explore using indirect measures for assessing needs and supplies separately to provide more specific recommendations for improving employee performance.

Finally, we believe that our study using the N-S fit approach can be seen as a first step towards exploring employee evaluative perceptions of HR practices from a more fit perspective in SHRM research. So far, most of the HR practices are identified as a form of supplies rather than as a form of demands (Boon et al., 2011). Therefore, we have selected HR practices that align well with such a "supplies" perspective, at least in the Netherlands, the country where we collected our data. However, we recommend future research to explore the N-S fit of present and absent HR practices in other contexts than the Netherlands. We argue that the principles developed in this paper can be used, while the set of HR practices might be different to match with the supplies relevant for the context. For example, the type of HR practices depends on contextual organizational boundaries, because HR practices can be specific to the organization's sector, for example, the financial service sector versus the healthcare sector. Moreover, this study compared high versus low congruence and high versus low incongruence situations to introduce a fit perspective in studying employee perceptions of HR practices. Future studies could build on this approach by studying all four contrasts in terms of congruence more explicitly and examine how they impact employee outcomes. In addition, future studies could extend the discussion to other types of employee needs, such as the need for well-being, and different outcomes, such as commitment and satisfaction as happiness dimensions of employee well-being, and exhaustion and stress as health-related dimensions of employee well-being, or more objective measures of employee performance (Van De Voorde et al., 2012). As a final direction for future research, proactive work behaviour and engagement might be influenced differentially by specific HR practices or bundles of practices. The focus in this study was to contribute to HRM literature by focussing on the whole set of supplies offered within the HRM system, as research has shown that a coherent set of HR practices has a more significant impact on employee outcomes compared to a single HR practice (Subramony, 2009). However, we recommend that future studies also examine how the NSFE-P and NSFE-A of specific HR practices impact particular employee outcomes.

4.2 | Implications

Organisations and managers invest in HR practices to contribute to the organization's performance. They are interested in understanding whether the practices they implement are perceived as effective for employees' job performance and what potentially valuable practices might be perceived as missing to work effectively. Obtaining this information can be done by asking employees how they perceive the HR practices necessary and sufficient for their job performance, such as in work meetings, employee participation, or performance appraisal conversations. Surveying employees is another possibility to get an organisation-wide view on the perceived effectiveness of present and absent HR practices for employees' functioning.

How to address the issue of fit between present/absent practices on the one hand and employees' needs to function well, on the other hand, depends on whether the issue is considered at the individual level or the group level (team, department, organization), and whether it concerns NSFE-P or NSFE-A. When the low NSFE-P score is a unique phenomenon, the line-manager can have a conversation with the individual to find out why these HR practices do not help this employee work effectively or may even be harmful/a waste of time and energy on behalf of the employee. If the practice can be missed for the specific worker without problems for the organization, it is worth considering eliminating the practice. In case of a low NSFE-A score, the line manager might consider striking an idiosyncratic deal for the individual scoring low on NSFE-A, i.e., implement the practice only for the individual who needs the practice to function well (Fu et al., 2020). When low NSFE-P scores exist for an entire team or even for an organization as a whole, it is important to consider how the practices are implemented by (some of the) line-manager(s). Maybe the quality of what is offered in terms of HR practices is inadequate to add value for the employees in terms of their functioning. If many employees consider the practice a waste of time or even harmful, good reasons exist to change policy and practices more systematically. Finally, when an entire team or organization indicates low NSFE-A scores, the first one could check organizational communication and information quality as well as implementation quality of line managers (Den Hartog et al., 2013): is it clear enough to employees that such practices are available, while employees report them as absent and missed. However, there is also a possibility that there is ample room for improving HR practices' contribution to performance. Organisations and line managers could consider implementing new practices that specific teams or an entire organization would appear to lack.

The findings of this research also have important general implications for HR professionals. In particular, we found that checking whether HR practices are available to employees is less important than evaluating the perceived effectiveness of such practices. Therefore, rather than aiming for the largest arsenal of available HR practices, HR policymakers and professionals should aim for making the best possible use of HR practices, specifically by the responsible elimination of practices that lack added value or are even wasting employees' time and energy and organizational resources, as well as the substantiated addition of practices where this would enable employees to function better.

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CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to the authorship and/or publication of this article.

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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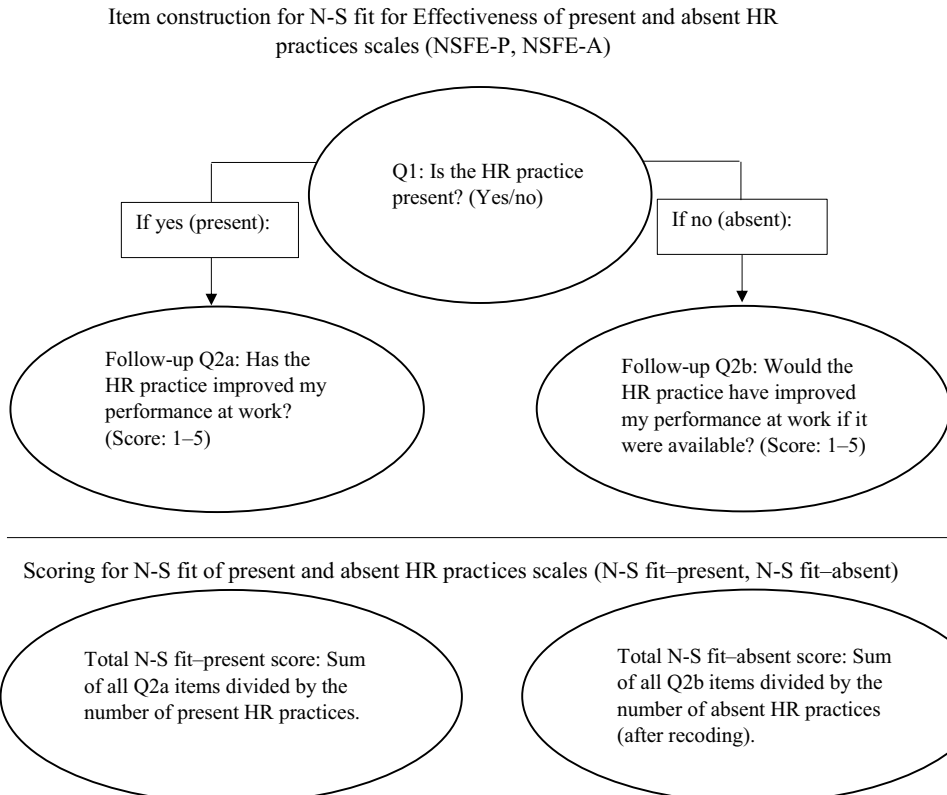
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APPENDICES

Appendix A

Overview of Scoring for Needs–Supplies Fit for Effectiveness of Present and Absent HR Practices Scales.

Q = Question.



Appendix B

Items of the Needs–Supplies Fit For Effectiveness of HR practices scale.

Introduction: The following statements relate to personnel management within your organization and its impact on the accomplishment of your daily work duties. Please indicate whether or not the following applies to your work in the past year. You will be asked to choose between “yes” and “no” and then to answer a follow-up question (ranging from 1 = totally disagree –5 = totally agree) based on your chosen answer.

Note. TD = training & development, PM = performance management, JD = job design, PA = participation, CI = communication & information sharing, RW = rewards.

TD1. I follow training, courses, and workshops (yes: 66.0%).

If yes: My work results have improved in the last year as a result of trainings, courses and workshops.

If no: My work results would have improved in the last year had I followed trainings, courses and workshops.

TD2. I receive coaching in developing my knowledge and skills (yes: 58.7%).

If yes: My work results have improved in the last year as a result of coaching in developing my knowledge and skills.

If no: My work results would have improved in the last year had I received coaching in developing my knowledge and skills.

TD3. I have the opportunity to perform another function in my organization (yes: 52.3%).

If yes: My work results have improved in the last year as a result of the opportunity to perform another function in this organization.

If no: My work results would have improved in the last year had I received the opportunity to perform another function in this organization.

PM1. My performance is periodically assessed by my supervisor (yes: 80.4%).

If yes: My work results have improved in the last year as a result of periodic assessments from my supervisor.

If no: My work results would have improved in the last year had I received periodic assessments from my supervisor.

PM2. I have periodic conversations with my manager about my work results (yes: 69.9%).

If yes: My work results have improved in the last year as a result of periodic conversations with my manager about my work results.

If no: My work results would have improved in the last year had I received periodic conversations with my manager about my work results.

PM3. My work results are determined in joint consultation (yes: 57.4%).

If yes: My work results have improved in the last year as a result of determining my work results in joint consultation.

If no: My work results would have improved in the last year had my work results been determined in joint consultation.

JD1. I have diverse work (yes: 88.6%).

If yes: My work results have improved in the last year as a result of diverse work.

If no: My work results would have improved in the last year had I had diverse work.

JD2. I have challenging work (yes: 80.9%).

If yes: My work results have improved in the last year as a result of challenging work.

If no: My work results would have improved in the last year had I had challenging work.

JD3. I make my own decisions in work (yes: 87.7%).

If yes: My work results have improved in the last year as a result making my own decisions in work.

If no: My work results would have improved in the last year had I had made my own decisions in work.

JD4. I take responsibility for my own work (yes: 95.3%).

If yes: My work results have improved in the last year as a result responsibility for my own work.

If no: My work results would have improved in the last year had I had taken responsibility for my own work.

- PA1. I have a say in the policies of the organization (yes: 37.4%).
 If yes: My work results have improved in the last year as a result having a say in the policies of the organization.
 If no: My work results would have improved in the last year had I had a say in the policies of the organization.
- PA2. I give my opinion on work-related issues in the organization (yes: 84.5%).
 If yes: My work results have improved in the last year as a result giving my opinion on work-related issues in the organization.
 If no: My work results would have improved in the last year had I given my opinion on work-related issues in the organization.
- PA3. I participate in consultation in which the division of tasks are determined (yes: 67.1%).
 If yes: My work results have improved in the last year as a result of participating in consultation in which the division of tasks are determined.
 If no: My work results would have improved in the last year had I had participated in consultation in which the division of tasks are determined.
- CI1. I am informed about the general course of events within the organization (yes: 87.7%).
 If yes: My work results have improved in the last year as a result of being informed about the general course of events within the organization.
 If no: My work results would have improved in the last year had I been informed about the general course of events within the organization.
- CI2. I am informed about specific procedures within the organization (yes: 79.1%).
 If yes: My work results have improved in the last year as a result of being informed about specific procedures within the organization.
 If no: My work results would have improved in the last year had I been informed about specific procedures within the organization.
- CI3. I am informed about significant changes in the organization (yes: 90.8%).
 If yes: My work results have improved in the last year as a result of being informed about significant changes within the organization.
 If no: My work results would have improved in the last year had I been informed about significant changes in the organization.
- CI4. I have insight in the way decisions are made within the organization (yes: 54.4%).
 If yes: My work results have improved in the last year as a result of having insight in the way decisions are made within the organization.
 If no: My work results would have improved in the last year had I had insight in the way decisions are made within the organization.
- RW1: I receive other financial benefits in addition to my basic salary (42.4%)
 If yes: My work results have improved in the last year as a result of receiving other financial benefits in addition to my basic salary.
 If no: My work results would have improved in the last year had I received other financial benefits in addition to my basic salary.
- RW2: I receive compensation that depends on my performance (19.4%)
 If yes: My work results have improved in the last year as a result of receiving compensation that depends on my salary.
 If no: My work results would have improved in the last year had I received compensation that depends on my salary.
- RW3: I receive rewards that depend on team or departmental performance (14.8%)
 If yes: My work results have improved in the last year as a result of receiving rewards that depend on team or departmental performance.
 If no: My work results would have improved in the last year had I received rewards that depend on team or departmental performance.