



Organizational context matters: Psychosocial safety climate as a precursor to team and individual motivational functioning

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ARTICLE INFO

Keywords:

Psychosocial safety climate
Individual resources
Team resources
Individual crafting
Team crafting
Work-related outcomes

ABSTRACT

Beyond its function to protect worker psychological health, psychosocial safety climate (PSC) may be construed as a context factor that affects employee work motivation. This study explores the effect of PSC on various aspects of motivational functioning at work. We expected PSC to be positively related to wellbeing-related outcomes (work engagement and organizational commitment) and that these relations would be mediated through job resources and job crafting, and that they would be evident at both the individual and team level.

Multilevel mediation analysis was used with data from 963 health professionals (doctors and nurses) from 66 work units in two Chinese hospitals. At the individual level, there were significant effects of, individual resources on work engagement and organizational commitment through individual crafting; PSC through individual resources on individual crafting, and PSC through individual crafting on work engagement and organizational commitment. At the team level, team resources were related to average team work engagement and organizational commitment through team crafting; PSC was related to team crafting through team resources, and the indirect effects of PSC through team crafting on average work engagement and organizational commitment were significant.

Overall, the results support the proposition that the PSC context positively predicts team- and individual-level work motivation. We conclude that PSC theory can serve as an integrative contextual framework to explain the complex interplay of factors from different sources (i.e., the team and the individual) that contribute to work motivation.

1. Introduction

1.1. Background

People are motivated to act and make sense of their workplace in identity-congruent ways. Identity-based motivation assumes that macro-level features of the context influence personal self-regulation and goal pursuit (Oyserman et al., 2017). The present paper is based on the fundamental proposition that psychosocial safety climate (PSC) theory can serve as an integrative contextual framework to explain the complex interplay of different factors (job design, job crafting) at different levels (i.e., the team and individual levels) that contribute to work motivation (e.g., work engagement and organizational commitment).

Organizations are social systems comprised of patterned activities

across a number of individuals (Katz & Kahn, 1978). Patterns of social interaction are based shared perceptions of contextual features that convey values and norms regarding the desired behaviour of employees to achieve organizational goals. These contextual features likely promote pro-organizational motivational outcomes, such as work engagement and organizational commitment, by setting up a behavior-outcome expectancy frame with organizational identification. Psychosocial safety climate (PSC) refers to shared perceptions of organizational values and norms that are relevant to the protection of employee psychosocial safety and wellbeing (Dollard & Bakker, 2010). As such, PSC imparts a subjective-normative influence on employees' perceptions, feelings, and behavior through attaching meaning to the work context, that may facilitate (or, at low level levels, impede) desired individual and team functioning (Dollard & Bakker, 2010).

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<https://doi.org/10.1016/j.ssci.2021.105524>

Received 12 January 2021; Received in revised form 7 September 2021; Accepted 26 September 2021

Available online 14 October 2021

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Job-related resources (that may be located at the individual and team levels and reflect individual or team identities to some degree) are motivating and may contribute to employees' wellbeing in an identity-congruent way by enabling individual and collective crafting (Hu et al., 2019). Job crafting refers to self-directed or collective-directed job design and is a mechanism by which employees can cultivate positive meaning in their job (Hu et al., 2019; Wrzesniewski et al., 2013). Job crafting involves matching goals and interests with a focus on aligning work meaningfulness with work identities (Hu et al., 2019; Wrzesniewski et al., 2013). Work identities shape self-regulation behaviour and are in turn shaped by features of the immediate context (Oyserman et al., 2017). Adequate resourcing may be a mechanism through which PSC affects job crafting. However, research often focuses on either individual-level or team-level motivational job design, without acknowledging that PSC affects job crafting and desired organizational outcomes. Further, a gap in our understanding is the role that PSC and job resources play as possible precursors to employee efforts to shape their job. This neglect is unfortunate, as directly incorporating context measures into job design would allow for effects and relationships to emerge that may otherwise remain undetected or are misinterpreted (Ostroff, 2019). Based on an identity-based motivation perspective, this study explores multilevel mediated paths connecting the context of PSC, job resources, and individual and team job crafting to employee motivational wellbeing outcomes (i.e., work engagement and organizational commitment).

1.2. Individual-level job resources and individual crafting

Job-related resources are sourced or supplied within jobs and help getting the job done, but they also satisfy basic human needs. As such, job-related resources are intrinsically motivating. Job resources may also be extrinsically motivating because they are functional in reaching work goals and satisfying personal needs (Demerouti & Bakker, 2011; Hu et al., 2019). Two different forms of job-related resources can be distinguished, at the individual and team level, depending on whether they are based on individual characteristics or on collective attributes, respectively (Hu et al., 2019).

Individual-level job resources can be discerned from task and interpersonal features (Hackman & Oldham, 1980; Wrzesniewski et al., 2003). Task-related resources specify the relationship between self and the task. For example, job feedback can reduce the number of employee mistakes, enhance performance and increase work efficiency (London, 2003). Similarly, learning and development opportunities provide possibilities for acquiring and improving job-related skills and knowledge, and offer possibilities for promotion and expansion of job duties (Kolb, 1984). Interpersonal resources derive from interpersonal relationships and interdependence with specific others (Brewer & Gardner, 1996). Interpersonal resources can be motivating, due to their meaning for *personalized* bonds of attachment (Brewer & Gardner, 1996). For example, colleague support may affect an individual's job attitudes through the information and cues given by these colleagues about their feelings and thoughts about the job tasks (Salancik & Pfeffer, 1978). The interaction of employees with their colleagues may thus shape the meaning of work and whether it is motivating.

People do not passively obtain meaning from job-related resources; rather, they are motivated to actively derive a sense of meaning from their endeavors (Frankl, 1963; Wrzesniewski et al., 2013). *Individual crafting* refers to a set of self-regulatory and proactive adaptive behaviors to adjust oneself to or to modify the work context to fit one's work role (Peeters et al., 2016; Tims et al., 2013; Wrzesniewski & Dutton, 2001). Self-regulative motivation is related to self-based needs, values, and norms (Bandura, 1991). Individual crafting as self-initiated changes is a critical activity to enhance work meaning, because it can open up meaningful opportunities for employees to express, maintain and enhance their work identities (Demerouti et al., 2017; Hu et al., 2019; Wrzesniewski & Dutton, 2001). For example, Tims et al. (2016) found

that individual crafting was related to increased employee "person-job fit" one week later and to increased meaningfulness two weeks later.

Individual-level job resources represent "energy reservoirs" at work that individuals can tap into to regulate their demands (Hu et al., 2019; Hobfoll, 2002). Higher *individual-level* job resources are in general associated with stronger work-related behaviors and attitudes (Bakker & Demerouti, 2017; Hakanen et al., 2006), i.e. *individual-level* job resources have a motivational element to initiate individual crafting to align their underlying job goals and psychological needs (Hu et al., 2019).

1.3. Team-level job resources and team crafting

Team-level job resources are endorsed with shared values and are associated with team identity to serve the collective interests and coordinate the actions of team members in reaching team goals. Team resources are psychologically intertwined with reciprocal role relationships and mutually beneficial interactions (Hu, et al., 2019). Hence, team-level job resources are regarded as primarily intrinsic sources of motivation (Edward & Cable, 2009). For example, team learning occurs through dialogue and discussion among team members, providing people with access to a broader range of alternative perspectives (Johnson & Johnson, 2009). Team effectiveness refers to a team's capacity to accomplish common objectives (Aubé & Rousseau, 2011). Finally, team cooperation involves forging commonalities out of individual differences to achieve a common goal (Thomson et al., 2007).

Team members are exposed to shared psychosocial context factors or group characteristics. In the process of identifying with a team, members adopt the central and distinctive attributes of the team into their self-concepts and activate execution. When common construals and uniform expectancies lead people to form a team identity with a collective goal and shared interests, self-regulative motivation is related to team-based needs, values, and goals (Ellemers et al., 2004). Team crafting (also called collective crafting) refers to the activities carried out by team members with a collective cognition to jointly change the nature of work practices and processes (Leana et al., 2009; McClelland et al., 2014).

Team-level job resources are central for team members as collective and shared characteristics in the process of team identification. Team members feel psychological attachment and a sense of belonging to their team because team resources ignite the perception that people receive rewards for team role enactment. For example, team learning and team cooperation allow team members to transfer knowledge from one context to another and provide more opportunities for self-enhancement. Team crafting is affected by the strength of team identification, which is regulated by the internalization of and adherence to particular values and norms in terms of collective-directed sensemaking. As such, *team-level* job resources will stimulate people to exert collaborative efforts into collective crafting (Hu et al., 2019).

1.4. Job resources, job crafting, and motivational wellbeing outcomes

We focus on two relevant indicators of motivational wellbeing outcomes in job design: work engagement and organizational commitment. Work engagement is a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002). Work engagement is associated with individual resources and individual crafting. For example, Demerouti et al. (2015) found that seeking resources favourably affected contextual performance and creativity through work engagement, while Slemp and Vella-Broderick (2013) confirmed that individual crafting correlated positively with proactive behaviour and positive work functioning. When people who identify with their team are energized to act in terms of their team membership, enhancing the salience of a collective identity can also contribute to individual work engagement. For example, Tims et al. (2013) revealed that team crafting and challenging job demands

influence individual performance through individual vigor. Similarly, McClelland et al. (2014) demonstrated that team crafting relates positively to team efficacy, team control, and team interdependence, which in turn were found to relate positively to work engagement and team performance. Specifically, Hu et al. (2019) revealed that individual crafting and collective crafting are central in allowing people to choose and fully develop preferred ways of working to optimize their psychological energy, which in turn led to higher work engagement.

Organizational commitment is the psychological attachment of employees to the organizations they work for (Meyer et al., 2002). It concerns the willingness to identify with an organization as a context-dependent phenomenon that serves self-expressive functions for the individual. When people internalize or adopt the characteristics or the perspectives of the organization, their perceived interdependence with this organization ties them to the organization. Job resources and job crafting can support this expressive function of identity, linking people to their organization. When people craft their job in such a way that it allows them to express their work identity (i.e. either their self-identity or team identity), the interconnection between the internal world of an individual and his/her external organizational context is strengthened. Based on this reasoning, we expect that

Hypothesis 1: individual resources relate positively to employee work engagement (H1a) and organizational commitment (H1b), via individual crafting.

Hypothesis 2: team resources relate positively to employee work engagement (H2a) and organizational commitment (H2b), via team crafting.

1.5. Psychosocial safety climate (PSC) as an organizational context factor

Organizational identification is a two-way relationship between individuals and the organizations they work for. To the extent that an individual identifies with an organization, the organization provides the individual with a sense of identity. Yet this relationship is often unbalanced. Organizations are strong contexts that are frequently able to provide considerable amounts of resources and can carry unique systems of meaning through policies, practices, and procedures to exert influence on their members (Bowen & Ostroff, 2004; Cooper & Withey, 2009). Organizational identification is seen as personally experiencing the successes and failures of the organization (Ashforth & Mael, 1989). People must comprehend the cues that an organization uses to build member organizational identity, so that it elicits the behaviors from its members that it expects and rewards. However, this is not to suggest that people simply apply the meanings given to them by the organization's management. Rather, people scan for, read and process the information transferred by organizational policies and procedures to form their own perceptions. Shared organizational identities and similarities among organization members may combine to constitute organization-level perceptions and produce organizational climates (Schneider & Reichers, 1983).

Subjective uncertainty reduction is a fundamental human motivation (Hogg & Mullin, 1999), and the motivation for organizational identification arises from fundamental needs for security and safety (Steffens et al., 2017). At high levels of safety and security, people tend to conform to organizational expectations and to support and justify organizational rules, because they believe that their effort will lead to valued outcomes. Identification with organizations involves some form of psychological bond between people and organizations (Pratt, 1998). An organization's management must serve members' needs for psychological health and safety, and strengthen their organizational identification (Graham, 1991; Patterson, 2003). PSC refers to shared perceptions of organizational policies, practices, and procedures for the protection of the psychological health and safety of the organization's

members that are largely driven by senior management (Dollard & Bakker, 2010). An important role of senior management is to guide all members to be consistent with the organization's expectations (Schneider & Reichers, 1983), so that people at different levels in the hierarchy may similarly be exposed to common experiences. PSC as an organizational climate construct is seen as a joint property in serving to integrate the individual and team level (Schneider & Reichers, 1983), and imputes certain safety and security meanings related to the organization into employees' individual and team identities.

1.5.1. PSC and individual-level job resources and individual crafting

At the individual level, people need a secure and stable sense of work meaning and have a desire to see themselves in a positive light (Wrzesniewski, et al., 2003). PSC provides the cues for implementing organizational policies, procedures and perceptions for the protection of individuals' psychosocial health and wellbeing. Working conditions are largely created by senior management (Dollard & Karasek, 2010). Employers who value psychosocial safety (high PSC), are more likely to supply resources for employees' psychological health and well-being. In line with this view, researchers found that PSC has a positive effect on individual resources (Dollard & Bakker, 2010). For example, perceived PSC enhances employee job control and supervisor support (Dollard et al., 2012), and moderates the relations between daily psychological demands with daily mindfulness and daily job control (Lawrie et al., 2018). It should be noted that PSC offers individuals a psychological environment that affects their evaluation of the chances of maximizing expected gains or minimizing expected losses. However, the actual presence of a resourceful condition in itself does not imply that people will automatically and without effort achieve work goals and energy gains, nor does it reduce the associated job demands to ensure job crafting behaviour. Without an enriched resourceful environment, people will lack the motivation to engage in proactive actions. That is, individual resources offer the motivational condition that is central to the psychosocial processes of PSC and can be used to enable them to change their behaviours. Thus, we expect:

H3: PSC relates positively to individual resources (H3a) and individual crafting (H3b). Further, PSC relates positively to individual crafting via individual resources (H3c).

1.5.2. PSC and team-level job resources and team crafting

Team members derive meaning and psychological resources from their team identity (Rosso et al., 2010). When people identify with a team, their self-interest at the personal level is redefined at the collective level, such that the outcomes for self and others in the group become practically interchangeable (De Cremer & Van Vugt, 1999). Because people expect their efforts to be reciprocated by others in their team, PSC may provide people with a sense of security and certainty. A secure work context may reduce the psychosocial distance between the group members, strengthen group ties, and enhance perceptions of trust among group members. Thus, a heightened PSC promotes individual contributions to the team's identity, because it raises the expectation of group members that collective outcomes will be achieved in more desirable ways. For example, Baer and Frese (2003) revealed that the climate for psychological safety positively moderated the relationship between innovativeness and firm performance. Similarly, Edmondson (1999) found a strong association of team psychological safety with team learning behaviour and use of employees' creative potential. Since PSC is concerned with worker psychological health, there should be reduced concerns about an unequal distribution of resources within the team which promotes increased interactions, leading to a cross-fertilization of ideas. High PSC leads to a sense of openness and cohesion that is more likely to reinforce team-level job resources (team cooperation, team learning, team effectiveness) and in turn motivates team members to cooperatively craft their work for team outcomes and collective goals.

Therefore, we propose:

H4: PSC positively relates to team job resources (H4a) and team crafting (H4b), and further, PSC positively relates to team crafting via team job resources (H4c).

1.5.3. PSC and motivational wellbeing outcomes

Deci and Ryan (2000) argued that the quest for meaningful work can be understood in terms of basic human needs for meaning. These needs (for autonomy, competence, and relatedness) constitute a motivational pattern that guides people to make psychological adjustments (e.g., responsibility, ability and security) in the work context (Huyghebaert et al., 2018). PSC reflects the psychological meaning that workers' wellbeing is a priority to the organization (Dollard & Bakker, 2010). Strong PSC contexts relate to higher levels of psychological health (Idris et al., 2014). That is, in high PSC contexts people are more likely to obtain the positive effects associated with organizational identification, because this context is likely to provide them with a sense of stability and continuity (Steffens, et al., 2017). Therefore, a secure work environment will provide a needed backdrop for intrinsic motivation, a sense of security that makes the expression of this innate growth tendency more robust (Deci & Ryan, 2000). People in safe environments are more likely to take risks that express their true selves, which is manifest in people actively pursuing their interests in their job and trying novel ways of accomplishing tasks (Edmondson, 1999). For example, Dollard and Bakker (2010) argued that PSC influences employee engagement, while Kark and Carmeli (2009) found that psychological safety induces feelings of vitality, which impacts on an individual's involvement in creative work. Based on these notions, we propose:

H5: PSC positively relates to individual work engagement (H5a) and organizational commitment (H5b). Further, PSC positively relates to individual work engagement (H5c) and organizational commitment (H5d) via individual crafting.

Fig. 1 presents the hypotheses in this study graphically.

2. Method

2.1. Participants and procedures

The study was conducted in two public Chinese hospitals – a

maternity hospital in 2017 and a traditional Chinese medicine hospital in 2020 and in 2021 – as part of a collaborative hospital-university research project that primarily focused on medical professionals' wellbeing. All measures were either developed or already validated in Chinese, except for the PSC scale which was translated in Chinese by the first author. Any issues with respect to possibly ambiguous semantics were discussed with the second author (an expert in the area of PSC) to ensure conceptual consistency. Before the survey, full ethics approval was given to the three surveys with signed protocol by the studied hospitals (Reference: R2015100104, SKY-HX-20200072, and SKY-HX-20210101). In the traditional Chinese medicine hospital, a HRM officer of the hospital informed all medical professionals in a regular monthly meeting about the study and emphasized the importance of participation for all parties involved. The anonymity was guaranteed, and the confidentiality of the data and the voluntary nature of participation were emphasized. About 400 paper-and-pencil questionnaires were distributed and 349 valid questionnaires were collected by a university researcher on-site with the help of a HRM employee. In maternity hospital, a public notice informed all employees (almost 450 employees) the aim of the collaborative research project in advance, and the data were collected digitally by means of online surveys with 343 participants in 2020 and 271 participants in 2021, respectively. The total respondents in the three surveys ($n = 963$) included 245 doctors, 382 nurses and 336 medical technicians from 66 team units with an average size of 14.59 participants. The mean age was 33.28 ($SD = 7.94$) with 178 males and 785 females.

2.2. Measures

Individual-level resources were assessed with subscales of the Questionnaire on the Experience and Evaluation of Work (QEEW; Van Veldhoven et al., 2002; see also Hu et al., 2011; Hu et al., 2017). Three individual-level resources were included, namely *feedback* (3 items; e.g., "Does your work provide you with direct feedback on how well you are doing your work?"), *opportunities for learning and development* (4 items; e.g., "In my job I have the possibilities to develop my strong points"), and *colleague support* (3 items, e.g., "If necessary, can you ask your colleagues for help?"). All items were Likert-type scales ranging from 1 = "never" to 5 = "always".

Team-level resources were assessed by three subscales of the Shared Leadership Scale (Liu, 2009; see also Hu et al., 2019): (1) team cooperation (3 items, e.g., "My team members cooperate in work by each

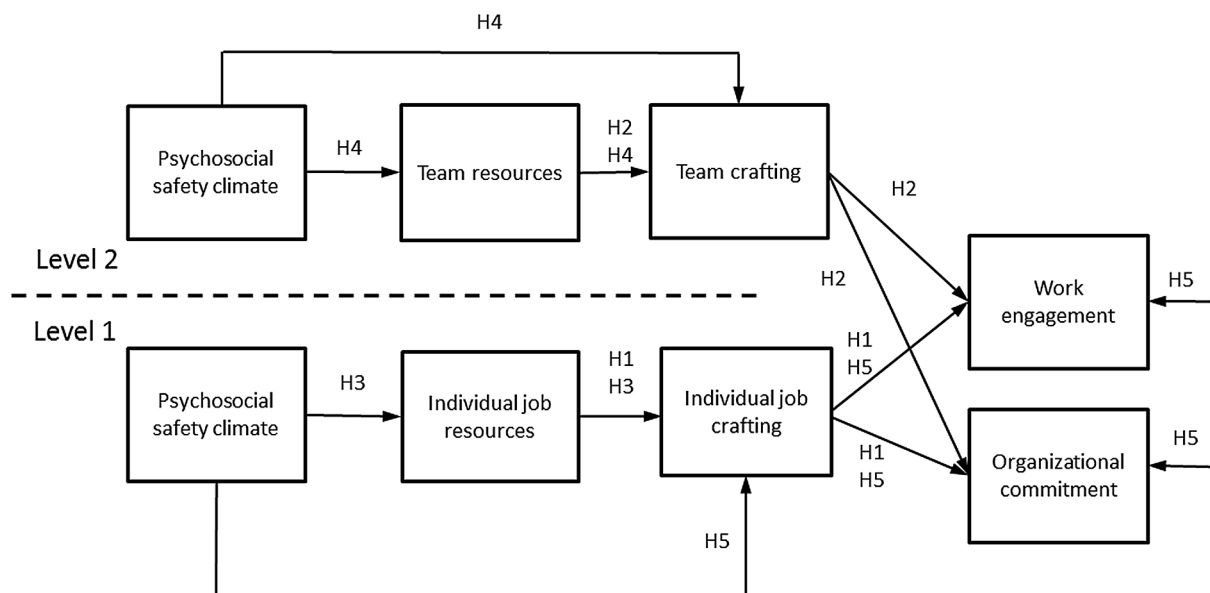


Fig. 1. The hypothesized model.

other"; $r_{wg(j)} = 0.80$, $ICC(1) = 0.13$, $ICC(2) = 0.69$); (2) team learning (3 items, e.g. "My team improves professional capabilities by brainstorm and seminar"; $r_{wg(j)} = 0.80$, $ICC(1) = 0.11$, $ICC(2) = 0.64$); and (3) team effectiveness (3 items, e.g. "Does your department cooperate effectively?"; $r_{wg(j)} = 0.77$, $ICC(1) = 0.13$, $ICC(2) = 0.71$). All items were answered using Likert-type scales, ranging from 1 = "never" to 5 = "always", and the responses of employees within each team were averaged to create aggregated measures of the team-level variables.

Individual crafting was measured using the four-item Overarching Job Crafting Scale (O-JCS, Hu et al., 2019; Vanbelle et al., 2013). The O-JCS emphasizes the changes employees make in their jobs to optimize their functioning in terms of well-being, work-related attitudes and behavior (cf. Vanbelle et al., 2014). An example item was "I change my job so that it fits better with who I am" (1 = "never", 5 = "always").

Team crafting was measured using a 4-item revised Collective Crafting scale (Hu et al., 2019; McClelland et al., 2014), which employed a 5-point scale ranging from 1 = "never" to 5 = "always". An example item is "In the past 12 weeks, to what extent has your team changed the skills it uses (without supervisory/management input) to make the work more interesting?" Because of the adequate agreement between raters within the same team ($r_{wg(j)} = 0.79$, $ICC(1) = 0.23$, $ICC(2) = 0.81$), we average the responses of employees within each team to create an aggregated measure of team-level collective crafting.

Work engagement was assessed with the Chinese version (Hu et al., 2011) of the Utrecht Work Engagement Scale (UWES-9) (Schaufeli et al., 2006) with a response scale 1 = "never" and 5 = "always" (cf. Li et al., 2013). The UWES-9 taps three dimensions: *vigor* (3 items, e.g. "At my work, I feel bursting with energy"), *dedication* (3 items, e.g. "My job inspires me"), and *absorption* (3 items, e.g. "I get carried away when I am working"). As recommended by Schaufeli and Bakker (2010), a sum score was used to represent work engagement.

Organizational commitment (5 items, e.g. "I feel like 'a member of the family' in my workplace", 1 = "never" and 5 = "always") was assessed by a scale from the QEEW (Hu et al., 2016; Hu, et al., 2011).

Psychosocial safety climate was assessed with the 12-item PSC scale (Hall et al., 2010). Example items include "Senior management acts decisively when a concern over an employee's psychological status is raised" (*management commitment*), "Information about workplace psychological well-being is always brought to my attention by senior management" (*organizational communication*), "Psychological well-being of staff is a priority for this organization" (*management priorities*); and "My contributions to resolving occupational health and safety concerns in the organization are taken into consideration" (*organizational participation*). All items employed a 5-point Likert scale (1 = "strongly disagree", 5 = "strongly agree"). A confirmatory factor analysis of a correlated four-factor solution with *management commitment*, *organizational communication*, *management priorities*, and *organizational participation* as latent factors showed acceptable fit among nurses ($\chi^2 (df = 48) = 557.22$, $GFI = 0.91$, $TLI = 0.96$, $CFI = 0.97$, $RMSEA = 0.10$). Further, a principal component factor analysis with varimax rotation using all items of the PSC revealed that all items loaded on a single factor. Given the significant bivariate correlations between the factors (ranging from $r = 0.77$ to $r = 0.91$), the recommendations by Idris and Dollard (2011), as well as for reasons of parsimony, the scores on the 12 items were summed, resulting in a global PSC measure. The $r_{wg(j)}$ is 0.78, the $ICC(1)$ is 0.13 and the $ICC(2)$ is 0.68, justifying aggregation of the variable to indicate PSC at the team level. Individual scores were retained to indicate PSC at the individual level.

In addition, the responses of the employees within each team were averaged to create team mean profiles of work engagement, organizational commitment, and individual crafting, in order to explore the cross-level effect of the team-level variables on individual-level variables. Tests revealed that raters from the same team had an adequate agreement regarding *work engagement* ($r_{wg(j)} = 0.78$, $ICC(1) = 0.18$, $ICC(2) = 0.76$), *organizational commitment* ($r_{wg(j)} = 0.74$, $ICC(1) = 0.13$, $ICC(2) = 0.68$), *individual crafting* ($r_{wg(j)} = 0.81$, $ICC(1) = 0.16$,

$ICC(2) = 0.74$).

2.3. Data analysis

As individual observations were nested in teams, Multilevel Structural Equation Modelling (MSEM) in Mplus 8.6 (Muthén & Muthén, 1998–2017) was used to test the study hypotheses. The MSEM approach permits investigating mediation by multiple mediators simultaneously and at both levels (Preacher et al., 2010). For reasons of parsimony, the MSEM model was measured by using the latent regression factor scores for individual-level resources and team-level resources.

Four substantive nested models were specified. These models were progressively more complex, in that each subsequent model released additional regression paths or (co)variances as compared to the previous, simpler model: (1) a within-level model (Model 1) with effects of the explanatory variables at the individual level, structural paths at the team level, and with cross-level fixed at zero. Model 1 assessed the effects of individual resources on individual work engagement and individual organizational commitment, which were further mediated by individual job crafting; (2) a two-level model to fit the within- and between-levels simultaneously (Model 2), in which the structural path at the team level was released to estimate the effect of team-level resources on team-level crafting; (3) a team-individual cross-level model (Model 3) where team-level variables influence individual work engagement and organizational commitment. The model includes mediation in a cross-level design, in which within-level variables (i.e., work engagement and organizational commitment) are predicted by between-level variables (i.e., team resources and team crafting) (Preacher et al., 2010). In addition, the relationship between team crafting and individual crafting was explored in Model 3; and (4) a full cross-level model (Model 4) where PSC simultaneously influences individual-level variables and team-level variables. As a full model, Model 4 permits the cluster-level constructs to covary freely. Full structures were imposed, and indirect effects can be estimated in Model 4.

The first three models (M1-M3) provide information as to whether multilevel analysis is justified. The fourth model (M4) tests the hypothesized relationships in this study. As this study aimed to examine the individual variances separately from the team variances, individual crafting, individual work engagement and individual organizational commitment were centred on each team's mean to form a team mean profile of individual crafting, individual work engagement and individual organizational commitment. This method allows for congruence between the components of the perception to individual and the components of the perception to team. Model fit was assessed using the χ^2 likelihood ratio statistic, the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). We accepted CFI values greater than 0.90 and RMSEA values lower than 0.08. We also used the Bayesian information criterion (BIC) to compare the fit of alternative models. The lower the BIC index, the better the goodness of fit.

3. Results

Preliminary analyses. Means, standard deviations, reliabilities, and within and between-individual correlations of the focal variables are presented in Table 1. Bivariate within-level and between-level correlations provided preliminary support for the hypotheses. The indicators of individual resources were positively related to individual crafting and the indicators of work engagement and organizational commitment (r s ranging from 0.24 to 0.49, all $p < .01$). Further, the team resources indicators were also positively correlated to team crafting (r s ranging from 0.54 to 0.74, all $p < .01$).

The absolute values of skewness and kurtosis of studied variables were less than 1, supporting normality assumptions. We first started with random effects at the within-level and gradually added complexity until all theoretically motivated random effects were included. The results of a series of MSEM analyses are presented in Table 2. First,

Table 1
Means, standard deviations, and correlations between variables.

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|--|----------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <i>Level 1 (individual level, N = 963)</i> | | | | | | | | | | | | | | | | | | | | | |
| 1. Feedback | 3.82 | 0.80 | (0.86) | | | | | | | | | | | | | | | | | | |
| 2. Colleague support | 3.69 | 0.75 | 0.41** | (0.80) | | | | | | | | | | | | | | | | | |
| 3. Learning & development | 3.61 | 0.86 | 0.43** | 0.50** | (0.90) | | | | | | | | | | | | | | | | |
| 4. Individual crafting | 3.45 | 0.84 | 0.30** | 0.28** | 0.41** | (0.95) | | | | | | | | | | | | | | | |
| 5. Org Commitment | 3.41 | 0.99 | 0.32** | 0.24** | 0.42** | 0.51** | (0.94) | | | | | | | | | | | | | | |
| 6. Vigor | 3.34 | 0.92 | 0.32** | 0.30** | 0.49** | 0.53** | 0.73** | (0.85) | | | | | | | | | | | | | |
| 7. Dedication | 3.11 | 0.98 | 0.29** | 0.25** | 0.43** | 0.54** | 0.70** | 0.86** | (0.91) | | | | | | | | | | | | |
| 8. Absorption | 3.15 | 0.99 | 0.28** | 0.23** | 0.43** | 0.50** | 0.73** | 0.86** | 0.88** | (0.89) | | | | | | | | | | | |
| 9. Management commitment | 3.42 | 0.94 | 0.26** | 0.18** | 0.35** | 0.39** | 0.57** | 0.53** | 0.52** | 0.54** | (0.95) | | | | | | | | | | |
| 10. Organizational communication | 3.55 | 0.94 | 0.30** | 0.19** | 0.37** | 0.38** | 0.54** | 0.53** | 0.50** | 0.51** | 0.86** | (0.94) | | | | | | | | | |
| 11. Management priorities | 3.70 | 0.98 | 0.30** | 0.21** | 0.38** | 0.36** | 0.53** | 0.51** | 0.46** | 0.49** | 0.77** | 0.82** | (0.93) | | | | | | | | |
| 12. Organizational participation | 3.47 | 1.01 | 0.30** | 0.20** | 0.37** | 0.38** | 0.56** | 0.54** | 0.53** | 0.53** | 0.83** | 0.91** | 0.78** | (0.96) | | | | | | | |
| <i>Level 2 (team level, N = 66)</i> | | | | | | | | | | | | | | | | | | | | | |
| 13. Team effectiveness | 4.04 | 0.32 | | | | | | | | | | | | | (0.90) | | | | | | |
| 14. Team learning | 3.93 | 0.32 | | | | | | | | | | | | | 0.70** | (0.94) | | | | | |
| 15. Team cooperation | 4.15 | 0.32 | | | | | | | | | | | | | 0.61** | 0.79** | (0.97) | | | | |
| 16. Team crafting | 3.71 | 0.45 | | | | | | | | | | | | | 0.54** | 0.74** | 0.54** | (0.96) | | | |
| 17. Psychosocial safety climate | 3.53 | 0.39 | | | | | | | | | | | | | 0.53** | 0.57** | 0.30** | 0.78** | (0.95) | | |
| Work engagement | 3.20 | 0.44 | | | | | | | | | | | | | 0.50** | 0.68** | 0.46** | 0.78** | 0.76** | (0.96) | |
| Org Commitment | 3.41 | 0.46 | | | | | | | | | | | | | 0.54** | 0.60** | 0.42** | 0.76** | 0.73** | 0.89** | |
| Individual crafting | 3.45 | 0.37 | | | | | | | | | | | | | 0.54** | 0.62** | 0.47** | 0.71** | 0.66** | 0.80** | 0.76** |

Note: ** $p < .01$, Cronbach's alpha coefficients are in parentheses along the diagonal. Correlations above the diagonal are between-level correlations ($N = 66$). Correlations below the diagonal are within-level correlations ($N = 963$).

Table 2

Main path coefficients and model fit information of the studied models.

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 4- modified | Split-sample analysis | |
|--|-------------------|-------------------|-------------------|--------------------|----------------------|-----------------------|----------------|
| | Est. (SE) | Est. (SE) | Est. (SE) | Est. (SE) | Est. (SE) | Est. (SE) | Est. (SE) |
| <i>Level 1 (individual-level, N = 963)</i> | | | | | | | |
| Individual resources → Individual crafting | 0.31*** (0.03) | 0.31*** (0.03) | 0.31*** (0.03) | 0.20*** (0.03) | 0.20*** (0.03) | 0.16*** (0.04) | 0.25*** (0.04) |
| Individual resources → Engagement | 0.08*** (0.02) | 0.08*** (0.02) | 0.08*** (0.02) | 0.08*** (0.02) | 0.08*** (0.02) | 0.09*** (0.03) | 0.07* (0.03) |
| Individual resources → Commitment | 0.05 (0.02) | 0.05 (0.02) | 0.05 (0.01) | 0.04 (0.02) | – | 0.03 (0.03) | 0.05 (0.03) |
| Individual crafting → Engagement | 0.66*** (0.01) | 0.67*** (0.01) | 0.67*** (0.01) | 0.39*** (0.02) | 0.39*** (0.02) | 0.41*** (0.03) | 0.37*** (0.03) |
| Individual crafting → Commitment | 0.66*** (0.01) | 0.66*** (0.01) | 0.66*** (0.01) | 0.35*** (0.02) | 0.35*** (0.02) | 0.35*** (0.03) | 0.35*** (0.03) |
| Engagement ↔ Commitment | 0.69*** (0.02) | 0.69*** (0.02) | 0.69*** (0.02) | 0.56*** (0.02) | 0.56*** (0.02) | 0.54*** (0.03) | 0.58*** (0.03) |
| <i>Level 2 (team-level, N = 66)</i> | | | | | | | |
| Team resources → Team crafting | 0.00 | 0.75*** (0.06) | 0.66*** (0.08) | 0.52*** (0.08) | 0.52*** (0.07) | 0.52*** (0.08) | 0.52*** (0.08) |
| <i>Cross team-individual level</i> | | | | | | | |
| Team crafting → Engagement (average) | 0.00 | 0.00 | 0.71*** (0.08) | 0.35*** (0.13) | 0.42*** (0.10) | 0.35** (0.13) | 0.35** (0.13) |
| Team resources → Engagement (average) | 0.00 | 0.00 | -0.02 (0.11) | 0.06 (0.11) | – | 0.06 (0.11) | 0.06 (0.11) |
| Team crafting → Commitment (average) | 0.00 | 0.00 | 0.80*** (0.06) | 0.50*** (0.12) | 0.46*** (0.10) | 0.50*** (0.12) | 0.50*** (0.12) |
| Team resources → Commitment (average) | 0.00 | 0.00 | -0.17 (0.10) | -0.09 (0.09) | – | -0.09 (0.09) | -0.09 (0.09) |
| Team crafting ↔ Individual crafting (average) | 0.00 | 0.00 | 0.44*** (0.11) | 0.24 (0.15) | – | 0.24 (0.15) | 0.24 (0.15) |
| Engagement (average) ↔ Commitment (average) | 0.00 | 0.00 | 0.70*** (0.06) | 0.65*** (0.07) | 0.65*** (0.07) | 0.65*** (0.07) | 0.65*** (0.07) |
| <i>Cross-level (PSC → individual & team level)</i> | | | | | | | |
| PSC → Individual resources | 0.00 | 0.00 | 0.00 | 0.33*** (0.03) | 0.33*** (0.03) | 0.30*** (0.04) | 0.38*** (0.04) |
| PSC → Individual crafting | 0.00 | 0.00 | 0.00 | 0.34*** (0.03) | 0.34*** (0.03) | 0.30*** (0.04) | 0.35*** (0.04) |
| PSC → Engagement | 0.00 | 0.00 | 0.00 | 0.43*** (0.02) | 0.44*** (0.02) | 0.40*** (0.03) | 0.45*** (0.03) |
| PSC → Commitment | 0.00 | 0.00 | 0.00 | 0.47*** (0.02) | 0.47*** (0.11) | 0.46*** (0.03) | 0.47*** (0.03) |
| PSC → Team resources | 0.00 | 0.00 | 0.00 | 0.49*** (0.09) | 0.49*** (0.09) | 0.49*** (0.09) | 0.49*** (0.09) |
| PSC → Team crafting | 0.00 | 0.00 | 0.00 | 0.43*** (0.08) | 0.45*** (0.07) | 0.43*** (0.08) | 0.43*** (0.08) |
| PSC → Engagement (average) | 0.00 | 0.00 | 0.00 | 0.44 *** (0.11) | 0.43*** (0.10) | 0.44*** (0.11) | 0.44*** (0.11) |
| PSC → Commitment (average) | 0.00 | 0.00 | 0.00 | 0.37** (0.11) | 0.38*** (0.10) | 0.37** (0.11) | 0.37** (0.11) |
| BIC | 10085.12 | 10038.59 | 9672.14 | 9006.56 | 8920.34 | 4740.31 | 4694.20 |
| Chi-square (df) | 1252.17(22) | 1198.77(21) | 791.10(15) | 70.56 (7) | 23.40 (6) | 58.55 (7) | 66.88 (7) |
| CFI | 0.42 | 0.44 | 0.63 | 0.97 | 0.99 | 0.95 | 0.95 |
| TLI | 0.34 | 0.33 | 0.39 | 0.90 | 0.97 | 0.83 | 0.83 |
| RMSEA | 0.24 | 0.24 | 0.23 | 0.09 | 0.06 | 0.12 | 0.13 |

Note. Est = estimate; *** $p < .001$.

individual-level analyses (Model 1) showed that individual resources were positively related to individual crafting. Further, individual resources and individual crafting were positively related to work-related outcomes (work engagement and organizational commitment). Next, team-level findings revealed that team resources were positively related to team crafting (Model 2). The team-individual cross-level analysis in the third step (Model 3) revealed a positive significant path from team crafting to average work engagement and average organizational commitment. With the restrictions on these paths being released, structure was gradually imposed on the two-level model. The following complex model showed a lower BIC and a lower Chi-square value than the simpler restricted model. The full structure model (M4) showed adequate fit, $\chi^2(7) = 70.56$, CFI = 0.97, TLI = 0.90, RMSEA = 0.09. Five regression paths in this model were non-significant (see Table 2). Further, we used a split-sample analysis whereby employees within the same work unit was randomly split into two groups: group A (N = 481, group size = 66) and group B (N = 482, group size = 66), to test the robust of the analytic results of M4. As shown in Table 2, the split-sample

analysis displayed largely similar regression paths, that affirmed the primary analysis in the full structure model M4.

Next, deleting all non-significant paths in M4 (at the individual level: individual resources → organizational commitment; at the team level: team resources → average work engagement and team resources → average organizational commitment; at the cross level: team crating ↔ average individual crafting), the final model M4-modified (cf. Fig. 1) was accepted as a more concise model than M4, as evidenced by a lower the BIC (8920.34 vs. 9006.56).

At the individual level, the relationships among individual resources, individual job crafting, work engagement and organizational commitment were positive and significant (see M4-modified). The indirect effects of individual resources through individual crafting on individual work engagement ($\beta = 0.08$, $se = 0.01$, $p < .001$) and organizational commitment ($\beta = 0.08$, $se = 0.01$, $p < .001$) were significant (Hypotheses 1a and 1b confirmed). At the team level, the indirect effect of team resources through team crafting on average work engagement ($\beta = 0.21$, $se = 0.06$, $p < .001$) and average organizational commitment ($\beta = 0.11$,

$se = 0.03, p < .001$) were significant was significant (Hypothesis 2a and 2b confirmed).

The paths linking PSC to individual resources and individual crafting were positive and significant ($\beta = 0.33$ and 0.34 respectively, $p < .001$). Hypotheses 3a and 3b proposed that PSC positively relates to individual resources and individual crafting and were therefore supported. The paths linking PSC to individual organizational commitment and individual work engagement were positive and significant ($\beta = 0.47$ and 0.44 , respectively, $p < .001$). Also, the path linking PSC to the mean profiles of individual organizational commitment and individual work engagement in the team was positive and significant ($\beta = 0.38$ and 0.43 , $p < .001$). H5a and H5b were confirmed. Further, the path coefficient linking PSC to team resources and team crafting was positive and significant ($\beta = 0.49$ & 0.45 , $p < .001$; H4a and H4b confirmed).

Three indirect effects of PSC on within-variables at the individual level and three indirect effects of PSC on the between-variables at the team level were found. Specifically, the indirect effects of PSC through individual resources on individual job crafting ($\beta = 0.10$, $se = 0.01$, $p < .001$; H3c confirmed) and the indirect effects of PSC through individual job crafting on work engagement ($\beta = 0.14$, $se = 0.02$, $p < .001$; H5c confirmed) and organizational commitment ($\beta = 0.14$, $se = 0.02$, $p < .001$; H5d confirmed). Moreover, the indirect effect of PSC through team resources on team crafting was significant ($\beta = 0.26$, $se = 0.07$, $p < .001$; H4c confirmed), and two significant indirect effects of PSC through team crafting on work engagement ($\beta = 0.46$, $se = 0.14$, $p < .001$) and organizational commitment ($\beta = 0.23$, $se = 0.07$, $p < .001$) were found.

4. Discussion

Psychosocial safety climate reflects a proximate psychosocial environment that potentially influences individual perceptions, attitudes and behaviors. The psychosocial safety meanings derived from the shared perceptions to management values, attitudes and philosophy regarding employees psychological health and safety. The overarching purpose of this study was to develop an integrated understanding of how PSC as a context factor impacts workers' individual attitudes and behaviors and their shared perceptions of work environment. Two sets of findings are consistent with expectations: (1) individual crafting mediated the effects of individual resources on employee work engagement and organizational commitment; moreover, team crafting mediated the effects of team resources on the team profile of employee work engagement and organizational commitment; and (2) PSC related positively to individual and team-level job resources and individual and team-level job crafting behaviour, further affecting employees' work engagement and organizational commitment.

4.1. Individual and team work functioning and motivational wellbeing outcomes

Job crafting is about resourcefulness. People holding many resources are motivated to put more effort into their crafting actions to shape their work into a meaningful job (Malo et al., 2016; Wrzesniewski & Dutton, 2001). The first goal of our study was to examine individual and team-level motivational functioning of job crafting within the context of job-related resources and wellbeing outcomes. Our findings revealed individual job crafting at the individual level and cooperative crafting at the team level are valuable strategies that bridge job resources and employee work engagement and organizational commitment. This indicates that both individual resources and team resources have motivational elements that facilitate job crafting at the individual and team levels to promote positive wellbeing outcomes. This finding was in accordance with earlier research showing that work characteristics spur employee motivation to adjust work behaviour to perform their job better (e.g., Hackman & Oldham, 1976; Katz, 1982). Likewise, this finding also suggests that team-level work functioning sets the stage for people to undertake self-regulated action in concert for self-

enhancement.

4.2. PSC, individual and team work functioning, and motivational wellbeing outcomes

Employees seek to derive meaning from the context in which they conduct their work. PSC provides a context from which employees derive meaning about the priority authority figures attach to psychological health and safety (Dollard & Bakker, 2010). Our study further explored the effect of PSC on individual and team-level motivational processes. The positive relationships of PSC with individual resources and individual crafting show that in safe organizational contexts managerial practices support the allocation of useful resources (i.e., support, feedback, development opportunities) and job crafting. The perceptions of PSC that reside within individuals exert a direct influence on individuals' attitudes, affect, and behavior (Ostroff, 2019). The positive relationships of PSC with individual work engagement and organizational commitment suggest that a high-PSC context is more likely to help people to function optimally. Furthermore, our study revealed a significant indirect effect of PSC on individual crafting through individual resources, and two significant indirect effects of PSC on work engagement and organizational commitment through individual crafting, respectively. This is consistent with the assumption that when senior management prioritizes and values psychological health, employees will be granted enough resources and more crafting opportunities to foster wellbeing and healthy functioning (Idris & Dollard, 2011; Schaufeli et al., 2009).

PSC has a contextual influence, not only on individual perceptions of psychosocial safety, but also on shared psychosocial safety perceptions. Our study revealed that PSC relates positively to team resources, and indirectly affects team crafting through team resources. Possibly, high PSC represents a "strong situation" that leads team members to construe and encode the resourcing situation similarly, and shapes team members' joint expectations about the most appropriate responses in various situations (Mullins & Cummings, 1999). As a resourceful environment, high PSC motivates team members to engage in collective crafting actions.

As a general context factor to all employees in an organization, no doubt PSC exist and are reflected at the any level of the organization in its entirety, particularly where these studied hospitals are departmentalized and multilayered. So we expect that it is sensible to identify teams within hospitals. Our study found a direct relation between PSC and team crafting and two indirect relations between PSC and the team profile of work engagement and organizational commitment via team crafting. The result demonstrates PSC as context reside outside of individual and team while affect the focal individual and team. As well as, the result indicates that PSC have an emergent property that operates through alignment with work factors at individual and team levels of analysis, such as individual resources and team-resources, and individual crafting and team crafting.

4.3. Theoretical implications

Identity-based motivation highlights both how contexts matter and what can be done about it (Oyserman et al., 2017). By integrating identity-based motivation, our study provides valuable insights into the relevance of organizational context (i.e., PSC) for individual-level and team-level job crafting processes, and helps to explain how and why PSC as context feature links to employees' work engagement and organizational commitment. Three important theoretical implications deserve mentioning.

First, PSC is generally defined as shared psychological meanings. Specifically, it is the overall meaning derived from the aggregation of individual perceptions of a work environment. A body of research supports the idea that PSC can best be considered an organizational phenomenon that resides at the group level. Based on an identity-based

motivation framework, our study suggest that the PSC is a phenomenon not only shared by team members as a property of the working team, but that can be measured by the perceptions of individuals as a property that concerns their work contexts. Therefore, our study provides a more systematic understanding of the implications of PSC by identifying the shared and individual perceptions of PSC and individual-level wellbeing outcomes, as well as the relationships between these concepts.

Second, job crafting relies on the willingness to experiment with the different aspects of job resources that comprise the job, as well as different ways of framing the significance of the job (Berg et al., 2013). In high PSC organizations, managers can help employees to access adequate job resources; in other words, PSC can work as a “resource passageway” to enhance or develop new resources (Dollard & Bakker, 2010; Mansour & Tremblay, 2018). Our study revealed that PSC is an antecedent to work conditions at the individual and team levels, more specifically, to individual resources, team resources and individual job crafting in the motivational pathway promoting individual optimal outcomes. The test of these concepts in our study provided support for the job crafting theory and proposes an extension of this theory with psychosocial work conditions.

Third, our study showed that individual- and group-level work processes combine to impact individual wellbeing outcomes. Therefore, a focus on just a single level is likely to provide an incomplete (or even inaccurate) understanding of these processes. Accordingly, we encourage researchers to consider how individual-level, and team-level predictors (i.e., job resources and job crafting), as well as context factor (i.e., PSC) work in concert to create the conditions leading to and inhibiting employees' work engagement and their commitment to the organization.

4.4. Practical implications

Our study also holds several implications for practice. First, we showed that motivational processes at both the individual and the team level may promote employee work engagement and organizational commitment. That is, individuals strive to grow and achieve not only through individual functioning, but also through team functioning. This finding also implies that effective job design is most relevant to the achievement of desired outcomes. This suggests that managers must design organizational structures, reward systems, activities, and communications in such a way that employee health and wellbeing are emphasized and enhanced. For instance, they should emphasize team resources when aiming to enhance team crafting and promote individual resources when they intend to stimulate employee proactive behaviour.

Second, our study showed that PSC has a positive influence on job resources and job crafting processes at the individual and team levels. This could imply that employees who experience greater psychosocial safety are more likely to challenge the status quo and to identify problems or opportunities for improvement. This suggests that managers should work to establish employee safety perceptions by developing supportive, trustworthy relations with their employees, by being consistent in their actions, by demonstrating a certain congruence between their words and actions, by using open communication and by demonstrating genuine concern for employees.

Third, our study showed that both individual crafting and team crafting promote employee work engagement and organizational commitment. This implies that the restoration of meaning in work could be a method to foster employee motivation and attachment to work. This suggests that managers should care about the aspirations and desires of employees, encouraging them to job craft to solve work-related problems, develop new skills, and participate in decisions.

4.5. Study limitations and directions for further research

Important limitations of this study are its cross-sectional design and its use of perceptual measures. As such, causal inferences cannot be

made. However, the split-sample analysis in full structure model (M4) helps to rule out inflated correlations due to single source responses. Further, some hypothesized relationships in our study (e.g., Hypothesis 3a and Hypothesis 5a) are consistent with the findings of earlier longitudinal research. For example, PSC positively predicted the change in individual resources (i.e., skill discretion) and the change in work engagement (Dollard & Bakker, 2010); and individual crafting predicted work engagement, in-role performance, and organizational citizenship behaviour one month later (Tims et al., 2014). Nevertheless, a longitudinal assessment is still needed for further testing the long-term effects of the effects of the integrative framework and propositions not examined in previous studies, such as Hypothesis 2 and Hypothesis 4. In addition, the study sample was limited to health professionals within two hospitals in China. Although there is no reason to believe otherwise, research is needed to explore whether the relations we found in the study generalize to other organizational settings, countries and cultures.

Another limitation is that this study relied solely on self-report measures, which may have biased the answers of the participants. However, job crafting behaviour and feelings of work engagement and organizational commitment are private, subjective experiences that are best assessed by asking employees themselves about these; it is difficult to see how these and other concepts in this study could have been measured otherwise. This may to some degree be resolved in further studies by including other work outcomes which allow for objective measures or other-ratings, such as individual performance, leader-rating team resources and leader-rating of team crafting.

Furthermore, this study included only the general context of PSC induced by the implementation of institutional policies and procedures by the organizational top management. It cannot explain distinctively different between-teams variation in the study outcomes, since team-level variation in the development and implementation of policies, practices, and procedures is likely to be influenced by informal supervisory practice such as praise-criticism or desired job-work-shift allocations (Zohar & Luria, 2005). A more precise multilevel PSC construct should be complemented with both the implementation of institutional policies and procedures and supervisory discretion between organizations and teams, as well as agreement within these clusters (Zohar & Luria, 2005). Such a multilevel PSC may explain a substantial portion of the homogeneity of perceptions at the organizational level and could also be related to the between-teams variation in the study outcomes.

5. Conclusion

By contributing to a better understanding of the contextual effects of PSC on employee work functioning at the individual and team levels and by highlighting the psychological and social mechanisms involved in these relationships, this study indicates that organizations should be aware that individual and team resources via job (re)design can have a major impact on wellbeing. It also reveals that a high PSC organizational context is likely to bridge the individual-team divide to help people achieve optimal functioning. Overall, PSC theory can serve as an integrative contextual framework to explain the complex interplay of factors from different sources (i.e., the team and the individual) that contribute to work motivation.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgement

The authors thank Professor Wilmar B Schaufeli who provided intellectual support for our study and Professor Christian Dormann who provided valuable comments on an earlier version of this manuscript.

Research Funders: National Nature Science Foundation of China, Grant numbers: 721002214, 72002203 and Zhejiang Provincial Natural Science Foundation of China, Grant numbers: LQ20G020018.

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