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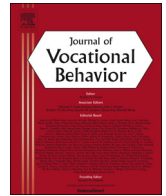
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Intrapersonal and interpersonal need fulfillment at work: Differential antecedents and incremental validity in explaining job satisfaction and citizenship behavior

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A B S T R A C T

Previous work on need fulfillment focused on the evaluation and consequences of the psychological benefits that employees derive from work, but has not fully considered the socioemotional benefits that employees acquire from working relationships. In this study, we introduce interpersonal need fulfillment as a distinct potential benefit that employees can derive from work that captures their appreciation for opportunities to connect and relate to others at work. We establish the distinctiveness of intrapersonal and interpersonal need fulfillment by identifying unique antecedents as well as show their independent contributions in predicting job attitudes and behaviors. We argue that consideration of perceptions of both intrapersonal and interpersonal need fulfillment allows for a more holistic assessment of the benefits that employees derive from work and for a better understanding of how employees' perceptions regarding the inducements that they receive at work affect their job attitudes and behavior. We conclude by discussing theoretical and practical implications and by outlining a number of venues for future research.

Theories about the employment relationship often rely on the general social exchange framework (e.g., Aselage & Eisenberger, 2003), which specifies that individuals enter into exchanges with organizations or their representatives to maximize their benefits (e.g., Blau, 1964). These benefits can be of both extrinsic and intrinsic value to the people involved in the exchange (Blau, 1964). For example, the employment relationship provides employees with valued extrinsic-material resources (e.g., adequate pay) as well as intrinsic-psychosocial resources (e.g., a high quality relationship with one's supervisor, or coworker support). Just as material resources tend to be subjectively processed by employees to assess their employment relationship, for example by comparing one's pay with that of others (e.g., Adams, 1965; Berkowitz, Fraser, Treasure, & Cochran, 1987), the subjective assessment of psychosocial benefits received from work (e.g., social support) is also important in determining employees' job attitudes and effectiveness (Chiaburu & Harrison, 2008).

In this article, we focus on commonly studied benefits and inducements that employees derive from the employment relationship. On the basis of social exchange theory, it is our contention in this article that employees reciprocate the receipt of such benefits and

inducements from their organization because these benefits and inducements fulfill employees' psychological needs. The psychosocial benefits that employees receive at work can fulfill both intrapersonal needs (e.g., having interesting work, receiving training) and interpersonal needs (e.g., receiving social support from coworkers, engaging in pleasant interactions), and this fulfillment fosters employee job satisfaction. Furthermore, increased job satisfaction associated with various job features or inducements (e.g., job autonomy or interpersonal justice) should be further associated with increased citizenship behaviors on the part of the satisfied employees who engage in these behaviors in order to reciprocate the satisfying inducements or job features, as predicted by social exchange theory (Blau, 1964; Homans, 1961). We therefore use social exchange theory as the overarching theoretical framework that ties together the constructs included in our study (e.g., interpersonal justice, perceived organizational support, need satisfaction, citizenship behaviors) and explains the relationships that we propose and test herein.

Various authors have studied reciprocation effects of exchange-based constructs such as employees' perceptions of organizational support (POS; e.g., Aselage & Eisenberger, 2003; Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001) or the quality of leader-member exchanges (see Ilies, Nahrgang, & Morgeson, 2007), thereby supporting social exchange theory at a general level. Whereas the identification of social exchanges in organizations has been connected to outcomes such as job satisfaction or citizenship behaviors (e.g., Ilies et al., 2007), it is unclear what are the specific psychological benefits that employees derive from the inducements provided by the organization. Identifying these psychological benefits is important because it would explain, in essence, why employees value the inducements and what drives reciprocation in these social exchanges. We shall make a case here that it is the fulfillment of basic intrapersonal and interpersonal needs that explains why employees' perceptions of the inducements and benefits received from their organizations are associated with increased job satisfaction, and further spur reciprocating actions such as organizational citizenship behaviors (OCBs).

The purpose of this current research is threefold. First, our theorizing expands upon current conceptualizations of social exchanges in employment relationships based mostly on the fulfillment of intrapersonal psychological needs (e.g., the psychological contracts literature; e.g., Sels, Janssens, & Van den Brande, 2004) to more fully capture employees' valuation of opportunities to have meaningful relationships and feel connected at work. Second, using self-determination theory (Ryan & Deci, 2000), we propose a new construct – interpersonal need fulfillment – that captures the extent to which an organization has fulfilled employees' needs for social connectedness and belonging at work, and explains why employees value and reciprocate inducements or benefits of an interpersonal nature within social exchanges at work. Third, we present initial evidence that interpersonal need fulfillment is distinct from intrapersonal need fulfillment, by identifying differential predictors and showing that the two constructs have unique contributions in predicting job satisfaction and OCBs. This is important because we contribute to the understanding of the psychological processes that explain why job characteristics and other work factors contribute to workers' satisfaction and citizenship behaviors. We start by outlining the theoretical basis for examining intrapersonal and interpersonal need fulfillment as distinct mechanisms in the social exchanges among organizations and their employees, and for proposing hypotheses concerning their antecedents and consequences. We then describe an empirical study seeking support for interpersonal need fulfillment as a distinct and consequential construct. We conclude by providing a discussion of the theoretical and practical implications of the findings revealed in the empirical study.

1. Theoretical development and hypotheses

As we explained above, we study intrapersonal and interpersonal need fulfillment at work as distinct constructs. Following Deci and Ryan (2000, p. 326) who define basic psychological needs as "those nutriments that must be procured by a living entity to maintain its growth, integrity, and health," we define intrapersonal need fulfillment at work as *the extent to which one's organization provides inducements for one's personal self (i.e., not in relation to others) that facilitate one's motivation, growth and well-being*. Examples of intrapersonal needs are the security, self-esteem, and autonomy needs from Porter's (1961) need hierarchy and measurement instrument, Deci and Ryan's competence and autonomy needs, and the need for money-luxury and the need for security from Sheldon, Elliot, Kim, and Kasser (2001).[1] Interpersonal need fulfillment is defined as *the extent to which one's organization provides inducements for the self as it relates to others within the social environment that facilitate one's motivation, growth and well-being*. Examples of interpersonal needs are Deci and Ryan's relatedness needs (which are also included in Sheldon et al. (2001) and Reis, Sheldon, Gable, Roscoe, and Ryan (2000)), the popularity-influence need from Sheldon et al. (2001), the need to belong (Baumeister & Leary, 1995), and Porter's social needs. Fulfillment of these needs has been shown to increase intrinsic motivation and to promote individual and relational well-being (Deci & Ryan, 2000; Patrick, Knee, Canevello, & Lonsbary, 2007; Ryan & Deci, 2000).

In this article, we specifically examine intrapersonal and interpersonal need fulfillment through a social exchange lens and we predict that need fulfillment will mediate part of the effects of job characteristics and other work factors on exchange outcomes (i.e., job satisfaction and citizenship behavior). In doing so, we follow Cropanzano and Mitchell's (2005) theorizing about the resources of exchange. That is, these authors note that even though early conceptualizations of resources in social exchange theory relied on economic value, more recently scholars viewed such exchanges more broadly, beyond material outcomes. Cropanzano and Mitchell further detail six types of resources in exchange, based on the Foa and Foa (1980) taxonomy: love, status, information, money, goods, and services. Relevant to our analyses, some of these resources are intrapersonal (e.g., money) while some are interpersonal (e.g., status). In a more general sense, we believe most resources that are exchanged in social exchanges can be categorized as intrapersonal or interpersonal, and that employee intrapersonal/interpersonal need fulfillment indicates that intrapersonal/interpersonal resources have been acquired by the employee which makes him or her more satisfied with his or her job and also more likely to reciprocate via

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[1] Sheldon et al. (2001) developed a list of 10 needs that also include autonomy, competence, and self-esteem.

citizenship behaviors. This exchange of resources perspective (Cropanzano & Mitchell, 2005) is also supported by self-determination theory, which suggests that need fulfillment signals that one has procured nutriments needed for growth, integrity and health (Deci & Ryan, 2000).

The importance of the social aspects of work was underscored in a meta-analysis looking at motivational, social, and work context characteristics in work design theory conducted by Humphrey, Nahrgang, and Morgeson (2007). Their model included several social factors such as *task interdependence* (i.e., the extent to which a job is contingent on others' work), *feedback from others* (i.e., the extent to which performance information is provided by other organizational members), *social support* (i.e., the extent to which a job provides opportunities for getting assistance, advice and friendship from either supervisors or coworkers), and *interaction outside the organization* (i.e., the extent to which a person is required to communicate with people external to the organization). Their results showed that these social factors were related to various attitudinal, behavioral, and work outcomes; importantly, social character-istics explained unique variance above and beyond motivational characteristics of work design in important work-related outcomes (e.g., 40% of variance in organizational commitment; 24% of variance in six satisfaction outcomes). All in all, the study demonstrated that social characteristics of work represent a significant and unique factor of work design, above and beyond the traditionally studied motivational characteristics. These findings suggest that a supportive social environment at work is likely to facilitate the fulfillment of employees' interpersonal needs and, we argue, the fulfillment of these social needs at work is likely to impact em-ployees' attitudes and behaviors. Thus, it is important to examine the social side of need fulfillment at work, and we do so by proposing interpersonal need fulfillment as a construct that is distinct from intrapersonal need fulfillment and has a unique con-tribution (and mediating role) in predicting job satisfaction and citizenship behaviors.

2. Antecedents of intrapersonal and interpersonal need fulfillment

Although the fulfillment of employees' expectations by their job or employer has been studied intensely in the psychological contracts literature (e.g., Rousseau, 1995), scholars have done so without distinguishing between the intrapersonal and interpersonal nature of the fulfilled (or not) expectations. In addition, research has often relied on measures that, we argue, mostly capture intrapersonal aspects of employees' psychological needs or expectations and their fulfillment (e.g., the measure developed by Coyle-Shapiro and Conway (2005)). Furthermore, this literature has not been focusing specifically on the fulfillment of employees' basic psychological needs, but rather on the discrepancy between what the employees are expecting from the employment relationship and what their employer actually provides (in terms of, for example, salary, training, job security, etc.; Turnley & Feldman, 2000). In this article, we focus specifically on employees' psychological needs and on their fulfillment. Specifically, as most of the organizational behavior literature implicitly focused on intrapersonal need fulfillment (even when in recent work using self-determination theory, organizational researchers often exclude the need for relatedness; e.g., De Gieter, Hofmans, & Bakker, 2018; Ilies et al., 2017), we propose interpersonal need fulfillment as a construct that can explain part of the relationship between the benefits and inducements that employees receive from their employer and the attitudes and behaviors of those employees.

To test the distinctiveness of interpersonal and intrapersonal need fulfillment, we set out to examine two interpersonal (inter-personal justice and social support) and two intrapersonal (procedural justice and job autonomy) constructs that we propose as potential antecedents of interpersonal and intrapersonal need fulfillment. There is a thematic correspondence between each set of antecedents on the one hand and intrapersonal and interpersonal need fulfillment on the other hand. This thematic correspondence reflects the personal and social aspects of the employment relationship and highlights the need to differentiate the two types of fulfillment. Because of its (im)personal nature, intrapersonal need fulfillment is likely to be more sensitive to structural features of the environment represented by constructs such as procedural justice and job autonomy. In contrast, because of its social nature, in-terpersonal need fulfillment is likely to be more sensitive to social features of the working environment represented by constructs such as interpersonal justice and coworker support. We also consider another potential antecedent, perceived organizational support, which encompasses evaluations of both structural features (e.g., working conditions) and social features (e.g., care for employees' opinions) of the workplace (Eisenberger, Huntington, Hutchison, & Sowa, 1986) and is thus likely to predict both intrapersonal and interpersonal need fulfillment. Finally, these two types of fulfillment are expected to have unique effects on job satisfaction and to mediate the effects of the five antecedents of need fulfillment on job satisfaction.

2.1. Procedural and interpersonal justice

We expect that procedural and interpersonal justice differentially affect perceptions of intrapersonal and interpersonal need fulfillment. Procedural justice is defined as fairness of formal procedures underlying organizational decisions regarding employees (Thibaut & Walker, 1975), whereas interpersonal justice refers to the fairness of interpersonal treatment during execution of pro-cedures underlying organizational decisions (Bies & Moag, 1986). Research suggests that the two justice dimensions are distinct, and more importantly, they have differential impact on employee's attitudes and behavior through different mechanisms (Masterson, Lewis, Goldman, & Taylor, 2000; Tekleab, Takeuchi, & Taylor, 2005). The difference between procedural and interpersonal justice lies in their social nature. The former is (im)personal and deals with the fairness of the decision-making processes that every em-ployee faces; the latter is by nature interpersonal and deals with how fairly each individual is treated during the enactment of decisions (Bies, 2001).

Procedural justice has been theorized to be an important input factor affecting the quality of social exchange relationships between employees and employers (e.g., Tekleab et al., 2005). Perceptions of fairness of procedures tend to generalize to the or-ganization, which has developed the procedures. Yet an organization is a rather impersonal entity and procedural justice perceptions

should therefore not influence social relationships at work per se. Rather, procedural justice relates to structural elements of the work environment and offers intrapersonal benefits such as a sense of environmental stability and ethical climate to the employee (e.g., Konovsky, 2000). In line with this notion, research has shown that employees' perceptions of procedural justice were associated with organization-directed OCBs but not with supervisor-directed OCBs (Masterson et al., 2000). There are clear theoretical reasons and empirical support, therefore, to expect that perceptions of procedural justice will be associated with perceptions of intrapersonal need fulfillment.

Hypothesis 1a. Procedural justice will be positively associated with intrapersonal need fulfillment.

Events and experiences that are high in interpersonal justice tend to be polite, dignified, and respectful interactions and are likely to make employees feel respected and valued. For example, Simons and Roberson (2003) found that the interpersonal component of justice perceptions increased employees' satisfaction with their supervisor, affective commitment towards their organization, and discretionary work behaviors. Positive social interactions at work facilitate the fulfillment of socioemotional needs (Reich & Hershcovis, 2011) and recent work suggests that interpersonal justice brings people together, provides information about their standing in a group, and reinforces their desire to belong (Cropanzano, Byrne, Bobocel, & Rupp, 2001; De Cremer, 2002; De Cremer & Tyler, 2005; Reb, Goldman, Kray, & Cropanzano, 2006). Because interpersonal need fulfillment is concerned with satisfying one's needs for social interactions, interpersonal justice provides a positive and high-quality form of social exchange in the organization that fulfills these needs (e.g., Cropanzano et al., 2001). Thus, interpersonal justice is likely to affect perceptions of interpersonal need fulfillment.

Hypothesis 1b. Interpersonal justice will be positively associated with interpersonal need fulfillment.

2.2. Job autonomy and coworker support

Job autonomy provides a chance for employees to have control over their jobs and is significantly related to job satisfaction, job performance, turnover intentions, and organizational commitment (Greenberger, Strasser, Cummings, & Dunham, 1989; Humphrey et al., 2007; Mathieu & Zajac, 1990). Because job autonomy is a job characteristic that is often expected to be part of the employment relationship (e.g., Kickul, Lester, & Finkl, 2002), perceptions of job autonomy affect employees' perceptions of intrapersonal need fulfillment as these are typically used to capture psychological contract fulfillment or breach (Coyle-Shapiro & Conway, 2005). Social support from coworkers, on the other hand, provides a way to fulfill the need for relatedness, which refers to the basic desire to interact, connect, and care for others (Baumeister & Leary, 1995). Social support at work represents interpersonal interactions of care and help that are likely to fulfill this need (Reich & Hershcovis, 2011). For example, Tschan, Semmer, and Inversin (2004) found that employees who have more interactions at work and are more satisfied with these interactions tend to have higher affective commitment and job satisfaction. Receiving social support from within the organization facilitates the need for relatedness (e.g., Reich & Hershcovis, 2011), suggesting that employees perceive the organization to have fulfilled part of its obligations to provide a safe and supportive environment. Therefore, it stands to reason that social support is an antecedent of interpersonal need fulfillment, because receiving social support at work addresses employees' needs to connect and to relate to others.

Hypothesis 2a. Job autonomy will be positively associated with intrapersonal need fulfillment.

Hypothesis 2b. Coworker support will be positively associated with interpersonal need fulfillment.

2.3. Perceived organizational support

POS refers to employees' "beliefs concerning the extent to which the organization values their contribution and cares about their well-being" (Eisenberger et al., 1986: 501). This construct has been extensively studied in the field, focusing on its relationships with work-related outcomes such as organizational commitment, job satisfaction, performance, and turnover intentions. In general, the literature is consistent in demonstrating that POS has positive effects on these work-related outcomes (e.g., Allen, Shore, & Griffeth, 2003; Armeli, Eisenberger, Fasolo, & Lynch, 1998). POS encompasses evaluation of both system-level features (e.g., working conditions) and social features (e.g., organizational concern for employees' well-being) (Eisenberger et al., 1986). For this reason, we do not expect POS to have differential effects but to contribute to both intrapersonal and interpersonal need fulfillment perceptions. Hence, we hypothesize the following:

Hypothesis 3. Perceived organizational support will be positively associated with (a) intrapersonal need fulfillment, and (b) interpersonal need fulfillment.

3. Consequences of intrapersonal and interpersonal need fulfillment

Job satisfaction represents a global assessment of different aspects of one's job ranging from the extent to which the job fulfills basic physiological and psychological needs to broader cognitive evaluations (Spector, 1997). Employees who perceive that their organization has fulfilled its obligations towards them are more likely to be satisfied with their job (Turnley & Feldman, 2000). Thus, consistent with prior arguments in the literature, we expect that intrapersonal need fulfillment will be positively associated with job

satisfaction. We also predict that intrapersonal need fulfillment mediates the effects of procedural justice, job autonomy, and POS on job satisfaction. That is, we propose that experiencing job autonomy, POS and procedural justice contributes to intrapersonal need fulfillment, which in turn, has an effect on job satisfaction. Thus, while job autonomy (Humphrey et al., 2007), POS (Eisenberger, Cummings, Armeli, & Lynch, 1997), and procedural justice (McFarlin & Sweeney, 1992) are likely to contribute to job satisfaction directly, they also contribute to job satisfaction via perceptions of intrapersonal need fulfillment.

Whereas job autonomy and other important job characteristics such as skill variety and feedback have received much attention in the management literature, this literature seems to have neglected the "interpersonal" job dimensions that Hackman and Lawler (1971) originally developed – dealing with others and friendship opportunities (Humphrey et al., 2007). Focusing on this under-explored social-relational aspect of work, Riordan and Griffeth (1995) developed and tested a model relating perceived friendship opportunities to work-related outcomes. Other studies since then have demonstrated that friendships at the workplace affect job satisfaction, performance, involvement, team cohesion, organizational commitment, turnover intentions, and negative emotions (Berman, West, & Richter, 2002; Morrison, 2004; Winstead, Derlega, Montgomery, & Pilkington, 1995). Clearly, the workplace provides opportunities for employees to engage in interactions that directly contribute to the fulfillment of socioemotional needs (Reich & Hershcovis, 2011). Research indicates that positive social interactions at work contribute positively to job satisfaction (Babin & Boles, 1996; Dimotakis, Scott, & Koopman, 2011; Ducharme & Martin, 2000). Therefore, perceptions of interpersonal need fulfillment are likely to be associated with job satisfaction. Moreover, interpersonal need fulfillment is likely to mediate the effects of interpersonal justice, coworker support, and POS on job satisfaction. Research indicates that interpersonal justice (Masterson et al., 2000; McFarlin & Sweeney, 1992), coworker support (Chiaburu & Harrison, 2008; Chou & Robert, 2008), and POS (Eisenberger et al., 1997; Rhoades & Eisenberger, 2002) contribute to job satisfaction. We posit that this is partly because these social processes contribute positively to interpersonal need fulfillment. Consistent with the arguments made thus far, we hypothesize:

Hypothesis 4. Intrapersonal and interpersonal need fulfillment will have independent relationships with job satisfaction such that each of these constructs will be positively related to job satisfaction while controlling for the other.

Hypothesis 5. Intrapersonal need fulfillment will partially mediate the associations of procedural justice, job autonomy, and POS with job satisfaction; and interpersonal need fulfillment will partially mediate the associations of coworker support, interpersonal justice, and POS with job satisfaction.

Social exchange theory posits that favorable treatment by others produces the necessity to reciprocate (Blau, 1964). Fulfilled psychological needs, therefore, are likely to motivate employees to reciprocate and preserve positive ties by engaging in OCBs (Chiniara & Bentein, 2016). Furthermore, it is our general hypothesis that the favorable inducements and benefits considered in this research project (e.g., justice, autonomy, POS) result in satisfied employees who are likely to engage in OCBs (Greguras & Diefendorff, 2010) in order to match these inducements because the receipt of these inducements fulfills employees' intrapersonal and interpersonal needs. Psychological needs – whether they refer to personal or social aspects of the job – are fulfilled via positive social exchanges that are likely to contribute to perceptions of job satisfaction (Dimotakis et al., 2011), and these positive social exchanges suggest that employees' reciprocate the favorable treatment received by their organization by engaging in OCBs. Building on research that acknowledges job satisfaction as an important antecedent of OCBs (Ilies, Fulmer, Spitzmuller, & Johnson, 2009; Organ & Ryan, 1995), we posit that when employees perceive that their intrapersonal and interpersonal needs are fulfilled by the organization, they will become more satisfied with their job and will consequentially be more likely to reciprocate by engaging in OCBs. For these reasons, we hypothesize the following:

Hypothesis 6. (a) Intrapersonal and (b) interpersonal need fulfillment will have positive indirect effects on organizational citizenship behavior through job satisfaction.

In sum, based on the theory and research reviewed above, we propose a model that identifies one common antecedent (POS) and four differential antecedents of intrapersonal and interpersonal need fulfillment; procedural justice and job autonomy for intrapersonal need fulfillment, and interpersonal justice and coworker support for interpersonal need fulfillment. Perceptions of intrapersonal and interpersonal need fulfillment are then proposed to mediate the effects of these antecedents on job satisfaction. Finally, the model suggests that intrapersonal and interpersonal need fulfillment perceptions ultimately affect OCBs via job satisfaction.

4. Method

4.1. Sample and procedures

The majority of participants (70%) were employees at a local government and the rest were employed full time at a large state university in a Midwestern state in the United States. Participants were recruited through an email letter soliciting participation that was sent to a random sample of emails listed in the directories of these institutions. The sample consisted of personnel from a variety of occupational fields. Specifically, 10.5% of participants indicated that they had administrative supporting roles (titles were administrative assistant, secretary, receptionist, and office assistant), 4.3% were nurses, 21% were in managerial positions (titles were director, assistant director, manager, unit supervisor), 6.2% were law enforcement (titles were trooper, sergeant, lieutenant, correction officer, emergency dispatcher), 3.1% were social workers (titles were case worker, clinical social worker), 4.3% were analysts (titles were analyst and billing clerk), 3.1% were engineers (titles were signing engineer, transportation engineer, civil engineering

technician), and 6% were IT specialists (titles were information and statistics engineer, information technologist, IT professional). Participation in the study was voluntary and employees who completed the study were included in a random drawing for a participation honorarium. Two hundred and forty six individuals expressed interest in our research by completing at least one of the surveys in the study. The average age of the sample was 46.81 years ($SD = 10.21$), the average organizational tenure was 14.85 years ($SD = 9.53$) and 64% of participants were women. Comparison of means tests showed no significant differences in any of our study variables between the two organizations, or in age and gender.

Survey instruments were administered at two different times. At time 1, we had 238 employees report their perceptions of procedural justice, job autonomy, perceived organizational support, perceived coworker support, and interpersonal justice. Approximately two weeks later, at time 2, we had 173 employees report perceptions of intrapersonal need fulfillment, interpersonal need fulfillment, and job satisfaction. We also collected ratings of OCBs from participants' coworkers at time 2. One hundred and ninety peers provided ratings for 115 employees. Of the 246 employees who participated in the study, 162 individuals completed both time 1 and time 2 surveys, and 104 of these had coworker-rated citizenship behaviors scores available.

4.2. Measures

Unless otherwise indicated, all items used a Likert-type scale anchored at 1 = *strongly disagree* and 5 = *strongly agree*.

4.2.1. Procedural justice

We measured procedural justice by adapting six items from Niehoff and Moorman (1993). Examples of items are: "Job decisions are made by management in an unbiased manner," and "All job decisions are applied consistently across all affected employees." The internal consistency score for this scale was 0.90.

4.2.2. Job autonomy

We assessed job autonomy with nine items from the Work Design Questionnaire (Morgeson & Humphrey, 2006) and two items from Kossek, Lautsch, and Eaton (2009). The measure by Morgeson and Humphrey assesses multiple aspects of employees' perceptions of autonomy at work (e.g., deciding on the order in which things are done, methods used to complete work, etc.), and the two items by Kossek et al. (2009) specifically address employees' control over where and when he or she conducts the work. Examples of items are: "My job allows me to make my own decisions about how to schedule my work," and "My job allows me to plan how I do my work." Internal consistency for this scale was 0.96.

4.2.3. Perceived organizational support

We measured perceived organizational support with Eisenberger et al.'s (1997) short version of the Survey of Perceived Organizational Support. The survey has eight items, examples of which are: "My organization strongly considers my goals and values," and "My organization cares about my opinions." Internal consistency for this scale was 0.89.

4.2.4. Perceived coworker support

Similar to previous research (e.g., Mossholder, Settoon, & Henagan, 2005), we measured coworker support with six items based on the measure by Eisenberger et al. (1986). Examples of items are: "My coworkers really care about my well-being," "My coworkers care about my opinions." Internal consistency was 0.89.

4.2.5. Interpersonal justice

We measured interpersonal justice with four items developed by Colquitt (2001). Examples of items are: "Has your manager/supervisor treated you in a polite manner?" "Has your manager/supervisor treated you with dignity?" Responses to these items ranged from 1 = *not at all* to 5 = *to a very large extent*. The internal consistency score for these four items was 0.95.

4.2.6. Intrapersonal need fulfillment

We adapted the twelve-item psychological contract measure developed by Coyle-Shapiro and Conway (2005) to measure intrapersonal need fulfillment. At time 2, employees were asked to indicate their perceptions of the extent to which their employer had provided them with a number of different practices. Examples of items are: "The necessary training to do my job well" and "Interesting work." Although this is an indirect measure of need fulfillment, we believe that the organizational inducements specified in the measure reflect most employees' needs (e.g., most people value, for example, interesting work). Respondents' agreement with these items was scored on a 5-point scale (1 = *not at all*; 5 = *to a very large extent*). Internal consistency for this scale was 0.91.

4.2.7. Interpersonal need fulfillment

We developed a measure of interpersonal need fulfillment for this study by relying on work by Sheldon et al. (2001); Den Hartog, De Hoogh, and Keegan (2007), and Reis et al. (2000) on relatedness and belongingness. We wrote twelve items (see Appendix A) that assessed the extent to which employees had been provided with opportunities to experience close connections with coworkers and supervisors in the workplace. Examples are: "My job has given me opportunities to feel close and connected to other people at work," "My job has given me opportunities to be understood and appreciated by coworkers and supervisors." Like with the intrapersonal need fulfillment measure, this is an indirect need fulfillment measure, and although there might be individual differences in the extent to which employees value or need these opportunities to experience connectedness and belongingness at work, these are also

opportunities that most employees value, and thus we believe that having such opportunities fulfills most employees' interpersonal needs. Respondents' agreement with these items was scored on a 5-point scale (1 = *not at all*; 5 = *to a very large extent*).

We tested the internal consistency and factor distinctiveness of the interpersonal need fulfillment scale in two independent student samples before the main study was conducted. We had students complete both intrapersonal and interpersonal need fulfillment scales and instructed them to answer thinking about their current employer, or last employer if they were not currently employed. The first sample was composed of 119 students (M_{age} = 21.05, SD = 1.82; 56% were women), whereas the second sample was composed of 83 students (M_{age} = 21.1, SD = 1.4, 75% were women). Internal consistency for the interpersonal need fulfillment scale was good in both student samples (0.90 and 0.92, respectively). Chi-square difference tests in both samples showed that the two factor model fitted the data better than the one factor model ($\Delta\chi^2$ [1, n = 119] = 150, p < .01; $\Delta\chi^2$ [1, n = 83] = 233, p < .01), indicating that interpersonal need fulfillment is a distinct construct from intrapersonal fulfillment.

We conducted factor analyses with the current employee sample and again found that intrapersonal and interpersonal need fulfillment represent two separate constructs, and that the scores for all variables included in the study were distinct.[2] That is, a 9-factor model fitted the data well (CFI = 0.96, TLI = 0.95, RMSEA = 0.05) and this fit was significantly better than the fit of an 8-factor model with a single need fulfillment construct ($\Delta\chi^2$ [8, n = 254] = 196, p < .01).[3] The internal consistency for the interpersonal need fulfillment scores in the employee sample was 0.96.

4.2.8. Job satisfaction

We measured job satisfaction at time 2 with 18 items from the Job Descriptive Index (JDI) (Smith, Kendall, & Hulin, 1969). Respondents were asked to indicate whether certain phrases and words described their work (1 = *Yes, it describes my work*, 2 = *No, it does NOT describe my work*, and 3 = *Not Applicable*). Examples of these phrases are: "fascinating" and "boring." In accordance with the JDI manual, answers were recoded to 3 for "yes" to positive phrases and "no" to negative ones, 0 for "no" to positive phrases and "yes" to negative ones, and 1 for "not applicable". Internal reliability for this scale was 0.85.

4.2.9. Organizational citizenship behavior

Coworkers rated the frequency with which participants engaged in organizational citizenship behavior at work by completing the 16-item scale developed by Lee and Allen (2002). Examples of items are "Defends the organization when other employees criticize it" and "Gives up time to help others who have work or non-work problems." Respondents selected frequencies from a 5-point scale (1 = *Never*; 5 = *Always*). Although the Lee and Allen (2002) measure intended to capture behaviors directed towards the organization or individuals, we decided to collapse these subscales into one overall OCBs measure since they were highly correlated (r = 0.75). This approach is consistent with previous research that has utilized this scale (e.g., Piccolo & Colquitt, 2006). Internal consistency for the overall OCBs scale was 0.93.

5. Analyses and results

Table 1 presents means, standard deviations, internal consistency estimates, and correlation coefficients for all study variables. We tested our theoretical model using path analyses in AMOS 23 (Arbuckle, 2014). Our final sample size for the path analysis, conducted with full information maximum likelihood (instead of using methods like listwise and pairwise deletion, or mean imputation), was 162. We specified covariances between the exogenous variables in our model. In addition, we allowed for a covarying association between intrapersonal and interpersonal need fulfillment because we consider these distinct yet related constructs. To assess fit to the data, we report the chi-square value (χ^2), the Comparative Fit Index (CFI; Bentler, 1990), the Normed Fit Index (NFI; MacCallum, Roznowski, Mar, & Reith, 1994), and the Root-Mean-Square Error of Approximation (RMSEA; MacCallum, Browne, & Cai, 2006). The mediation hypotheses were tested with a package called 'RMediation' (Tofighi & MacKinnon, 2011). The program produces estimates of indirect effects as well as confidence intervals around such effects on the basis of the distribution-of-the-product method.

First, we tested our hypothesized model (Model 1) that integrates all the relationships proposed in the hypotheses. Although the chi-square test was significant (χ^2(16) = 27.37, p = .038), other fit indices further showed that this model fit the data rather well (e.g., NFI = 0.95, CFI = 0.98, RMSEA = 0.07), which suggests general support for the hypotheses advanced herein. Nevertheless, we also tested alternative structural path models and Table 2 summarizes results comparing the different nested models through the $\Delta\chi^2$ statistic. Model 1 is the hypothesized model and contains only the hypothesized paths. Compared to the hypothesized model, Model 2 contains additional paths from interpersonal justice and perceived coworker support to intrapersonal need fulfillment and from procedural justice and job autonomy to interpersonal need fulfillment. Building on Model 2, Model 3 includes additional paths from intrapersonal and interpersonal need fulfillment directly to OCBs. Compared to the hypothesized model, Model 4 contains two additional paths from intrapersonal and interpersonal need fulfillment directly to OCBs (but not the paths from interpersonal justice and perceived coworker support to intrapersonal need fulfillment and from procedural justice and job autonomy to interpersonal need fulfillment as Models 2 and 3 contain). Comparisons of the different models to the hypothesized model indicated that the

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[2] For these analyses, we constructed two to four parcels for each variable because of the large number of items (93) and, consequently, improved our relatively low sample size to number of items ratio (see Kline, 2005). This approach is generally preferred when the goal is to understand the relationships among latent variables (as we seek to understand) and not the relations among items (Williams & O'Boyle, 2008).

[3] The other fit indices also suggested a better fit for the 9-factor model (e.g., CFI = 0.96 vs. 0.91, TLI = 0.95 vs. 0.88, RMSEA = 0.05 vs. 0.08).

Table 1

Descriptive statistics and correlations among study variables.

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1	Procedural Justice	2.80	0.80	0.90								
2	Job Autonomy	3.57	0.89	0.43**	0.96							
3	Perceived Organizational Support	3.04	0.74	0.64**	0.43**	0.89						
4	Coworker Support	3.54	0.72	0.22**	0.37**	0.42**	0.89					
5	Interpersonal Justice	4.12	0.99	0.45**	0.29**	0.35**	0.16*	0.95				
6	Intrapersonal Need Fulfillment	3.17	0.75	0.53**	0.43**	0.62**	0.33**	0.36**	0.91			
7	Interpersonal Need Fulfillment	3.18	0.79	0.45**	0.42**	0.58**	0.56**	0.38**	0.59**	0.96		
8	Job Satisfaction	37.60	11.85	0.39**	0.40**	0.40**	0.30**	0.24**	0.48**	0.42**	0.85	
9	Organizational Citizenship Behavior	4.20	0.54	0.21*	0.03	0.22*	0.18	0.19	0.26**	0.18	0.26*	0.93

$N = 104$–162. Internal consistency scores are displayed on the diagonal.

* $p < .05$.
** $p < .01$.
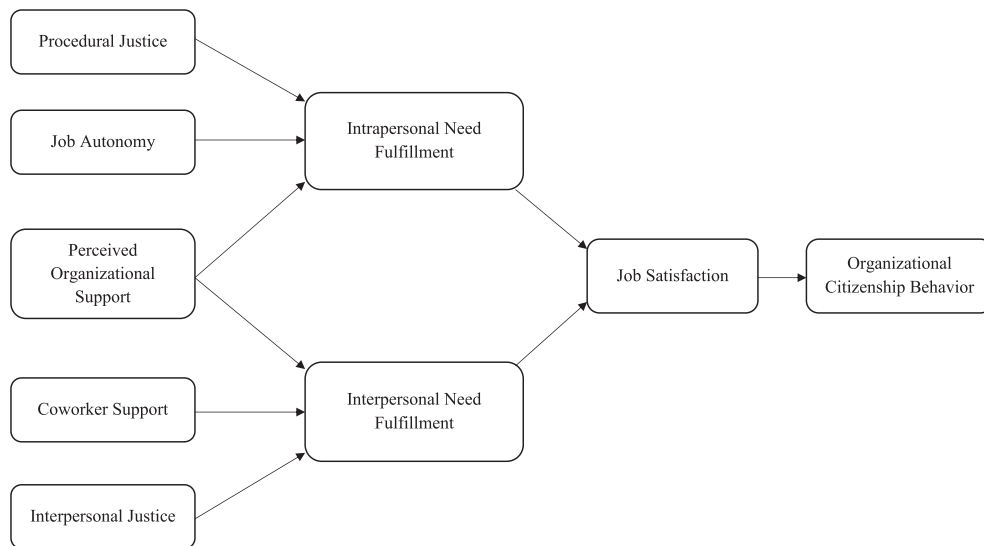
Fig. 1. Hypothesized model.

Table 2

Comparisons of nested structural path models.

	χ^2	df	NFI	CFI	RMSEA	AIC	Comparison	$\Delta\chi^2$
Model 1: Hypothesized model (Fig. 1)	27.371	16	0.95	0.98	0.066	103.37		
Model 2: Hypothesized model plus four additional paths: interpersonal justice and perceived coworker support to intrapersonal need fulfillment, and procedural justice and job autonomy to interpersonal need fulfillment.	19.692	12	0.96	0.98	0.063	103.69	Model 1 vs. Model 2	7.68[ns]
Model 3: Hypothesized model plus six additional paths: interpersonal justice and perceived coworker support to intrapersonal need fulfillment; procedural justice and job autonomy to interpersonal need fulfillment; and intrapersonal and interpersonal need fulfillment to OCB.	16.919	10	0.97	0.99	0.066	104.92	Model 1 vs. Model 3	10.45[ns]
Model 4: Hypothesized model plus two additional paths: intrapersonal and interpersonal need fulfillment to OCB.	24.598	14	0.95	0.98	0.069	104.60	Model 1 vs. Model 4	2.77[ns]
Null Model	501.851	45				519.85		

$N = 162$.

Table 3
Path coefficients.

Hypothesis	Path from	To	Unstandardized path coefficient	SE	Critical ratio
1a	Procedural justice	Intrapersonal need fulfillment	0.15*	0.07	2.02
1b	Interpersonal justice	Interpersonal need fulfillment	0.13**	0.05	2.82
2a	Job autonomy	Intrapersonal need fulfillment	0.12*	0.06	2.09
2b	Perceived coworker support	Interpersonal need fulfillment	0.40***	0.07	6.05
3a	Perceived organizational support	Intrapersonal need fulfillment	0.47***	0.08	5.86
3b	Perceived organizational support	Interpersonal need fulfillment	0.40***	0.07	5.71
4	Intrapersonal need fulfillment	Job satisfaction	5.63***	1.28	4.42
	Interpersonal need fulfillment	Job satisfaction	3.12*	1.22	2.57
	Job satisfaction	OCBs	0.01**	0.004	2.64

* $p < .05$.
** $p < .01$.
*** $p < .001$.

hypothesized model is a more parsimonious representation of the relationships among the study variables that fits the data equally well as the more complex models (see Table 2).

5.1. Tests of hypotheses

Table 3 summarizes the path coefficients for the hypothesized model, and standardized coefficients are presented in Fig. 2. Both clauses of Hypotheses 1a and 1b were supported; procedural justice was positively related to intrapersonal need fulfillment ($\beta = 0.16$, $p = .04$) and interpersonal justice was positively related to interpersonal need fulfillment ($\beta = 0.17$, $p = .005$). Hypotheses 2a and 2b were also supported by the data, as the paths from job autonomy to intrapersonal need fulfillment and from coworker support to interpersonal need fulfillment were positive and statistically significant ($\beta = 0.14$, $p = .04$ and $\beta = 0.37$, $p < .001$, respectively). In addition, when estimating Model 2, the paths from procedural justice and job autonomy to interpersonal need fulfillment ($\beta = 0.08$, $p = .34$ and $\beta = 0.09$, $p = .16$, respectively) and from interpersonal justice and coworker support to intrapersonal need fulfillment ($\beta = 0.10$, $p = .12$ and $\beta = 0.07$, $p = .32$, respectively) were not significant; this lends support to our general thesis regarding the distinctiveness of intrapersonal and interpersonal need fulfillment and its respective differential predictors. Hypothesis 3 was also supported, in that the path coefficients from POS to both intrapersonal and interpersonal need fulfillment were positive and statistically significant ($\beta = 0.46$, $p < 0.001$ and $\beta = 0.37$, $p < .001$, respectively).

Hypothesis 4 predicted that intrapersonal and interpersonal need fulfillment will have independent effects on job satisfaction. Indeed, as shown in Fig. 2 (and Table 3) both need fulfillment constructs had significant effects on job satisfaction ($\beta = 0.36$, $p < .001$ for intrapersonal need fulfillment and $\beta = 0.21$, $p = .01$ for interpersonal need fulfillment). Notably, since this model essentially estimates these effects simultaneously (each effect is estimated while controlling for the other), the results show predictive
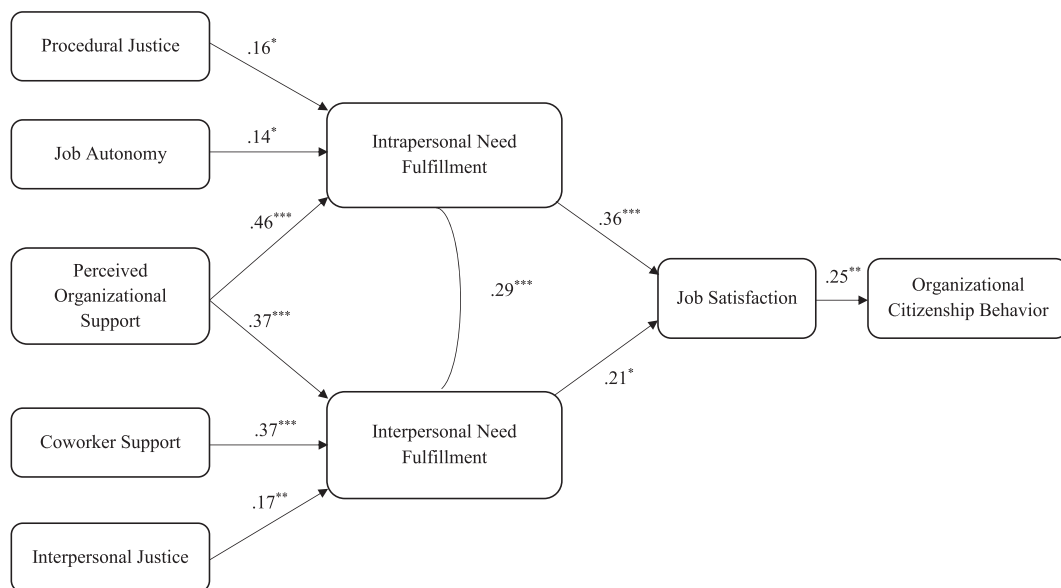

Fig. 2. Tested model. Chi-square = 27.37 (p = .038); NFI = .95; CFI = .98; RMSEA = .066. Standardized path coefficients are shown. *p < .05. **p < .01. ***p < .001.

and incremental validity for interpersonal need fulfillment. That is, with respect to interpersonal need fulfillment, its positive and significant effect on job satisfaction shows that employees' fulfillment of interpersonal needs contributes positively to their job satisfaction regardless of (or controlling for) intrapersonal need fulfillment. This finding, again, suggests that these two constructs are distinct and that there is value in considering the social aspects of jobs and employees' feelings about whether their organization has fulfilled their needs to connect and relate to others at work.

To test Hypothesis 5, we drew direct paths from procedural justice, job autonomy, POS, coworker support, and interpersonal justice to job satisfaction. Chi-square difference tests indicated that this nested model did not fit significantly better than our hypothesized model ($\Delta\chi^2$ (Δ $df = 5$) = 6.52, $p = .26$), indicating that intrapersonal and interpersonal need fulfillment mediated the effects of these antecedents on job satisfaction. Furthermore, mediation tests conducted using 'RMediation' showed that the six indirect paths were significant (the indirect effect estimate for procedural justice = 0.822, 95% CI [0.026, 1.811]; for job autonomy = 0.647, 95% CI [0.038, 1.408]; for POS through intrapersonal need fulfillment = 2.64, 95% CI [1.302, 4.253]; for POS through interpersonal need fulfillment = 1.244, 95% CI [0.277, 2.39]; for coworker support = 1.241, 95% CI [0.278, 2.366]; for interpersonal justice = 0.409, 95% CI [0.054, 0.918]). Thus, Hypothesis 5 was supported by the data.

Finally, Hypothesis 6 proposed that intrapersonal and interpersonal need fulfillment have indirect effects on OCBs through job satisfaction. The fact that the two need fulfillment constructs had positive and significant effects on job satisfaction, coupled with the positive and significant link between job satisfaction and OCBs ($\beta = 0.25$, $p = .008$), suggests support for this hypothesis. Chi-square difference tests indicated that the nested model (containing two additional direct paths from need fulfillment perceptions to OCBs) did not fit significantly better than our hypothesized model ($\Delta\chi^2$ (Δ $df = 2$) = 2.77, $p = .25$), indicating that job satisfaction mediated the effects of intrapersonal and interpersonal need fulfillment on OCBs. Upon closer investigation, mediation tests showed that the two indirect paths were significant (indirect effect estimate = 0.062, 95% CI [0.016, 0.121] for intrapersonal need fulfillment; and indirect effect estimate = 0.034, 95% CI [0.004, 0.077] for interpersonal need fulfillment). Thus, we found support for Hypothesis 6. Overall our model explained 42% of variance in intrapersonal need fulfillment, 48% in interpersonal need fulfillment, 25% in job satisfaction, and 6% in OCBs.

6. Discussion

In this article, we focused on examining the socioemotional benefits that employees gain from working relationships as a pathway to promote positive job attitudes and behaviors. To better capture the effects of job benefits and experiences on attitudes and behaviors, we proposed a new construct – interpersonal need fulfillment. Drawing from self-determination theory, we suggest that the social aspects of the working environment fulfill one's interpersonal needs, and that these are valuable to employees to receive and employers to provide (Reich & Hershcovis, 2011; Wayne, Shore, & Liden, 1997). Based on social exchange theory, we hypothesized that such interpersonal need fulfillment results in employees being likely to reciprocate in the workplace via OCBs, and they do so because their job satisfaction is increased by need fulfillment. Thus, the main purpose of the current work was to demonstrate that employees value opportunities to connect and relate to coworkers and that these are best represented by perceptions of interpersonal need fulfillment, a parallel yet distinct construct from intrapersonal need fulfillment. We established distinctiveness among intrapersonal and interpersonal need fulfillment by showing that these two constructs have differential predictors as well as unique contributions to attitudinal and behavioral outcomes.

Specifically, we found that perceptions related to structural work characteristics (e.g., procedural justice and job autonomy) predicted intrapersonal need fulfillment, which tends to be more sensitive to intrapersonal benefits (e.g., Robinson, Kraatz, & Rousseau, 1994; Rousseau, 1995). In contrast, perceptions of social treatment (e.g., coworker support and interpersonal justice) predicted interpersonal need fulfillment, which is more sensitive to interpersonal benefits such as opportunities to connect with others at work. POS embodies perceptual awareness of both structural (e.g., fair pay) and social (showing care) features of the workplace (Eisenberger et al., 1986) and, as expected, was related to both intrapersonal and interpersonal need fulfillment. In addition, we found that intrapersonal and interpersonal need fulfillment had independent contributions in predicting job satisfaction, which was further related to peer-rated OCBs. Job satisfaction, in turn, mediated the effects of intrapersonal and interpersonal need fulfillment on peer-rated OCBs. Based on these findings, we believe that our research makes a number of important theoretical and practical contributions. Below we elaborate on these contributions.

6.1. Theoretical and practical implications

Theory and research on need fulfillment at work has delved into how features of the work environment promote positive job attitudes and behavior via personal need fulfillment. A key theoretical contribution of our study is to distinguish the intrapersonal and interpersonal nature of these work characteristics, and show that they affect job satisfaction through intrapersonal and interpersonal need fulfillment respectively. This distinction explicitly recognizes the interpersonal benefits that employees value and receive at work as a specific mechanism that leads to job satisfaction; this allows for our proposal of a new construct, interpersonal need fulfillment, which could capture a wide range of work characteristics and interactions as antecedents. This allows for more nuanced research and potentially a more comprehensive framework for examining the effects of workplace characteristics and experiences on employees.

A large body of work, for example in psychological contract theory, has focused on intrapersonal need fulfillment, such as opportunities for fair pay, training, organizational support, and job security in return for effective work behaviors (Robinson et al., 1994). There has also been research studying intraindividual need fulfillment at work (e.g., need for competence and autonomy; De

Gieter et al., 2018; Ilies et al., 2017). It is time, however, to build upon these literatures to also recognize the interpersonal benefits that employees value and receive as part of their working relationship; we have done so by showing that intrapersonal and interpersonal need fulfillment perceptions contributed independently to job satisfaction. In addition, focusing on employees' perceptions of the extent to which receipt of both intrapersonal and interpersonal benefits fulfills their needs is important in light of recent research indicating that it is what the organization delivers and not what it promises that matters most to employees (Lambert, 2011; Montes & Zweig, 2009). At a general level, by examining the effects of need fulfillment on job satisfaction and further on OCBs, our work contributes to theory on social exchange relationships at work, and research on job attitudes.

Our work contributes to research on social exchange relationships in the work and employment context. Organizational research has long recognized that the nature of social exchange interactions differs from economic exchanges, in that, unlike purely economic exchange relations, social exchange interactions encompass obligations and reciprocations that are not clearly specified or delineated between the interacting parties (e.g., Blau, 1964; Masterson, Lewis, Goldman, & Taylor, 2000). Some exchanges, however, are more easily quantifiable than others, and we believe that distinguishing between the exchange of intrapersonal and interpersonal resources is important in this respect. Intrapersonal benefits (e.g., pay, fairness, autonomy) and the extent to which they fulfill employees' needs are more easily assessed at work (e.g., Ho, 2005) because such benefits have been captured by existing frameworks and constructs (e.g., Coyle-Shapiro & Conway, 2005). On the other hand, the exchange of interpersonal benefits has been less often (and is less easily) assessed because such benefits have not been explicitly incorporated into organizational frameworks. Furthermore, perceptions of interpersonal need fulfillment are likely to be more subjective and to differ more substantially across individuals because they are a function of more personal social relationships with one's supervisor or coworkers. We believe that a more comprehensive evaluation of exchange perceptions (and further of the outcomes of these exchanges) is possible when both intrapersonal and interpersonal employee benefits are explicitly assessed at work, and we offer a measure of interpersonal need fulfillment along with some initial evidence for its validity.

Our research also contributes to the literature on the antecedents of job attitudes and the processes that explain their effects. Whereas research has established the importance of the features of the work itself for predicting job satisfaction, it has only recently examined the effects of the social environment on job satisfaction and this research largely focused on social support (Judge & Kammeyer-Mueller, 2012). We further contribute to this literature and research by showing that social aspects of the working environment (interpersonal justice and coworker support) contribute uniquely to job satisfaction via their effects on interpersonal need fulfillment. Our findings are consistent with other work illustrating the importance of coworker support and interpersonal justice for job satisfaction (Chiaburu & Harrison, 2008; Masterson et al., 2000), but we go one step further by showing that the social environment is important, in part, *because* it fulfills employees' expectations for opportunities to relate and to connect emotionally to others in the workplace.

By first demonstrating that interpersonal need fulfillment is a parallel yet distinct construct from intrapersonal need fulfillment, and then placing this construct within a nomological network predicting OCBs through job satisfaction, our theorizing and findings might be fruitful in extending theory on psychological contracts. Several scholars have recognized that current conceptualizations of psychological contract perceptions may not fully portray exchange relationships at work (e.g., Thompson & Bunderson, 2003; Rousseau, 2004). One reason may be because psychological contracts focus primarily on the intrapersonal and little on the interpersonal benefits that employees derive at work. Perceptions of psychological contract fulfillment predict a host of important work behaviors and attitudes such as task performance, OCBs, and job satisfaction (Zhao, Wayne, Glibkowski, & Bravo, 2007). Although we did not assess perceptions of psychological contract fulfillment, our findings are consistent with this literature in that we show that perceptions of procedural justice and job autonomy contribute to job satisfaction and OCBs, via perceptions of intrapersonal need fulfillment. Nevertheless, we also found that a parallel and distinct mechanism of interpersonal need fulfillment also contributes to positive work outcomes, and it explains (mediates) the effects of coworker support and interpersonal justice on these outcomes. These findings are consistent with theoretical work suggesting that the social environment at work supports employees' socioemotional needs to belong and to relate to others (Reich & Hershcovis, 2011), and suggest that a more complete understanding of the benefits involved in the employment relationship could be achieved when both intrapersonal and interpersonal aspects of contract perceptions are considered.

Finally, we are able to make a number of recommendations for practitioners. One practical implication is that organizations may be able to contribute positively to perceptions of intrapersonal need fulfillment by implementing fair organizational procedures and by providing employees with more control over their job. Another implication is that it may be beneficial for organizations to implement procedures and policies that allow employees to experience positive interactions with their coworkers. Employees value opportunities to connect to others in the workplace, which are represented by their assessment of interpersonal need fulfillment. In fact, compared to intrapersonal need fulfillment, perceptions of interpersonal need fulfillment explained a similar amount of variance in job satisfaction. We also found that interpersonal need fulfillment was uniquely predicted by interpersonal justice and coworker support. Thus, to properly manage interpersonal need fulfillment, organizations could train their managers to treat their subordinates in a polite and dignified way. In addition, organizations could promote a culture of amicability and friendliness to facilitate the fulfillment of employees' social needs. The implementation of organizational support programs that facilitate help giving among employees may also satisfy prosocial needs and increase employees' commitment to the organization (Grant, Dutton, & Rosso, 2008).

6.2. Limitations and directions for future research

This study has a number of limitations. First, even though we separated the self-reported measurement of the antecedents and mediators in time and have a peer-rated measurement of OCBs, all mediators (i.e., the two types of need fulfillment constructs and job

satisfaction) were measured at the same time. Future research ought to attempt to replicate our findings by spacing the measurement of need fulfilment and job satisfaction (or other job attitudes) in time to reduce common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Second, although our antecedents explained a considerable amount of variance in intrapersonal and interpersonal need fulfillment perceptions (42% and 48%), other intrapersonal and interpersonal antecedents may also predict these need fulfillment perceptions. Therefore, future research ought to examine other antecedents, such as leader-member exchange and coworker exchange for interpersonal need fulfillment, and job demands and workload perceptions for intrapersonal need fulfillment. Perceptions of high leader-member exchange quality and coworker exchange quality may positively contribute to interpersonal need fulfillment perceptions, whereas high job demands and workload perceptions may decrease perceptions of intrapersonal need fulfillment. These remain empirical questions that need to be investigated in future research.

Another limitation of our study is that we focused only on job context predictors of need fulfillment perceptions. The organizational context limited the length of our survey instruments, and therefore we could not measure many antecedents. Although the selection of our antecedents was informed by social exchange theory (e.g., Bies, 2001; Cropanzano et al., 2001; Dulac, Coyle-Shapiro, Henderson, & Wayne, 2008), research indicates that intrapersonal need fulfillment perceptions (e.g., the need for competence) are affected by individual traits as well (e.g. Ilies et al., 2017). Thus, it is likely that interpersonal need perceptions may be affected by individual differences. Agreeable people, for example, strive for communion (Barrick, Stewart, & Piotrowski, 2002) and may therefore have higher perceptions of interpersonal need fulfillment or be more sensitive to the fulfillment of social needs. Future research investigating the moderating effects of personality on the effects of work environment on interpersonal need fulfillment or on the outcomes of interpersonal need fulfillment would enrich our understanding of this construct and its implications.

Finally, another limitation relates to the measurement of the need fulfillment perceptions. For one, we take note that our measurement of intrapersonal need fulfillment is an adaptation of a psychological contract (inducements) measure, as we drew from existing work on the measurement of need fulfillment (e.g., Deci & Ryan, 2000; Reis et al., 2000) and presumed that receiving these inducements at work translates into need fulfillment. We framed interpersonal need fulfillment in a similar fashion, and developed a measure of social inducements (e.g., my job has given me the opportunity to feel close and connected to other people at work) that are thought to fulfill employees' interpersonal needs (Reis et al., 2000). We believe that the distinction between intrapersonal and interpersonal need fulfillment and the measurement of these two constructs that we used and proposed are especially useful in the context of work; nevertheless, future research should examine these two constructs vis-à-vis more traditional need fulfillment constructs (i.e., autonomy, competence and relatedness). We also measured need fulfillment perceptions at one point in time. It is possible, however, that perceptions of both intrapersonal and interpersonal need fulfillment perceptions evolve over time (e.g., Conway & Briner, 2002; Ng, Feldman, & Lam, 2010; Robinson et al., 1994). Economic hardships or changes in the composition of the workforce may give rise to different employee expectations and subsequently to variations in need fulfillment perceptions. Future longitudinal research, therefore, would be beneficial to investigate how intrapersonal and interpersonal need fulfillment perceptions evolve over time.

7. Conclusion

Employees value various benefits of the workplace, ranging from intrapersonal benefits such as pay and opportunities for growth to interpersonal benefits such as feeling connected and belonging at work. Our study provides evidence for these arguments. We show that perceptions of contextual features of the working environment (job autonomy and procedural justice) predict perceptions of intrapersonal need fulfillment, whereas perceptions of the social environment (interpersonal justice and coworker support) predict perceptions of interpersonal need fulfillment. Intrapersonal and interpersonal need fulfillment have unique effects on job satisfaction, which further relates to OCBs. Our findings suggest that consideration of both intrapersonal and interpersonal need fulfillment provide a richer and more comprehensive understanding of the benefits that employees value in the workplace, as well as of the effects of employees' evaluations of these benefits on work attitudes and behaviors.

Appendix A. Interpersonal need fulfillment scale

My job has given me opportunities to:

1. …feel close and connected to other people at work.
2. …be understood and appreciated by coworkers and supervisors.
3. …feel a sense of relatedness with coworkers and supervisors.
4. …develop good relationships with coworkers and supervisors.
5. …receive emotional support from coworkers and supervisors.
6. …be listened to and understood by coworkers and supervisors.
7. …be able to communicate and express matters of personal importance.
8. …be able to participate in shared social activities with coworkers and supervisors.
9. …make friends with whom to spend time in social activities outside work.
10. …provide the feeling that you belong in the organization.
11. …provide a sense of contact with coworkers and supervisors.
12. …provide a sense of solidarity with people at work.

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