



# All for one, one for all: Compassionate goal orientation, social support, and work engagement

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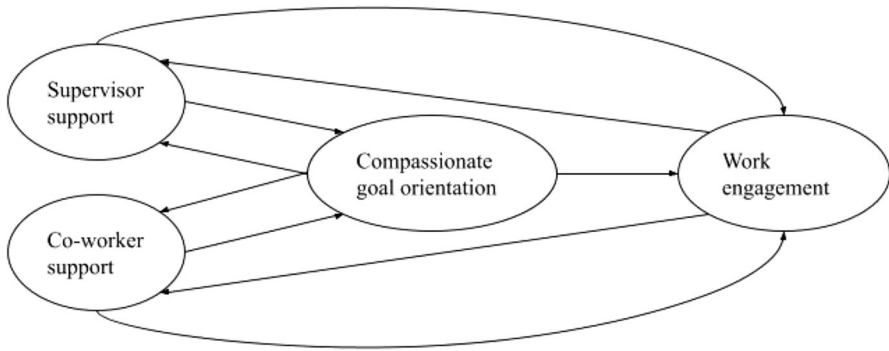
## Abstract

Though social support plays a critical role in worker well-being and engagement, its mechanisms of action for motivating work engagement remain unclear. Further, literature to date has primarily examined internally-focused personal resources (e.g., confidence, optimism) as a consequence and predictor of job resources such as perceived social support, yet relationally-focused personal resources (e.g., orientation toward others) may have greater relevance in this social context. Extrapolating from associations posited within an expanded job demands-resources model and the egosystem-ecosystem theory of social motivation, this study used a random-intercepts cross-lagged panel model to examine whether a compassionate goal orientation, a novel personal resource, may be a mechanism through which social support at work facilitates work engagement. Using three waves of survey data from 850 working U.S. adults, we demonstrated a reciprocal relationship between a compassionate goal orientation and perceived co-worker support, providing initial evidence for the importance of interpersonal goal orientation in fostering workplace support among colleagues. Yet, we did not find support for a reciprocal relationship between co-worker or supervisor support and work engagement. Our study provides preliminary evidence supporting the importance of a compassionate goal orientation. Insights gained through this work represent a valuable contribution toward a better understanding of factors that promote effective collaboration in the workplace in service of shared organizational goals.

**Keywords** Compassionate goal orientation · Supervisor support · Co-worker support · Work engagement · RI-CLPM

## 1 Introduction

Over the past few decades, research on work engagement has grown exponentially (Bakker & Albrecht, 2018). Work engagement refers to “a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption” (Schaufeli et al., 2002, p. 74) and has been linked to various favorable employee, team, and



**Fig. 1** Conceptual model

organizational outcomes (Bakker & Albrecht, 2018). Extrapolating from relationships posited within the Job Demands-Resources model (JD-R; Bakker & Demerouti, 2007; Demerouti et al., 2001), researchers have identified job resources that may promote work engagement, such as perceived social support (e.g., Christian et al., 2011). However, though social support has received notable attention, the relationship between perceived support and work engagement has amassed inconsistent empirical support, particularly when studied cross-sectionally versus across multiple time points, when examined as one part of a larger composite “job resource” score, and when sources of support are not differentiated (e.g., from co-workers versus supervisors). Furthermore, despite broad recognition of the relevance of social support, its mechanisms of action for motivating work engagement remain unclear. In other words, beyond general motivational aspects proposed by the JD-R model, how does support at work lead to work engagement?

A more recent expansion of the JD-R model incorporates individual-level factors, or *personal resources*, as consequences and predictors of job resources and facilitators of work engagement (Xanthopoulou et al., 2007). Although literature to date has primarily examined internally-focused personal resources (e.g., confidence, optimism), relationally-focused personal resources (e.g., orientation towards others) may have greater relevance in this social context. Specifically, we propose that a novel personal resource, compassionate goal orientation (a type of prosocial motivation), is a mechanism by which social support at work, a type of job resource, partially facilitates work engagement. Thus, the present work represents both a replication and a novel extension of the literature examining personal resources, social support, and work engagement in the context of the JD-R model. The conceptual model is displayed in Fig. 1.

Our study contributes to the literature in three main ways. First, consistent with prior work, we attempt to replicate the cyclical relationship between personal resources and job resources (e.g., Xanthopoulou et al., 2007); yet importantly, we extend this model by introducing a novel personal resource of compassionate goal orientation both as a predictor and an outcome of perceived co-worker and supervisor support. In doing so, we integrate theory from the JD-R model with the egosystem-ecosystem theory of social motivation. In addition, we address two methodological

limitations of prior studies to enhance our understanding of the relationship between social support and work engagement. Because prior research has considered social support as a constituent part of a larger interchangeable set of job resources (e.g., Kinnunen & Feldt, 2013; Lesener et al., 2019; Vogt et al., 2016), we focus solely on the relationship between support and work engagement, and also attempt to differentiate between co-worker and supervisor support in their relationship with work engagement. Additionally, in response to calls to study the dynamic relationship between job resources and engagement over time using multiple waves of data (Lesener et al., 2019), we examine longitudinal patterns in both direct and reciprocal relationships and isolate the contribution of within-person variability using a random-intercepts cross-lagged panel model (RI-CLPM; Hamaker et al., 2015).

### 1.1 Job Resources and Work Engagement

The JD-R model was created to explain factors that predict work burnout and engagement; it has subsequently been widely used to predict employee attitudes, behaviors, and various indicators of well-being. High *job demands* (e.g., excessive workload or pressure) that require sustained effort are linked to burnout, absenteeism, and other negative outcomes through a health impairment process (Bakker et al., 2003). In contrast, *job resources* (e.g., social support, autonomy) predict work engagement through a motivational process and may be associated with positive downstream effects (e.g., organizational commitment; Hakanen et al., 2006). For example, Schaufeli et al. (2009) demonstrated that higher job resources positively predicted work engagement over a one-year period among managers and executives of a Dutch telecom company. Work engagement may also facilitate the mobilization of job resources, including social support (Bakker & Demerouti, 2014; Xanthopoulou et al., 2009). Indeed, some prior research has suggested that a reciprocal model may best illustrate the association between job resources and work engagement (Lesener et al., 2019; Vogt et al., 2016; Xanthopoulou et al., 2009). However, some examinations of longitudinal/time-lagged reciprocity between job resources and work engagement have yielded inconsistent results. For instance, Kinnunen and Feldt (2013) did not find one-year lagged effects of job resources on work engagement among Finnish workers. Similarly, Schneider et al. (2017) could not support either two-year or seven-year lagged relationships between job resources and work engagement among German physicians. Likewise, Bickerton et al. (2014) did not demonstrate a reciprocal relationship between job resources and work engagement in Australian spiritual workers, but work engagement had a positive cross-lagged effect on job resources.

In light of these inconsistencies regarding the reciprocal relationship between job resources and work engagement when studied longitudinally, it is important to consider that unique job resources may confer different effects. One type of resource, social support, deserves particular attention, given its importance in the workplace (French et al., 2018). However, perceived social support has primarily been examined in aggregate with other job resources (i.e., as a larger “job resource” composite), which may contribute to the inconsistent findings noted above. For example,

composites previously used included a combination of domains such as control at work, justice of the supervisor, development opportunities, autonomy, and role clarity, in addition to support from co-workers and/or supervisors (Kinnunen & Feldt, 2013; Lesener et al., 2019; Vogt et al., 2016). Combining job resources into a single construct contributes to confusion regarding the unique relationship between individual job resources, such as perceived support and work engagement. Moreover, even aggregating social support as a unified resource may obscure nuances in relationships between specific sources of social support (e.g., co-worker, supervisor) and work engagement. Though support is generally experienced positively, its strength in motivating work engagement may differ depending on the source; thus, isolating specific types of social support and work engagement is critical to understanding the roles of specific job resources in the workplace.

## 1.2 Social Support and Work Engagement

Social support (as a type of job resource) may intrinsically motivate employees, because it satisfies the basic human need for social connection (Baumeister & Leary, 1995; Gagné & Deci, 2005). According to Kahn (1990), experiencing support and positive interactions at work contribute to an environment in which individuals feel safe, are willing to employ their resources through work engagement, and perform without fearing negative consequences (see also May et al., 2004). As such, the availability of social support may indeed promote work engagement. In prior research, support originating from co-workers and/or supervisors has evidenced generally positive—though different—relationships with work engagement. Social support from colleagues has been positively related to work engagement cross-sectionally in a sample of four Dutch service organizations (Schaufeli & Bakker, 2004) and supervisor support has been positively linked to work engagement among Finnish teachers (Hakanen et al., 2006). Research in the healthcare industry has demonstrated similar relationships (Othman & Nasurdin, 2013; Poulsen et al., 2016; Vera et al., 2016), consistent with the JD-R model. To build on this work, an emerging line of research has begun to examine the reciprocal relationships between specific types of social support and work engagement over time. In line with the motivational process hypothesized by the JD-R model (Ângelo & Chambel, 2015; Bakker & Demerouti, 2007), workers who perceive support from their co-workers and supervisors may be motivated toward greater levels of engagement in their job. Biggs et al. (2014) demonstrated that work engagement predicted lagged co-worker and supervisor support in a sample of Australian state police employees. Yet, Ângelo and Chambel (2015) did not find a significant lagged relationship between supervisor support and work engagement over one year in a sample of Portuguese firefighters. To complete the reciprocal relationship, co-workers and supervisors who recognize work engagement may be more inclined to provide support to the engaged worker, resulting in greater perceived support. Yet, interestingly, only work engagement and co-worker support evidenced a positive reciprocal relationship in the sample examined by Biggs et al. (2014).

In sum, aligned with tenets of the JD-R model, cross-sectional research largely supports positive relationships between work engagement and co-worker support as well as supervisor support. Building on this, a growing body of longitudinal research has also provided some support (albeit less consistent) for a bi-directional relationship between the specific sources of support and work engagement. Thus, to further clarify these relationships, we propose to test the reciprocal relationship of co-worker and supervisor support with work engagement. Importantly, some inconsistencies observed between the different sources of support in prior work highlight the importance of examining their contributions separately, toward continued refinement of the JD-R model.

*Hypothesis 1.* Positive and differentiable reciprocal cross-lagged relationships will exist between work engagement and (a) co-worker and (b) supervisor support.

### 1.3 Social Support and Personal Resources

As noted, the JD-R model provides a rationale for co-worker and supervisor support (job resources) reciprocally relating to engagement through motivational processes. Yet, more precise motivational underpinnings of these relationships are unclear. In other words, how and why do supervisor support and co-worker support engender motivation, and ultimately, engagement at work? Below, we propose a novel motivational mechanism, grounded in literature and theory on personal resources.

Personal resources are defined as a worker's sense of their ability to control and act upon their environment successfully (Hobfoll et al., 2003). As such, personal resources may be increased by support from others (Bandura, 1988), and in turn, may promote engagement. An expansion of the JD-R model incorporates these personal resources as potential mediators that may help convey the beneficial effects of job resources on engagement, such that the supply of job resources "activates" personal resources as they enable individuals to feel efficacious, important to the organization, and optimistic, which in turn, facilitates engagement (Bakker & Demerouti, 2014; Xanthopoulou et al., 2007). Furthermore, employees with more personal resources may form stronger positive evaluations about themselves, and this may enable them to identify factors that promote engagement or create more resourceful work environments.

Indeed, Xanthopoulou et al. (2007) examined a composite of three personal resources (self-efficacy, organizational-based self-esteem, and optimism) and demonstrated that personal resources partially mediated the relationship between job resources and work engagement. The same research team then demonstrated a dynamic, reciprocal relationship of personal resources with job resources and work engagement over time: job resources predicted personal resources and work engagement; and personal resources and work engagement, in turn, predicted job resources (Xanthopoulou et al., 2009). Though research considering the role of personal resources remains relatively scarce, such findings are consistent with more recent work on the importance of considering individual-level characteristics that form a

critical link between job resources and engagement (Van Veldhoven et al., 2020). Specifically, our focus on social support necessitates consideration of relationally-oriented personal resources. Moreover, relational motivational theories from social psychology provide a framework for linking co-worker and supervisor support and work engagement.

The egosystem-ecosystem theory of social motivation (Crocker & Canevello, 2008) posits that individuals who are more motivated by the interpersonal “ecosystem” framework are oriented toward others (i.e., see themselves as an integral part of a larger social ecosystem). A compassionate goal orientation is illustrated by genuine care for the welfare of others (Crocker & Canevello, 2008), responsiveness to others’ needs (Canevello & Crocker, 2010) and consideration of the self as part of a larger interpersonal system characterized by mutual respect, caring, and support (Crocker & Canevello, 2012; Crocker et al., 2009). As such, a compassionate goal orientation may function as a vital personal resource that emerges when individuals experience social support at work. Various factors have the potential to activate the ecosystem; most notably, social experiences can elicit a compassionate goal orientation, such as psychological safety and trust that one’s needs will be met in collaboration with one’s social environment (Crocker & Canevello, 2012)—perceptions that are likely encouraged by experiencing social support from others at work. Specifically, relational job resources such as social support are thought to lead to perceptions of an interdependent, mutually beneficial network, which may in turn function as a relationally oriented personal resource. When individuals have a strong compassionate goal orientation, they work to meet others’ needs as much as their own, not because they expect a personal gain, but because they are genuinely concerned about others (Crocker et al., 2009). Fellow co-workers and supervisors can likely discern when individuals act in accordance with a compassionate goal orientation, which may motivate them to reciprocate the support, triggering an upward spiral of responsiveness, as suggested by work with college roommates (Crocker & Canevello, 2008). As a result, individuals may perceive greater support from co-workers and supervisors even though obtaining support was not their initial goal (Crocker et al., 2009).

*Hypothesis 2.* Positive, cross-lagged, reciprocal relationships will exist between compassionate goal orientation and (a) co-worker support as well as (b) supervisor support.

#### 1.4 Personal Resources and Work Engagement

As mentioned previously, individuals with a compassionate goal orientation consider themselves to be a part of a larger group and take others’ needs into account as they recognize that their actions will have consequences for others, as well as repercussions for the entire system (Crocker et al., 2009). Prior work further suggests that individuals with a compassionate goal orientation have higher relational self-construals, meaning that they define themselves in terms of their group membership and social role (Jiang et al., 2017). Given these findings, it is possible that employees

with a compassionate goal orientation are engaged in their work because they care about the welfare of the organization as a whole. Recent work examining the link between compassionate goal orientation and surface acting (i.e., masking one's emotions and facing emotional displays) has demonstrated a negative relationship (Roos et al., 2022), suggesting perhaps that those with a compassionate goal orientation may be truly engaged at work, necessitating less surface acting. To examine this, it is important to investigate whether socio-motivational factors, like a compassionate goal orientation, directly predict engagement at work. In theory, because individuals with a compassionate goal orientation view themselves as an integral part of the organization (Crocker et al., 2009), they may be more strongly engaged in their work, because they believe that this will contribute to ongoing organizational success.

*Hypothesis 3:* A positive relationship will exist between a compassionate goal orientation and work engagement.

To date, the research testing the tenets of the ecosystem-ecosystem theory has primarily focused on compassionate goal orientation in the context of personal relationships (e.g., friendships, roommates, romantic relationships; Canevello & Crocker, 2010; Crocker & Canevello, 2008; Crocker et al., 2017), though has yet to examine its applicability to professional work relationships (e.g., among colleagues, between employees and supervisors). This is a notable gap, given that many individuals spend a substantial amount of their waking hours at work, often with little choice in with whom they work. According to Crocker and Canevello (2008), individuals with a compassionate goal orientation "want to be a constructive force in their interactions with others" (p. 557), which seems to suggest that they intentionally engage to benefit the relationship and those in it. Extending this from the dyadic context to the systemic context of the workplace, a context of positive and supportive workplace interactions (e.g., with co-workers and supervisors) might lead to a compassionate goal orientation, which ultimately promotes work engagement. As such, a compassionate goal orientation may be a potential mechanism by which social support from co-workers and supervisors facilitates greater work engagement.

*Hypothesis 4:* A compassionate goal orientation will partially mediate the cross-lagged relationship between work engagement and (a) co-worker support as well as (b) supervisor support.

In the context of examining socio-motivational and relational factors associated with workplace engagement, it is important to consider that a multitude of relational orientations may co-exist within the workplace. Within the ecosystem-ecosystem theory of social motivation, individuals with a so-called self-image goal orientation (i.e., an "ecosystem" motivational perspective) are primarily interested in satisfying their own needs and desires, regardless of the impact on others (Crocker & Canevello, 2008). Those with a self-image goal orientation may only care about others' needs if doing so satisfies their own need for belonging or if appearing nice and caring allows them to build or reinforce the image of being a nice person in their own



and others' eyes (Crocker & Canevello, 2012). That is, self-image goals may also be associated with work engagement despite the difference in motivation between self-image and compassionate goal orientations. Accordingly, we account for self-image goal orientation in our examination to focus on the unique role of compassionate goal orientation.

## 2 Method

### 2.1 Participants

After approval was obtained by the university's Institutional Review Board (IRB #18–0145), 888 participants were recruited from MTurk to complete an online survey at Time 1 (T1), 485 of which completed an online survey at Time 2 (T2), and 335 of which completed an online survey at Time 3 (T3). Data cleaning at all three time points included removing duplicate responses, participants who reported working less than full-time ( $\leq 30$  h per week, on average), and participants who demonstrated insufficient effort responding. We identified insufficient effort as incorrectly answering more than one attention check question (e.g., "select strongly agree for your response to this question"), and as responding more quickly than would be plausible if the respondent read the instructions (e.g., less than five minutes). The final analytic sample included 850 participants.

### 2.2 Procedures

We restricted participation to MTurkers who lived in the United States and reported working at least 30 h per week on average at the time of data collection (June through August 2018). After selecting into the study on MTurk, participants received a link that included an informed consent and the 20-min survey via Qualtrics. All participants completed the Qualtrics survey 30 days apart each time, yielding responses at three time points. Participants were compensated with \$3.00, \$3.50, and \$4.00 USD at Times 1, 2, and 3, respectively.

### 2.3 Measures

**Compassionate and self-image goal orientations** The Compassionate and Self-image Goals measure (adapted from Crocker & Canevello, 2008) was used to capture individuals' goal orientation to their relationships with others at work. Participants rated 16 statements<sup>1</sup> from 1 (*Not at All*) to 5 (*Extremely*) following the initial

<sup>1</sup> The original scale consisted of 17 items in two subscales (eight items for compassionate goals; nine items for self-image goals). To assess the equivalence of latent variables comprising the different items for both types of goal orientation (compassionate and self-image), we utilized principal axis factor analysis with promax rotation. Factor loading values (i.e.,  $\lambda$ ) below 0.30, or items loading onto more than one factor at higher than half of the value of the highest loading factor were removed. One self-image goal item ("Avoid appearing unlikable") loaded onto the factors for both compassionate ( $\lambda = 0.34$ ) and self-image goals ( $\lambda = 0.48$ ). After removing this item, another principal axis factor analysis with pro-



prompt “*At work, how much do you want/try to do each of the following...*” which included two subscales (eight items for compassionate goals; eight items for self-image goals). An example item of the compassionate goal orientation subscale includes “*Be aware of the impact my behavior might have on others.*” An example item of the self-image goal orientation subscale includes “*Get others to respect or admire me.*” Scores were averaged separately for each subscale. Higher scores indicated a stronger compassionate goal orientation (and self-image goal orientation). The compassionate goals subscale demonstrated high internal consistency (Cronbach’s  $\alpha$ ’s were 0.88, 0.89, and 0.89 at T1, T2, and T3, respectively). Consistent with prior work that has included both compassionate goals and self-image goals as simultaneous predictors to identify their unique effects (see Crocker & Canevello, 2012), we controlled for self-image goals (Cronbach’s  $\alpha$ ’s for self-image goals were 0.83, 0.85, and 0.86).

**Supervisor support** We used the four-item Supervisor Support Scale, which was adapted from Eisenberger et al. (2002) for the Health and Retirement Study (Smith et al., 2013). An example item includes “*My supervisor is willing to extend himself/herself to help me perform my job.*” Rated on a scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*), scores were averaged to calculate a composite score with higher scores indicating greater supervisor support. Cronbach’s  $\alpha$ ’s were 0.91, 0.92, and 0.92 at T1, T2, and T3.

**Co-worker support** We used the three-item Co-worker Support Scale, which was adapted from Haynes et al.’s scale (1999) for the Health and Retirement Study (Smith et al., 2013). Items were rated from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Ratings were averaged, with higher scores indicating greater co-worker support. An example item is “*My co-workers help me with difficult tasks.*” Cronbach’s  $\alpha$ ’s were 0.86, 0.87, and 0.88 in this study.

**Work engagement** The Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006) is a nine-item scale administered to measure three aspects of work engagement: vigor, dedication, and absorption. Collectively, they form a higher-order construct of work engagement. Example items for each subscale include: “*At my work, I feel bursting with energy*” (vigor), “*I am enthusiastic about my job*” (dedication), and “*I am immersed in my work*” (absorption). Using a scale from 0 (*Never*) to 6 (*Always/every day*), higher scores indicate greater work engagement. Considering the high correlations among the three sub-dimensions and some research suggesting that the one- and three- factor structure of the UWES could be considered equivalent (see Kulikowski, 2017 for a review), the present study follows prior recommendations (e.g., Schaufeli & Bakker, 2010; Schaufeli et al., 2006) and utilizes a

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Footnote 1 (continued)

max rotation confirmed the remaining items as loading properly onto their respective factors. Sixteen items remained.

composite (single-factor) score, created by averaging the scores for all factors. Cronbach's  $\alpha$ 's were 0.95, 0.95, and 0.96 at T1, T2, and T3.

## 2.4 Analytic Strategy

To accommodate the three waves of data, we tested our hypotheses using a random-intercepts cross-lagged panel model (RI-CLPM, Hamaker et al., 2015), which partitions variation related to both between- and within-person processes. A growing body of research highlights a potential problem with the commonly used cross-lagged panel model (CLPM) to analyze longitudinal panel data (see Hamaker et al., 2015; Zyphur et al., 2020). Specifically, traditional CLPM models may produce biased estimates of cross-lagged effects because they conflate within-person and between-person processes; in other words, they do not control for stable between-person variance.

Models were constructed and estimated using the R packages *lavaan* (Rosseel, 2012) and *riclpm* (Flournoy, 2020). Missing value analyses (conducted using the *mvn* package; Korkmaz et al., 2014) suggested that mean scores on focal variables for those who completed subsequent waves did not differ from the mean scores of dropouts. Generally, analyses suggested that the missing data were likely to be missing at random. As a result, full-information maximum likelihood estimation, which is robust to different missingness reasons as well as to divergences from the normal distribution, was used to retain as much of the data as possible and to avoid the high risk of bias associated with complete case analysis (Enders, 2001a, b).

The random intercepts cross-lagged panel model (RI-CLPM) was specified in accordance with the recommendations of Hamaker et al. (2015). The five random intercept factors reflect the trait aspects of self-image goals, compassionate goals, co-worker support, supervisor support, and work engagement, over time. The 15 observed scores reflected the indicators of each random intercept (i.e., one for each variable at each of the three measurement waves), with all factor loadings constrained to 1. The within-person variation was modeled by regressing each observed score on its own latent factor. The resulting 15 latent factors (i.e., one for each variable at each of the three measurement waves) were subsequently used to specify within-time associations, carry-over stability paths, and cross-lagged paths. Moreover, the inclusion of random intercept and latent/observed variable terms for self-image goals allowed us to control for its potential role in cross-lagged associations. The error variances of the observed scores were constrained to zero, such that all variation in the observed measures was attributed to the within-person and between-person latent factor structures.

In assessing fit, we considered models with comparative fit index (CFI) values  $> 0.90$  to have acceptable fit and  $> 0.95$  good fit; for root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR) values,  $< 0.08$  indicated acceptable fit and  $< 0.05$  good fit (Bentler & Bonett, 1980; Hu & Bentler, 1999). As recommended in cross-lagged analyses (e.g., Cole & Maxwell, 2003), we examined whether stability and cross-lagged paths could be constrained to be equal over time for model parsimony. We compared the fit of a fully free model

to a model with all stability and cross-lagged associations constrained to be equal over time using a chi-square difference test. We also conducted post-hoc power analyses for both models (Moshagen & Erdfelder, 2016). A sample size of 850 participants yielded a power of 0.91 for detecting model misfit via the RMSEA in the unconstrained model. For the constrained model, analyses yielded a 0.99 power for detecting model misfit via the RMSEA.

### 3 Results

Descriptive statistics and scale correlations are displayed in Table 1. Correlations between the focal variables were all significant and positive. However, self-image goal orientation was only significantly correlated with compassionate goal orientation but not with any of the other variables. Both the (a) unconstrained and (b) constrained RI-CLPM are displayed in Fig. 2. The model fit of the constrained RI-CLPM was excellent,  $X^2(50)=65.548$ ,  $p=0.069$ , CFI=0.997, RMSEA=0.019, SRMR=0.026 [unconstrained model fit  $X^2(10)=15.380$ ,  $p=0.119$ , CFI=0.999, RMSEA=0.025, SRMR=0.015]. Unstandardized path coefficients of the constrained model are reported in Table 2 and unstandardized path coefficients of the unconstrained model are reported in Table 3. The constrained model was comparable in fit to the unconstrained model as indicated by a chi-square difference test [ $\Delta X^2(40)=50.17$ ,  $p=0.130$ ], and slightly better-fitting as suggested by examining other indices of global fit (e.g., RMSEA). As recommended by Cole and Maxwell (2003), we retained the constrained (i.e., more parsimonious) model for parameter estimates and hypothesis testing.

Contrary to Hypothesis 1, results did not provide support for a positive lagged reciprocal relationship between co-worker support (a) and work engagement ( $b=0.027$ ,  $p=0.759$ ;  $b=0.051$ ,  $p=0.405$ ) or between supervisor support (b) and work engagement ( $b=0.123$ ,  $p=0.134$ ;  $b=0.084$ ,  $p=0.247$ ), respectively. In support of Hypothesis 2a, findings revealed a positive lagged reciprocal relationship between co-worker support and a compassionate goal orientation ( $b=0.143$ ,  $p=0.031$ ;  $b=0.238$ ,  $p=0.01$ ). However, contrary to Hypothesis 2b, findings did not evidence a positive lagged reciprocal relationship between supervisor support and compassionate goal orientation ( $b=-0.025$ ,  $p=0.686$ ;  $b=0.1$ ,  $p=0.329$ ). Similarly, results did not provide support for Hypothesis 3; a compassionate goal orientation did not predict work engagement ( $b=-0.114$ ,  $p=0.314$ ). Accordingly, findings did not provide support for an indirect effect of co-worker support (Hypothesis 4a) and supervisor support (Hypothesis 4b) on work engagement through a compassionate goal orientation, respectively ( $b=-0.016$ ,  $p=0.351$ ;  $b=0.003$ ,  $p=0.708$ ). Lastly, findings demonstrated a positive lagged relationship between a self-image goal orientation and supervisor support.

### 4 Discussion

Grounded in the JD-R model, the primary objectives of this study were to investigate the dynamic, longitudinal relationships between two types of social support (co-worker and supervisor support), a novel personal resource, compassionate goal

**Table 1** Descriptive Statistics and Correlations Among Study Variables ( $N=850$ )

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 CG T1	3.85	0.71	<b>.88</b>														
2 CG T2	3.82	0.74	.77	<b>.89</b>													
3 CG T3	3.84	0.75	.70	.77	<b>.89</b>												
4 SS T1	3.60	0.97	.34	.33	.38	<b>.91</b>											
5 SS T2	3.62	0.98	.30	.34	.33	.75	<b>.92</b>										
6 SS T3	3.61	0.98	.36	.41	.44	.77	.80	<b>.92</b>									
7 CS T1	3.92	0.83	.44	.39	.42	.54	.45	.46	<b>.86</b>								
8 CS T2	3.97	0.75	.34	.40	.43	.44	.54	.42	.69	<b>.87</b>							
9 CS T3	3.95	0.78	.32	.41	.46	.48	.51	.50	.70	.72	<b>.88</b>						
10 WE T1	4.89	1.35	.49	.44	.44	.53	.56	.56	.52	.45	.47	<b>.95</b>					
11 WE T2	4.82	1.38	.41	.44	.42	.50	.58	.55	.45	.49	.51	.87	<b>.95</b>				
12 WE T3	4.78	1.42	.39	.39	.44	.51	.57	.58	.46	.46	.50	.86	.87	<b>.96</b>			
13 SG T1	3.42	0.76	.35	.33	.35	.00 <sup>†</sup>	.04 <sup>†</sup>	.07 <sup>†</sup>	.08 <sup>†</sup>	.08 <sup>†</sup>	.05 <sup>†</sup>	.07 <sup>†</sup>	.08 <sup>†</sup>	.06 <sup>†</sup>	<b>.83</b>		
14 SG T2	3.36	0.82	.25	.39	.31	.05 <sup>†</sup>	.08 <sup>†</sup>	.12 <sup>†</sup>	.07 <sup>†</sup>	.09 <sup>†</sup>	.02 <sup>†</sup>	.06	.07 <sup>†</sup>	.05 <sup>†</sup>	.75	<b>.85</b>	
15 SG T3	3.46	0.78	.28	.29	.41	.11 <sup>†</sup>	.08 <sup>†</sup>	.13 <sup>†</sup>	.13 <sup>†</sup>	.08 <sup>†</sup>	.07 <sup>†</sup>	.10	.07 <sup>†</sup>	.08 <sup>†</sup>	.71	.74	<b>.86</b>

CG Compassionate Goal Orientation, SG Self-image Goal Orientation, SS Supervisor Support, CS Coworker support, WE Work engagement, T1 Time 1, T2 Time 2, T3 Time 3

$N=850$ <sup>a</sup> All correlations are statistically significant at  $p < .001$  unless noted as nonsignificant <sup>†</sup>  $> .05$ <sup>b</sup> Cronbach's alpha presented on the diagonal in bold

orientation, and work engagement, and to examine whether a compassionate goal orientation conveys the effect of co-worker and supervisor support on work engagement. We found a reciprocal relationship between co-worker support and compassionate goal orientation, a novel inclusion into the personal resource component of the JD-R model. Specifically, findings suggest that individuals who perceive more support from co-workers have a greater compassionate goal orientation which, in turn, leads individuals to perceive greater co-worker support. Our results are consistent with prior research conducted among college friends, roommates, and romantic dyads (Canevello & Crocker, 2010; Crocker & Canevello, 2008; Crocker et al., 2017), as well as those observed by Zeijen et al. (2020), who demonstrated that employees reciprocate support to the giver. Additionally, Halbesleben and Wheeler (2015) demonstrated that employees perceiving support from co-workers will reciprocate such support by engaging in helping behavior aimed at the support-givers, which the authors argued to be due to increased trust in the co-workers offering future support. In the case of a compassionate goal orientation, one does not expect the receipt of support in return; yet, individuals with a compassionate goal orientation may be more likely to perceive social support as an indication of an environment as caring and supportive, and encouraging of a compassionate goal orientation.

Contrary to expectations, we did not find support for a reciprocal relationship between supervisor support and a compassionate goal orientation. Notably, ours was the first study to examine the relationship between compassionate goal orientation and support in a relationship complicated by an inherent power differential (i.e., supervisor-employee relationships). As such, contrary to what was observed with co-worker support, support from supervisors may not trigger global social motivation consistent with a compassionate goal orientation. In fact, it could be possible that the inherent hierarchy involved with a supervisor may interfere with the worker perceiving their supervisor's support as an indicator of safety and trust (and one that would therefore promote a compassionate goal orientation) while co-worker support may not. Indeed, prior work has highlighted that co-workers, in particular, may act as the primary source of support due to the physical and psychological closeness common among co-workers (over employee-supervisor dynamics; Turner et al., 2010).

Contrary to our hypotheses, neither co-worker nor supervisor support evidenced a relationship with work engagement, which is somewhat inconsistent with results of prior work. Prior cross-sectional work generally provided support for the positive relationship between both types of support and work engagement (e.g., Hakanen et al., 2006; Othman & Nasurdin, 2013; Poulsen et al., 2016; Schaufeli & Bakker, 2004; Vera et al., 2016), and longitudinal work provides some support for a positive reciprocal relationship (Biggs et al., 2014) though not consistently (Ângelo & Chambel, 2015). Of note, prior work has demonstrated effects with unique and specialized samples (e.g., Australian State police employees; Biggs et al., 2014). Though we view our diverse sample as a strength of our study, our findings may also suggest that the documented cross-lagged effect of support on engagement may not generalize well across occupations. For example, variable or even opposite relationships in different occupations may have appeared as an overall null relationship in our sample due to summarizing these effects across diverse occupational backgrounds. In addition, it may

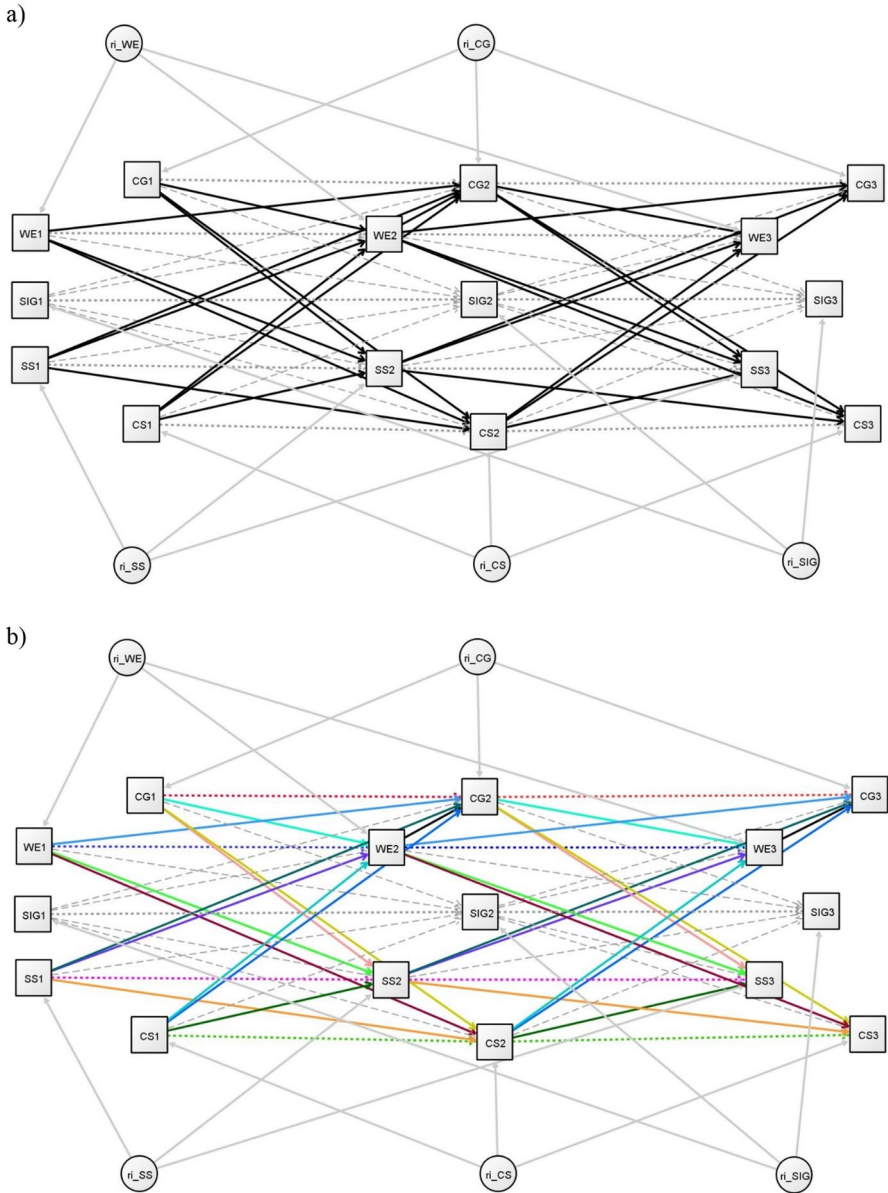
**Fig. 2 a and b.** Unconstrained and Constrained Model. *Note.* Random intercepts-cross lagged panel model tested in the present work. CG=compassionate goal orientation, CS=co-worker support, SS=supervisor support, WE=work engagement, SIG=self-image goal orientation. Latent variables beginning with “ri” represent the random intercept for each construct examined. Random intercept regression paths are displayed in gray for ease of viewing and to highlight primary associations of interest. Autoregressive paths are displayed with dotted lines. Associations with SIG are displayed with dashed lines as SIG functioned only as a control variable (consistent with recommendations) for these analyses. For ease of viewing, variances and exogenous covariances (e.g., between random intercepts) are not displayed and “dummy” latent variables created to represent the observed score at each timepoint are not displayed. All random intercepts were permitted to freely covary. Figure 2a illustrates the unconstrained model in which all cross-lagged and autoregressive paths were estimated freely. Figure 2b illustrates the constrained model in which cross-lagged and autoregressive paths were constrained to equality across time as indicated by matching colors

be that prior research findings are dependent on the combination of supervisor and co-worker support, whereas our separation of these aspects ultimately led to a lack of support for each of these relationships. Alternatively, other job resources, such as role clarity or autonomy, may be more relevant for predicting work engagement.

Statistically, our study utilized a rigorous methodological approach to account for previously noted limitations of traditional CLPMs (e.g., Hamaker et al., 2015; Zyphur et al., 2020). As mentioned previously, CLPMs may produce biased estimates because they conflate within-person and between-person processes. In the present study, the results of the RI-CLPM did not provide empirical support for a reciprocal relationship between either source of social support and engagement, which may suggest that prior effects demonstrated using CLPM (Biggs et al., 2014) may be in part due to combining between- and within-person variability.

Contrary to hypothesis 3, individuals with a greater compassionate goal orientation did not report feeling more engaged at work. While we reasoned that a compassionate goal orientation may act as a personal resource (Xanthopoulou et al., 2007), it may not be equally applicable across contexts. Specifically, compassionate goal orientation may affect work engagement only under specific structural conditions such as certain types of workplace climate and culture as observed with similar outcomes. For example, Montani et al. (2021) found that a compassionate goal orientation related to positive work-related outcomes, such as innovative work behavior (i.e., “intentional generation, promotion, and realization of new and useful ideas in the workplace;” Montani et al., 2021, p. 588) only in the setting of organizational support for innovation and in a specific cultural context.

Alternatively, individuals with a compassionate goal orientation may not perceive a direct link between their own level of work engagement and an expected impact on the overall success of the organization. As such, future research might benefit from qualitative examination to better elucidate the beliefs impacting the motivations and experiences of individuals with a compassionate goal orientation in organizational settings (e.g., what actions help convey their perceived association with the larger organizational entity?). Ultimately, this type of work may inform appropriate frameworks within which to study the correlates of a compassionate goal orientation, which may or may not include work engagement.



Lastly, we did not find support for the hypothesized indirect effects. Specifically, a compassionate goal orientation did not appear to transmit effects of perceived co-worker or supervisor support on work engagement. Given the null findings for the effects of both types of social support as well as compassionate goal orientation on work engagement, it is not surprising that we did not find statistical support for the indirect effect.



**Table 2** Unconstrained Model with All Unstandardized Path Coefficients and Standard Errors (SEs)

DV	CG		CS		SS		WE		SIG	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
CG	.385**/.473***	.141/.109	.085/.304	.155/.123	.002/.267	.148/.149	.002/-.040	.209/.190	-.126/.020	.137/.116
CS	.156/.062	.086/.124	.012/-.107	.116/.158	.121/-.364	.109/.174	.156/-.264	.149/.220	.041/-.112	.103/.138
SS	.054/-.037	.102/.092	-.008/.147	.116/.110	-.032/-.180	.137/.139	.059/.497	.169/.169	.033/.031	.120/.105
WE	.104/-.058	.163/.077	-.093/.104	.185/.091	.375/.067	.186/.111	.008/.148	.302/.144	-.058/-.012	.182/.088
SIG	.073/-.105	.155/.088	.144/-.195	.178/.104	.023/.211	.188/.129	.085/-.110	.250/.163	.237/.234	.202/.103

*IV* Independent variable, *DV* Dependent variable (focal), *CG* Compassionate goal orientation, *CS* Coworker support, *SS* Supervisor support, *WE* Work engagement, *SIG* Self-image goal orientation

The top value indicates the relationship between variables from Time 1 to Time 2; the bottom value indicates the relationship between variables from Time 2 to Time 3  
*N* = 850 \**p* < .05; \*\**p* < .01; \*\*\**p* < .001

**Table 3** Constrained Model with All Unstandardized Path Coefficients and Standard Errors (SEs)

DV	CG		CS		SS		WE		SIG	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
CG	.391***	.102	.238**	0.92	.100	.102	-.114	.113	-.132	.085
CS	.143*	.066	.001	.081	-.132	.072	.027	.088	-.068	.072
SS	-.025	.061	-.046	.059	-.007	.082	.123	.082	.054	.067
WE	-.006	.062	.051	.061	.084	.073	.073	.121	.014	.074
SIG	-.086	.072	-.111	.080	.196*	.088	.091	.112	.238*	.101

*IV* Independent variable, *DV* Dependent variable (focal), *CG* Compassionate goal orientation, *CS* Coworker support, *SS* Supervisor support, *WE* Work engagement, *SIG* Self-image goal orientation

*N* = 850 \**p* < .05; \*\**p* < .01; \*\*\**p* < .001

Interestingly, although these relationships were not hypothesized, we found a positive relationship between self-image goal orientation and supervisor support but not co-worker support. One possible explanation for this finding could be that those with a stronger self-image goal orientation may be more likely to notice support from their supervisors because they may be more motivated to appear positively in front of someone in a position with relative greater power.

#### 4.1 Limitations

Similar to many studies of social support and engagement, the present study employed self-report measures, which may elicit concerns about common method variance. In an effort to mitigate this concern, we used measures from three separate time points to test hypotheses, and such temporal separation may aid in controlling for possible method bias (Podsakoff et al., 2012). Nonetheless, alternative avenues of data collection (e.g., interviews, behavioral observations, etc.) may yield additional insights. We also did not test the measurement equivalence of the measures used which may raise concerns about the interpretation of temporal relationships. However, these measures have been frequently used across a variety of occupational groups with similar properties suggesting likely measurement equivalence. Future work might want to consider formally testing this assumption.

From a sampling bias perspective, we exclusively recruited participants on Amazon's Mechanical Turk (MTurk). Even though there have been questions raised pertaining to the appropriateness of MTurk for organizational research, studies have supported it as a reputable source of representative data, particularly when examining psychological phenomena in diverse populations (Cheung et al., 2017; Walter et al., 2019). Specifically, internal and external validity of data provided by online panel sources such as MTurk appear to be comparable to conventionally sourced (i.e., in-person convenience sampled) data. In addition, we also utilized insufficient effort indicators and respondent qualifications to maximize the quality of our data (cf., Cheung et al., 2017; Keith et al., 2017; see Participants section for more information on insufficient effort indicators). Additionally, while prior cross-lagged

work in this area has often relied on unique samples from a specific occupational field (e.g., first responders, spiritual workers), MTurk is a platform that permits the recruitment of a heterogeneous convenience sample of workers (Buhrmester et al., 2011; Walter et al., 2019). Nonetheless, future research that seeks to examine the role of compassionate goal orientation within specific occupational groups might benefit from specialized sample recruitment.

Additionally, there is an ongoing methodological debate on optimal time lags in occupational research (Schneider et al., 2017). There are both advantages and risks associated with shorter time lags such as the one used in the present work, and time lags in prior work have varied widely. Results of a recent meta-analysis indicated that intervals between assessments ranged from four days to 10 years though shorter time periods increase the likelihood that participating employees remain at the same workplace and decrease the likelihood of major organizational changes during the study (Lesener et al., 2019). In fact, researchers in the applied psychology literature have called for more “shortitudinal” studies using cross-lagged data given that substantive changes can be observed over reasonably short time frames (Dormann & Griffin, 2015). However, a 30-day time lag may be too brief. To this point, our analyses suggested that constraining the paths from T1 to T2 to be the same as those from T2 to T3 did not result in a detectable decrement in model fit, indicating that these relationships did not change appreciably over time. While previous researchers have noted similar problems in terms of assessing changes over relatively short periods of time (e.g., Angelo & Chambel, 2015; Hakanen et al., 2006), no universally accepted time frame has been deemed ideal in this line of work. Given ongoing inconsistencies, future research may benefit from modeling time-dependent associations with the aim of exploring changes in relationships as a function of lag time (Selig et al., 2012).

## 5 Conclusions

Drawing from the expanded JD-R model and the ecosystem-ecosystem theory of social motivation to propose compassionate goal orientation as a novel personal resource, we demonstrated that perceived co-worker support predicted a greater compassionate goal orientation among employees, which in turn predicted higher perceptions of co-worker support. However, our study did not support a reciprocal relationship between coworker or supervisor support and work engagement nor did we observe a mediating relationship between a co-worker or supervisor support, compassionate goal orientation, and work engagement. Using data across three time points from a sample of working adults in various occupations, our study suggests that perceptions of co-worker support in the workplace can initiate a self-maintaining process (i.e., a positive feedback loop) that orients employees toward others and their place in the larger occupational ecosystem. Our study provides preliminary evidence supporting the importance of a compassionate goal orientation, offering a valuable contribution toward a better understanding of factors that promote effective collaboration in the workplace in service of shared organizational goals.

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**Data Availability** The dataset used in this paper will be archived in the Open Science Framework (OSF) in the account of the second author (Dr. Alyssa McGonagle) (<https://osf.io/Y3MJA/>).

## Declarations

**Conflict of Interests** The authors have no conflict of interests to report.

**Ethical Approval** Institutional Review Board (IRB) approval was granted by the University of North Carolina at Charlotte (IRB #18–0145).

**Informed Consent** All participants provided written informed consent.

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